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A WEEKLY REVIEW OF MEDICINE

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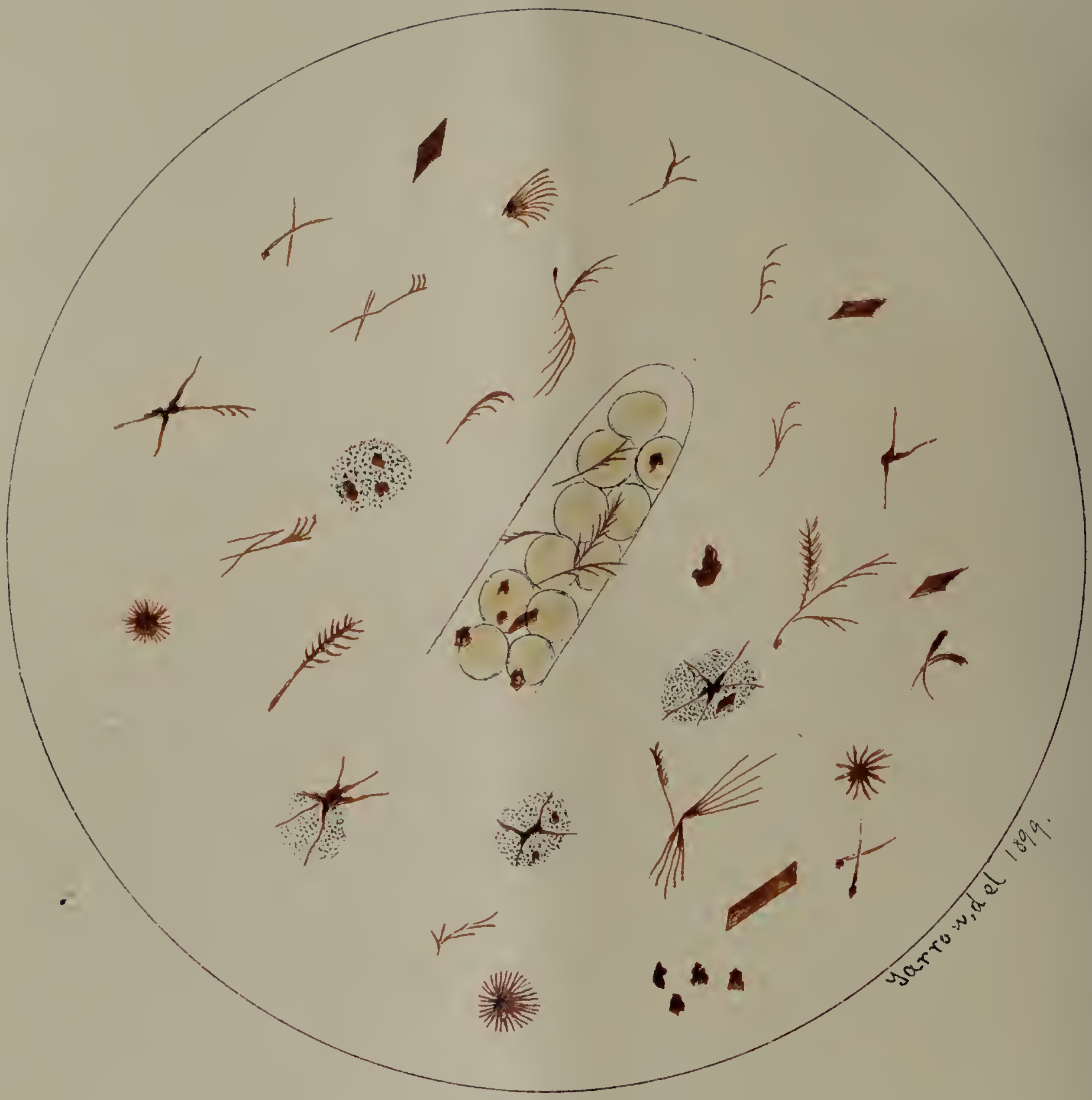

HÆMATOIDIN CRYSTALS FROM DR. YARROW'S CASE OF TRAUMATIC NEPHRITIS.

Objective 3 mm. Eyepiece No. 8 (measured with filar micrometer).

Original Communications.

INJURIES OF THE KIDNEY AND TRAUMATIC (PARENCHYMATOUS) NEPHRITIS,

WITH CLINICAL REPORT OF AN ILLUSTRATIVE CASE ACCOMPANIED BY HÆMATOIDINURIA AND ALBUMOSURIA, TERMINATING IN COMPLETE RECOVERY.

By THOMAS J. YARROW, Jr., M. D.,
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Considering the frequency of the various well-known lesions of the kidney, due to injury by direct violence, acute traumatic (parenchymatous) nephritis, followed by complete recovery, is a rare condition. A glance at modern text-books of surgery and medicine will show little or no mention of this form of nephritis (parenchymatous), due to contusion or laceration of the kidney. Dr. Harold N. Moyer * calls attention to nephritis due to injury, and characterized by blood, albumin, and casts in the urine. He mentions three such cases, the subjects of medico-legal investigation. One patient was a man who was run over by a heavy wagon, the wagon passing over the loins. He presented slight nervous symptoms and copious hæmaturia, followed by the presence of casts and albumin in the urine. This condition persisted for some weeks and (the man had previously been healthy before the accident) was followed by perfect recovery.

Moyer examined the urine of the man at intervals for two years following the accident, and came to the conclusion that the patient had suffered from a traumatism of the kidney, giving rise to albuminuria and casts, and subsequently clearing up. He had also seen two similar cases which had not been well studied.

Contusion or laceration of the kidney is usually due to direct violence produced by many causes—railroad accidents, falls, blows, etc.

In 118 cases of rupture of the kidney, collected by Keen,† the causes of the injury were as follows: Falls, 63; machine accidents, 2; kick in the side, 6; buffer accidents (caught between two cars), 2; struck by falling boiler, 1; struck by falling pipe, 1; struck by falling tree, 1; run over, 15; thrown against a railing, 1; crushed, 4; fall, from breaking of a tight rope, 1; struck in the side, 10; caught between two wagons, 1; squeeze of right side, 1; unknown, 8; knocked down by a wagon, 1—total, 118.

The extent of the injury varies from slight or superficial contusion or laceration to complete destruction of the parenchyma of the kidney. When the cortex alone is involved hæmorrhage may be slight, but grave when one of the larger vessels is torn across, or where there are extensive lacerations of the peritonæum (when the patient may be exsanguinated in a few minutes). In most cases the blood passes down the ureter to the bladder, where it may collect and give rise to severe pain in the pubic region or end of the penis, as in calculus, or it may coagulate in the ureter, subsequently giving rise to hydronephrosis. The blood in the urine shortly after the injury is of a bright red color (oxyhæmoglobin), and unless the hæmorrhage continues becomes of a smoky hue (methæmoglobin), and gradually clears up.

At times extensive extravasation of blood takes place (in violent injuries) and a hæmatoma may form rapidly over the kidney. Subsequently ecchymoses make their appearance anteriorly. If the pelvis of the kidney has been torn, the urine will in some cases escape into the peritoneal cavity or collect in the perirenal tissues, setting up inflammatory changes, resulting in the formation of a large false cyst. When the urine escapes into the peritoneal cavity and the extravasation becomes general, the patient generally dies from acute peritonitis. Sloughing around the kidney, followed by septic absorption, gives rise to the same result. Pain is usually present shortly after the injury, together with tenderness on pressure over the affected region, rigidity of the abdominal muscles, and flexing of the hip. Shock, if very severe, points to grave injury of the peritonæum or extensive hæmorrhage.

Injuries of the kidney may be followed by pyonephrosis, suppurative interstitial nephritis, peritonitis from extravasation of urine or extension of inflammation, hydronephrosis from stoppage of ureter, perinephritic suppuration, and renal fistulæ. Presumably from obstruction of the renal vessels, or the influence of severe shock, total suppression of the urine sometimes occurs.

According to Moullin, the majority of cases of contusion and laceration of the kidney recover without consequence of any kind. He also states: "If there is extravasation of urine or much loss of blood, either at once or later, from giving way of the clot, or the formation of an aneurysm, the question becomes very serious."

The same author asserts that recovery, either complete or with the formation of renal fistulæ, may take place even after suppuration, but if general peritonitis sets in the case is almost hopeless.

I have endeavored briefly to give the causes, symptoms, and results of contusion and laceration of the kidney as gathered from the various text-books on the subject and my own experience, and, as before stated, I have found practically no mention of traumatic nephritis (acute parenchymatous and not the suppurative interstitial form) following the reception of such injuries. May not more cases of nephritis due to this cause occur than we suspect? In nearly all accident cases of this nature the patients are discharged from

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* *Journal of the American Medical Association*, January 17, 1899.

† *Annals of Surgery*, August, 1896.

hospitals (which receive the largest number) as soon as they are able to walk around, and are soon lost sight of.

E. C., aged seven years, white, male (previous and family history negative), first came under my observation on November 8, 1898 (through the kindness of Dr. H. C. Deaver). The patient had been run over at noon by a coal cart, the wheels passing over the right leg and region of the right kidney. His temperature soon after the accident was 96° F.; pulse, 108, weak and compressible; his back in the region of the right kidney and the legs showed signs of contusion. He was catheterized at once, and two ounces of perfectly clear urine, normal in color, were drawn off. Two hours after being catheterized he voided twelve ounces of bloody urine, and his temperature rose to normal. After the use of hot-water bags and diffusible stimulants (the examination of this urine will be found under that heading), his temperature, on November 9th, rose to 100° F.; pulse, 96; otherwise the boy's condition was fair. There was no complaint of pain, and when I saw him he was cheerful and content. All signs of shock had disappeared. His temperature on November 10th was 100.6° F., pulse 100, which was his maximum temperature throughout his illness. After this date his temperature varied between normal and 100° F. until December 7th, when it became normal. A few days before his complete recovery he had a rise of temperature to 102.6° F., due to a slight attack of influenza. Since his recovery he has enjoyed fairly good health, although he is not a robust child. He had not previously to the accident displayed the slightest symptom of renal trouble, and this fact, together with his perfect recovery on December 18th, shows without question that the attack of nephritis was due to contusions sustained in the accident.

One of the most interesting features connected with the case was the occurrence of hæmatoidinuria, which continued until the blood clot had been removed from the contused kidney. The variety in the shape and size of the hæmatoidin crystals, also their color, will be seen in the accompanying plate. According to Stengel, two groups of the hæmatogenous pigmentations occur and may be distinguished: First, those in which the hæmolytic agents act in the circulating blood, and, secondly, those in which the reductions occur in the local tissues. This author further states that the two chief causes in the second group are thrombosis and interstitial hæmorrhage and coagulation. Thus we find decomposed, altered, or oxidized blood pigment in the body, in the contents of old cysts, at old hæmorrhagic foci, in the phagocytic cells which transport pigment to various parts of the body, and pigment is frequently observed in the leucocytes (phagocytes) of the sputum after pulmonary hæmorrhage, other pulmonary affections, and in chronic cardiac disease. (It may also exist as particles or crystals outside of the cells in the sputum.) We find it in leucocytes (phagocytes) from the kidney; also in the renal epithelial cells, and as free amorphous masses in the urine. I observed a case last year in which the renal cells in a case of scarlatinal nephritis were filled with minute masses of amorphous blood pigment arranged in a circle around the nucleus. I also have on record four similar cases in which the pigment contained in the cells was not hæmoglobin, as could be easily demonstrated by the spectromicroscope.

Amorphous hæmatoidin is found not infrequently in the urine, but I have met with a few acute observers who regarded it as a rare form of uric acid. The crystalline form of hæmatoidin occurs more rarely, according to my own observation, based on a very large number of examinations of urine.

Under the microscope hæmatoidin presents a considerable variety in shape, size, and color of its crystals, the latter varying from pale yellow, red, or dirty pink to a deep reddish brown, at times appearing almost black (unless the iris diaphragm is wide open). In regard to shape, they may exist in the form of rhombic tablets or plates, needles—singly, in groups, or in tufts (which may be arranged in a complicated manner)—balls, and clumps, sometimes having needles protruding from their surfaces, and small and large amorphous masses. These constitute the principal varieties. The size varies considerably—roughly speaking, from minute granules to crystals (needlelike form), up to forty micromillimetres in length.

Another form of pigment, very similar to hæmatoidin and which rarely occurs, in infarcts in the renal tubules, and as crystals and masses in the urine, is bilirubin. It is said, in fact, to be isomeric with hæmatoidin. I had the opportunity, while resident physician at the Episcopal Hospital, to observe six cases in which the urine contained crystals of bilirubin. If it had not been for the presence of a large amount of bile in the urine, I am sure that it would have been impossible to distinguish these crystals of bilirubin from crystals of hæmatoidin, as they were identical in crystalline formation. Holm's test, based on the fact that crystals of hæmatoidin turn a transitory blue when treated with nitric acid, and are insoluble in ether and caustic potash, is of no value, in my opinion, for distinguishing these substances, as I have frequently witnessed the blue color around crystals when there was not the slightest doubt that the crystals were bilirubin. My views on this subject are in strict accordance with those of Hoppe-Seyler. Regarding the chemical reactions by which hæmoglobin becomes converted into hæmatoidin, there are many views and but little known regarding it.

The most plausible explanation of the transformation of hæmoglobin to hæmatoidin seems to be that hæmoglobin is changed to hæmatin and methæmoglobin, and finally subjected to further oxidation in contact with the tissues of the body, and converted into hæmatoidin. This view appears to be favored by the spectromicroscopic examination of the urine in the present case of traumatic nephritis. Further speculations are idle. The crystals of sulphate of calcium found in the urine in this case have no clinical significance attached to them.

On November 26th the urine showed the presence of albumose (deutero and hetero), its appearance giving rise to the suspicion of impending suppuration in the kidney. The abumose, however, disappeared on November 30th, and the case progressed to a favorable termination.

The patient's blood was examined by myself on the day following the accident, and no change in the erythrocytes or hæmoglobin was present worthy of mention; there was a moderate leucocytosis present (14,800).

Differential account of one thousand leucocytes: Polymorphonuclear leucocytes, 42.4 per cent.; small lymphocytes, 48.4 per cent.; large lymphocytes, 9.2 per cent.; eosinophiles, none; basophiles, none.

On November 17th I examined his blood again. No changes in erythrocytes or hæmoglobin; there was a moderate leucocytosis present (13,700).

Differential account of one thousand leucocytes: Polymorphonuclear forms, 50.4 per cent.; small lymphocytes, 39.8 per cent.; large lymphocytes, 7 per cent.; eosinophiles, 2.8 per cent.; basophiles, none.

One large lymphocyte and one small lymphocyte seen undergoing caryocinesis; no poikilocytosis of reds.

The blood was prepared by heating, and stained by the Ehrlich-Biondi-Heidenhain method; also with dahlia for basophiles. None of the latter were found. The only point of interest connected with the blood examination was the lymphocytosis, which was due to his debilitated condition. The treatment in the case after shock had disappeared was strychnine sulphate, a fortieth of a grain every four hours, absolute rest in bed, and liquid diet. On November 11th the strychnine sulphate was reduced to a sixtieth of a grain three times a day, and the following urinary analysis which I made will illustrate the progress of the case.

Examinations of Urine.—No. 1, November 8, 1898: Color, red; odor, urinous; clear, no perceptible sediment to naked eye; acid reaction; specific gravity, 1.022; albumin, 6.2 per cent. (by centrifuge); globulin, six per cent. (by centrifuge); albumose negative; dextrose negative; urea, 2.5 per cent.; urobilin and urates normal; bile negative; indican, chlorides, and phosphates normal; nucleo-albumin, a trace (with Almen's tannin reagent); acetone normal.

Microscopic examination shows sediment to consist almost entirely of erythrocytes, leucocytes, and blood casts, a few calcium oxalate crystals, and pale granular casts.

Spectromicroscope gives absorption spectrum of reduced hæmoglobin.

No. 2, November 11, 1898: Color, amber; odor, urinous; clear, no perceptible sediment; acid reaction; specific gravity, 1.018; albumin, marked trace with cold nitric acid; globulin, albumose, and dextrose negative; urea, thirteen grammes in twenty-four hours; urobilin and urates normal; bile negative; indican slightly increased; chlorides normal; phosphates increased; nucleo-albumin, a trace; acetone normal.

Microscopic examination shows erythrocytes and leucocytes in moderate number, broad hyaline and narrow granular casts in fair number and renal epithelium in a state of fatty degeneration. When urine is examined with spectromicroscope in a layer of three cubic centimetres thick a faint band of reduced hæmoglobin is perceptible. None observable when the layer is one cubic centimetre in thickness.

No. 3, November 16, 1898: Color, reddish yellow; odor, urinous; hazy; no perceptible sediment; reaction acid; specific gravity, 1.016; albumin, three and three fourths per cent. (by centrifuge); globulin, albumose, and dextrose negative; urea, 1.8 per cent.; urobilin decreased; urates normal; bile negative; indican slightly increased; chlorides and phosphates normal; nucleo-albumin, a trace; acetone normal.

Microscopic examination shows erythrocytes and leucocytes more abundant. The leucocytes contain and have adhering to them small amorphous masses of hæmatoidin. Also needles and tufts of needles of hæmatoidin present in great quantity inside and outside of the leucocytes. Blood casts in fair number, with hæmatoidin crystals attached to them; renal epithelial cells in a state of fatty degeneration; a few hyaline casts.

The spectromicroscope gives a spectrum of methæmoglobin.

These crystals of blood pigment are soluble to a great extent in ether, insoluble in acetic acid, and give a play of colors with impure nitric acid, showing a marked transitory blue—thus answering the chemical tests for hæmatoidin.

No. 4, November 17, 1898: Color, flesh-red; odor, faintly urinous; very cloudy; no sediment; reaction neutral; specific gravity, 1.017; albumin, four and three fourths per cent.; globulin, a trace; albumose and dextrose negative; urea, 1.9 per cent.; urobilin increased; urates normal; bile negative; indican, chlorides, and phosphates normal; nucleo-albumin, a trace; acetone normal.

.Microscopic examination shows erythrocytes and leucocytes in great abundance. Hæmatoidin crystals as on last examination. Epithelial, pale granular, and hyaline casts in fair number; much renal epithelium in a state of fatty degeneration.

Spectromicroscope shows presence of methæmoglobin.

No. 5, November 19, 1898: Color, reddish yellow; odor, urinous; cloudy; sediment moderate-sized, flocculent; reaction very acid; specific gravity, 1.012; albumin, three per cent. (by centrifuge); globulin, albumose, and dextrose negative; urea, 1.3 per cent., urobilin and urates decreased; bile negative; indican, chlorides, and phosphates normal; nucleo-albumin, a trace; acetone normal.

Microscopic examination shows erythrocytes somewhat decreased in number since last examination; numerous leucocytes and compound granule cells. Many of the erythrocytes have a washed-out appearance and show granules of pigment resembling hæmatoidin, either attached to or in them; a moderate number of blood and hyaline casts present.

The spectromicroscope shows spectrum of methæmoglobin.

No. 6, November 20, 1898: Color, red; odor, slightly fœtid; hazy; sediment moderate-sized, flocculent; reaction acid; specific gravity, 1.012: albumin, one and a quarter per cent. (by centrifuge); globulin, a trace; albumose and dextrose negative; urea, 1.3 per cent.; urobilin and urates decreased; bile negative; indican moderately increased; chlorides and phosphates normal; nucleo-albumin, a trace; acetone normal.

Microscopic examination shows erythrocytes in fair number; numerous hæmatoidin crystals reappear; a few casts of micrococci and renal cells in a state of fatty degeneration.

Spectromicroscopic examination as before.

No tubercle bacilli present.

No. 7, November 21, 1898: Color, amber; odor, slightly fœtid; cloudy; sediment moderate-sized, flocculo-granular; reaction acid; specific gravity, 1.014; albumin, one and a half per cent. (by centrifuge); globulin, albumose, and dextrose negative; urea, 2.2 per cent.; urobilin decreased; urates normal; bile negative; indican, chlorides, and phosphates normal; nucleo-albumin, a faint trace; acetone normal.

Microscopic examination shows leucocytes in large number, hæmatoidin crystals as on last examination; granular *débris* in large amount. Epithelial casts and erythrocytes in moderate numbers; numerous renal epithelial cells in a state of fatty degeneration, many vacuolated.

Spectromicroscope shows spectrum as before, but faint with layer a cubic centimetre thick.

No. 8, November 23, 1898: Color, amber; odor, faintly urinous; hazy; sediment moderate-sized, flocculogranular; reaction acid; specific gravity, 1.018; albumin, one and a quarter per cent. (by centrifuge); globulin, a trace; albumose present; dextrose negative; urea, 2.09 per cent.; urobilin and urates normal; bile negative; indican markedly increased; chlorides and phosphates normal; nucleo-albumin, a marked trace; acetone markedly increased.

Microscopic examination shows leucocytes and renal epithelial cells in great number; the latter in a state of granular and fatty degeneration; a moderate number of leucocytic casts present; no other form of cast. Several large masses of amorphous hæmatoidin and numerous single needles and tufts of needles of same substance as before described.

Spectromicroscope shows spectrum as on last examination.

No. 9, November 24, 1898: Color, slightly pale amber; odor, fœtid; cloudy; sediment moderate-sized, flocculo-granular; reaction amphoteric; specific gravity, 1.024; albumin, one and a half per cent. (by centrifuge); globulin negative; urea, 2.07 per cent.; urobilin increased; urates normal; bile negative; indican markedly increased; chlorides and phosphates normal; nucleo-albumin, a trace; acetone markedly increased.

Microscopic examination shows numerous leucocytes and free fat globules, numerous renal cells in a state of fatty degeneration. (The leucocytes and renal epithelial cells show a marked reaction for fat with perosmic acid.) Numerous hæmatoidin crystals as before described, and calcium sulphate crystals insoluble in ammonium hydrate, also in acetic acid.

Spectromicroscope shows spectrum same as before.

No. 10, November 26, 1898: Color, pale amber; odor, urinous; no sediment; reaction acid; specific gravity, 1.017; albumin, three fourths of one per cent.; urobilin and urates normal; bile negative; indican markedly increased; chlorides and phosphates normal; nucleo-albumin, a trace; acetone normal; albumose, a trace; dextrose negative; urea, 1.9 per cent.

Microscopic examination shows sediment greatly decreased in amount; is composed largely of leucocytes, renal epithelium as before mentioned, and a few needles of hæmatoidin. Spectrum as before.

No. 11, November 27, 1898: Color, slightly pale amber; odor, urinous; hazy; sediment moderate-sized, white, flocculo-granular; reaction acid; specific gravity, 1.019; albumin, one per cent. (by centrifuge); globulin negative; albumose, small trace; dextrose negative; urea, 2.2 per cent.; urobilin and urates normal; bile negative; indican markedly increased; chlorides and phosphates normal; nucleo-albumin, a trace; acetone normal.

Microscopic examination (sediment somewhat scanty) shows numerous crystals of oxalate of calcium; leucocytes greatly reduced in number; a few red blood-corpuscles, hyaline casts, and hæmatoidin crystals; a few masses of amorphous hæmatoidin. Numerous renal epithelial cells in a state of fatty degeneration. A faint spectrum of methæmoglobin.

No. 12, November 28, 1898: Color, slightly pale amber; odor, faintly urinous; sediment moderate-sized, flocculo-granular; reaction acid; specific gravity, 1.020; albumin, one per cent.; globulin negative; albumose, a small trace; dextrose negative; urea, 2.3 per cent.; urobilin and urates normal; bile negative; indican markedly increased; chlorides and phosphates normal; acetone normal.

Microscopic examination shows sediment increased in amount; leucocytes in very large number; many renal epithelial cells are in a state of fatty degeneration and have vacuoles in them; a few leucocytes have rhombic and needlelike crystals adhering to them; a few red corpuscles; hyaline and granular casts in fair number; spectrum as before.

No. 13, November 29, 1898: Color, slightly pale amber; odor, urinous; hazy; sediment large, flocculent; reaction acid; specific gravity, 1.022; albumin, three quarters per cent. (by centrifuge); globulin negative; albumose, a small trace; dextrose negative; urea, 2.56 per cent.; urobilin normal; urates moderately increased; bile negative; indican markedly increased; chlorides and phosphates normal; nucleo-albumin, a trace; acetone normal.

Microscopic examination shows leucocytes as in last examination; a moderate number of renal epithelial cells in a state of fatty degeneration; a few needles and tufts of hæmatoidin; granular *débris* in small amounts. Spectrum faint (methæmoglobin).

No. 14, November 30, 1898; Color, pale amber; odor, urinous; hazy; sediment moderate-sized, flocculent; reaction acid; specific gravity, 1.017; albumin, one fourth per cent.; globulin, albumose, dextrose negative; urea, 17.02 grammes in twenty-four hours; urobilin normal; urates increased; bile negative; indican moderately increased; chlorides and phosphates normal; nucleo-albumin, a trace; acetone normal.

Microscopic examination shows a few hyaline casts, cylindroids, and renal epithelial cells in a state of fatty degeneration; numerous leucocytes; no hæmatoidin crystals; spectromicroscopic examination negative.

No. 15, December 1, 1898: Color, slightly pale amber; odor, urinous; hazy; sediment moderate-sized, white, flocculent; reaction acid; specific gravity, 1.023; albumin, one per cent. (by centrifuge); globulin, albumose, and dextrose negative; urea, 13.60 grammes in twenty-four hours; urobilin and urates normal; bile negative; indican very markedly increased; chlorides normal; phosphates increased; nucleo-albumin, a trace; acetone normal.

Microscopic examination shows a few hyaline casts, leucocytes in great abundance, granular *débris* in slight amount, a few hæmatoidin crystals (needles). With spectromicroscope a faint absorption spectrum of methæmoglobin is seen.

No. 16, December 3, 1898: Color, slightly pale amber; odor, faintly urinous; hazy; sediment moderate, flocculent; reaction acid; specific gravity, 1.027; albumin, one per cent. (by centrifuge); globulin, albumose, and dextrose negative; urea, 18,24 grammes in twenty-four hours; urobilin increased markedly. Urates increased; bile negative; indican markedly increased; chlorides and phosphates normal; nucleo-albumin, a trace; acetone increased.

Microscopic examination shows leucocytes in great abundance; a few granular and hyaline casts; granular *débris* in small amount; a few crystals of uric acid; oxalate of calcium and hæmatoidin (needles); absorption spectrum very faint.

No. 17, December 4, 1898: Color, pale amber; odor, faintly urinous; hazy; sediment abundant, white, flocculent; reaction acid; specific gravity, 1.023; albumin, one half of one per cent. (by centrifuge); globulin, albumose, and dextrose negative; urea, 15.70 grammes in twenty-four hours; urobilin and urates increased; bile negative; indican moderately increased; chlorides and phosphates normal; nucleo-albumin, a trace; acetone normal.

Microscopic examination shows leucocytes present in great abundance; no casts nor erythrocytes; a few needlelike crystals of hæmatoidin still present; spectroscope gives a faint spectrum of methæmoglobin.

No. 18, December 7, 1898: Color, pale amber; odor, faintly urinous; clear, no sediment; acid reaction; specific gravity, 1.026; albumin, a faint trace with delicate reagents, none with HNO_3; globulin, albumose, and dextrose negative; urea, 17.28 grammes in twenty-four hours; urobilin and urates normal; bile negative; indican moderately increased; chlorides and phosphates normal; nucleo-albumin, a trace; acetone normal.

Microscopic examination shows leucocytes in great abundance; moderate number of broad hyaline casts, some of which are partly covered with leucocytes; granular *débris* in moderate amount; no hæmatoidin crystals present; no absorption spectrum with spectromicroscope.

No. 19, December 18, 1898: Color, pale amber; odor, urinous; hazy; no sediment; reaction acid; specific gravity, 1.018; albumin, globulin, albumose, and dextrose negative; urea, 12.09 grammes in twenty-four hours; urobilin slight decreased; urates normal; bile negative; indican, chlorides, and phosphates normal; nucleo-albumin, a faint trace; acetone normal.

Microscopic examination shows a few epithelial casts, oxalate of calcium crystals, and cylindroids; no erythrocytes nor hæmatoidin crystals; sediment very scanty; no absorption bands with the spectromicroscope.

No. 20, December 22, 1898: Color, amber; odor, faintly urinous; clear; sediment none; reaction acid; specific gravity, 1.020; albumin, globulin, albumose, and dextrose negative; urea, 2.5 per cent.; urobilin slightly decreased; urates normal; bile negative; indican and chlorides slightly increased; phosphates normal; nucleo-albumin, a faint trace; acetone normal.

Microscopic examination shows a few crystals of uric acid; no erythrocytes, a few leucocytes; no hæmatoidin crystals; no casts. Spectromicroscopic examination negative.

No. 21, December 23, 1898: Color, amber; odor, urinous; opalescent, no sediment; reaction amphoteric; specific gravity, 1.016; albumin, globulin, albumose, and dextrose negative; urea, 0.8 of one per cent.; urobilin decreased; urates normal; bile negative; chlorides and phosphates normal; nucleo-albumin, a faint trace; acetone normal.

Microscopic examination shows a few leucocytes; no casts, erythrocytes, nor hæmatoidin crystals present.

Spectromicroscopic examination negative.

No. 22, June 13, 1899: Color, amber; odor, normal; clear, no sediment; reaction acid; specific gravity, 1.020; albumin, globulin, albumose, and dextrose negative; urea, 2.3 per cent.; urobilin and urates normal; bile negative; indican, chlorides, phosphates, acetone, and nucleo-albumin normal.

Microscopic examination shows a few leucocytes and squamous epithelial cells; no casts; no erythrocytes. The urine was examined repeatedly for tubercle bacilli with negative results.

Since writing the foregoing I have found crystals closely resembling hæmatoidin in an old solution (decomposed) of carbonic monoxylhæmoglobin, also true hæmatoidin crystals in the lochial discharge and several times in pus.

Pathological Laboratory, 1739 North Sixteenth Street.

ON A GRAVE POSSIBLE ERROR IN SKIAGRAPHY.*

By CARL BECK, M. D.,
NEW YORK.

There is no longer any need to emphasize the great value of the Röntgen rays, particularly in regard to fractures. In fact, while much caution is needed as to interpreting the shadows in soft tissues, the skiagram of a fracture is accepted as an indisputable document even by the most doubting Thomases of surgery.

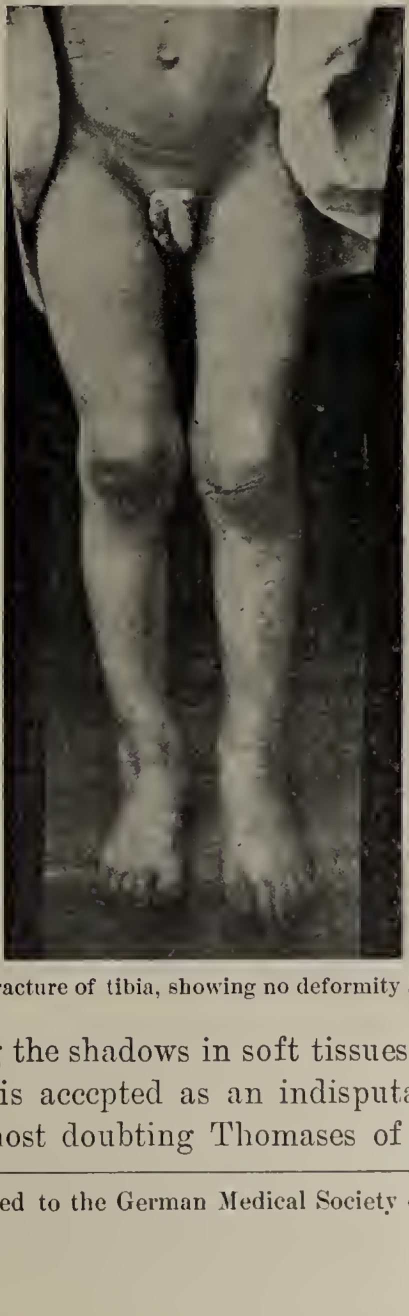

Fig. 1.—Oblique fracture of tibia, showing no deformity and little swelling.

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* Case presented to the German Medical Society of New York City, October 2, 1899.

But even here, in spite of perfect technique and thorough anatomical knowledge, grave errors of diagnosis are by no means excluded. This is made evident by the skiagraph No. 2, which fails to show the evidence of a well-marked oblique fracture of the tibia.

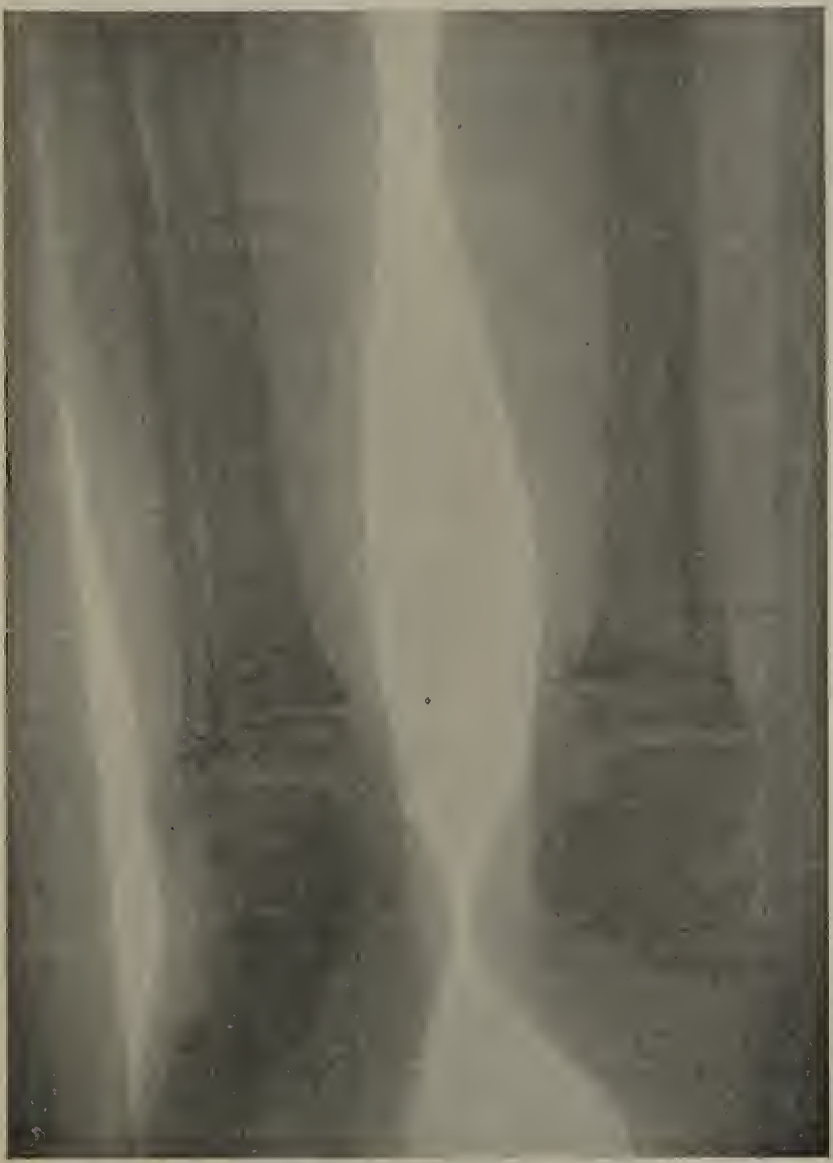

Fig. 2.—Indications of oblique fracture of the left tibia failing to be represented by the Röntgen rays in the dorsal position.

Pasquale Dominico, a boy four years of age, while playing on the street, fell against an iron bar. Being unable to rise again, he was taken up and carried to St. Mark's Hospital, where in the first instance moderate pain was noted besides the functional disturbance in the left leg. There was neither any difference in level nor any other deformity, nor any shortening, nor the typical equinus position. As shown by Fig. 1, from a photograph taken two days after the injury, there was only a very moderate and uniform swelling of the leg. Abnormal mobility and crepitus could be produced only by very rough manipulations.

On the day following the injury two skiagraphs were made in different positions; one of them, Fig. 2, on the dorsal, and the other, Fig. 4, in the lateral position. To my surprise, Fig. 2, from a skiagram made by direct irradiation, the centre of the platinum disc of the tube being perpendicular to the anterior surface of the leg, did not show the slightest indication of a fracture, while Fig. 4, which represents the leg irradiated from the lateral outer aspect of the tibia, showed a marked fracture line.

A third irradiation, made on the fifth day after the injury, Fig. 3, in the same position as in Fig. 2, also showed the presence of a fracture beyond doubt. The patient was discharged cured five weeks after the injury.

The fracture presented the typical oblique type in the middle of the tibia, the fracture line running from below anteriorly to above posteriorly, and the upper tapering fragment overlapping the lower end. No lateral displacement having been present, it will be understood why the rays, reaching the long axis of the tibia in a perpendicular direction, do not show the fracture line. A very slight change in the position, where the inclination toward the fibular direction amounts to less than a millimetre, Fig. 3, brings out the fracture distinctly. If Fig. 3, however, is not studied very carefully, the transparency of the thinnest portion of the fragment might create the erroneous impression that the lower portion overhung the upper one.

Now, if I had, as is usually done, taken a skiagraph in the antero-posterior direction only, and if the manipulations made during the first examination were carried out as gently as they properly should be, the fracture might have been overlooked entirely. And if, in view of the local pain and tenderness, the swelling and the functional disturbance, the possibility of a fracture had been seriously considered, the skiagraph No. 2 might have silenced the uneasy conscience.

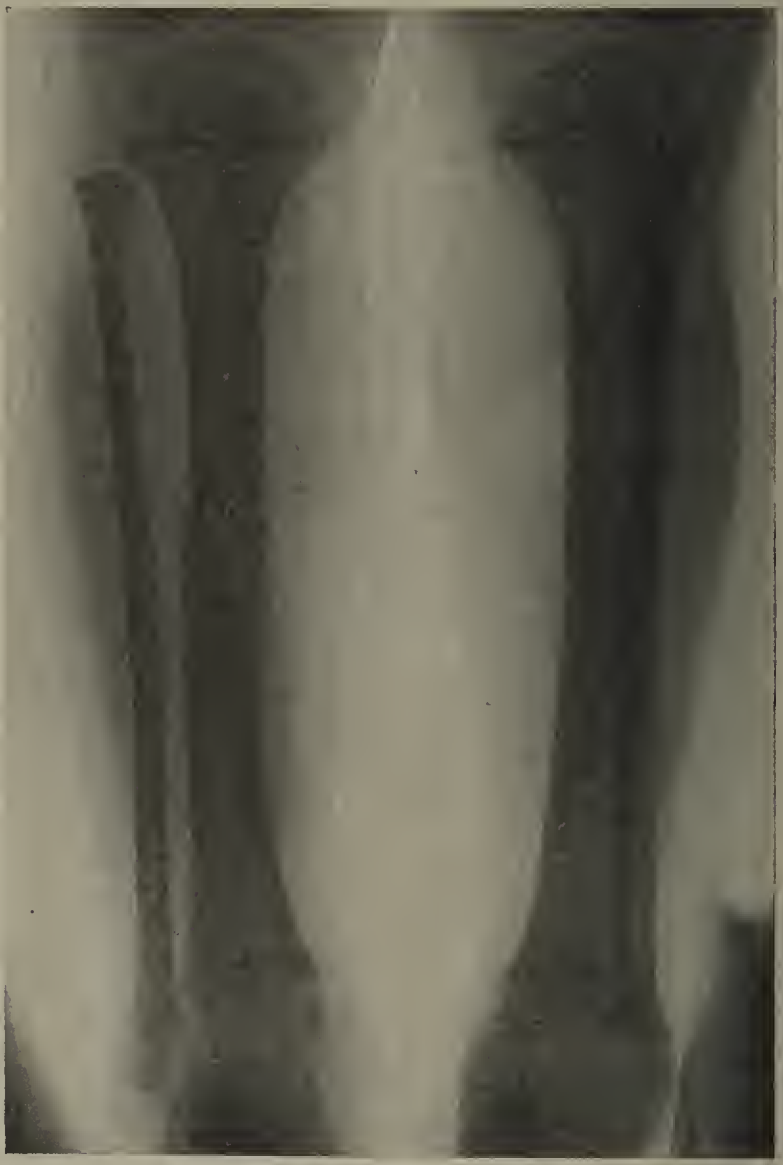

Fig. 3.—Indications of oblique fracture of the left tibia represented by the Röntgen rays in the dorsal position.

This experience teaches the necessity of always taking at least two skiagraphs in two different positions in all cases of suspected fracture. It should be remembered that the Röntgen rays are a most valuable addition to our old diagnostic methods, but they do not replace them. Bearing this in mind, we should neglect no diagnostic testimony, but base our conclusions on *all* the evidence at our command.

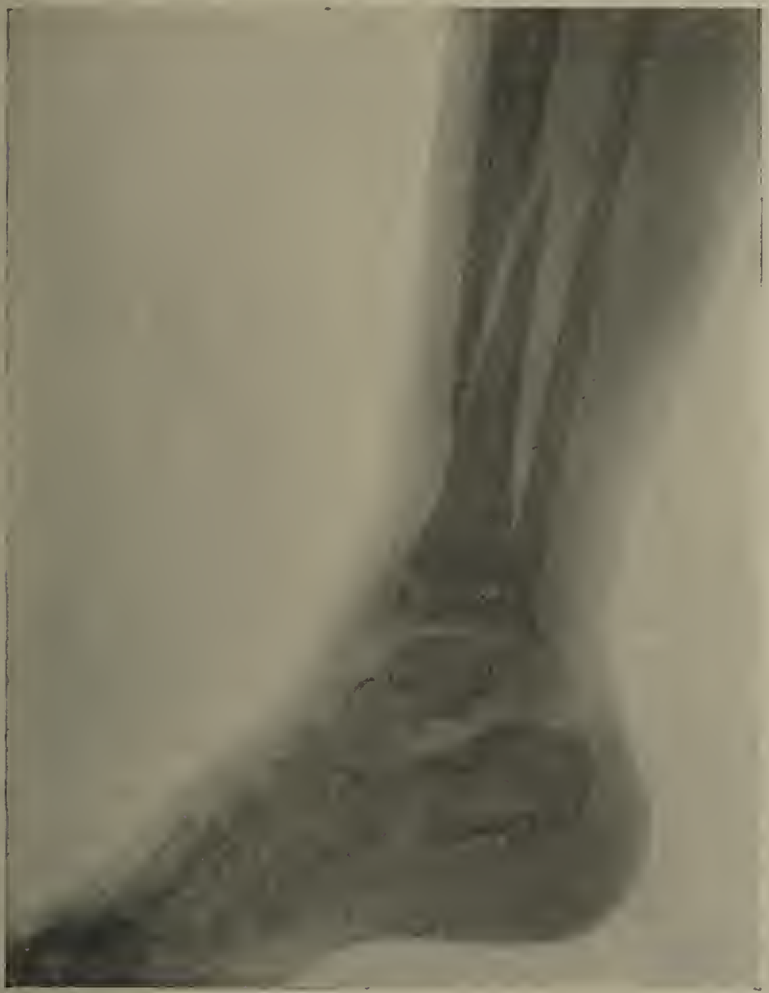

Fig. 4.—Oblique fracture of the left tibia represented by the Röntgen rays in the lateral position.

And if, in interpreting fractures, we have to be so careful, how much more must we guard our imagination when diseases of the bone, foreign bodies, concrements, and last, but not least, obscure pathological changes in the soft tissues are to be considered!

MONSTRUM PER DEFECTUM.*

By ALFRED MOORE, M. D.,

MEMPHIS, TENN.

The following case of human monstrosity came under my personal observation recently and is of sufficient interest to warrant a brief report. Probably more cases would be exhibited if it were not so difficult to get the parents to consent, as few, in private practice especially, are willing to part with their offspring for such a purpose.

History of Case.—The mother of this fœtus is only sixteen years of age. About one year ago I saw her suffering with a vulvo-vaginal abscess. In a few weeks thereafter she was married to a man who was also quite youthful. He gives a history of having had syphilis three years previous.

For six months after marriage the woman had no trouble except that her periods lasted longer and were more painful, which was probably due to a mild endometritis. After that time she ceased to menstruate and had no trouble for the next six months with the exception of nausea, vomiting, and a few chills, until ten days previous to miscarriage, when she had another chill, with continued fever and severe pain and tenderness over the abdomen.

Clinical History.—When I saw her, a week before a miscarriage, she was complaining of intermittent pains over back and abdomen; temperature, 103° F.; pulse, 95; abdomen swollen and tender over the tubes and ovaries, more so over the left. The fundus was two fingers' breadth above the umbilicus, the fœtus lying transversely, the lower extremities to the right, the fœtal heart to the left and below the umbilicus. When the fœtus was compressed between the 'hands it would caused fœtal movements to be so vigorous that the mother objected on account of pain. The examinations were repeated at each visit with the same result. The urine contained a trace of albumin. No vaginal examination was made until just before delivery, when one was made. The cervix was found fully dilated and the lower extremities presenting. It was difficult to palpate the fœtus on account of tenderness in the broad ligaments.

After the membranes ruptured the left foot and funis presented at the vulva and she was thus delivered, the shoulders producing but little obstruction. The placenta was adherent and had to be peeled out with the fingers. A hot creolin douche was administered once only. The temperature did not go higher than 103° F. at any time, and the pulse reached 112 on the second day after delivery. The bowels were then moved and improvement was marked on the third day. On the fourth day another rise of temperature occurred. On the fifth day the temperature was normal, and remained so thereafter. Fluid extract of viburnum was administered before and sulphate of quinine before and after labor.

Inspection of the Fœtus.—The external surface presents the folowing, as will be seen in Figs. 1 and 2: The trunk and limbs of a female fœtus well developed, nails about to edge of the fingers and toes, the shoulders well developed, and the neck absent. The chin and ears are poorly developed and the mouth is open, showing connection between the nasal and buccal cavities, due to deficiency of the superior maxillæ. The bridge of the nose points upward, as the eyes do, which appear very prominent on top.

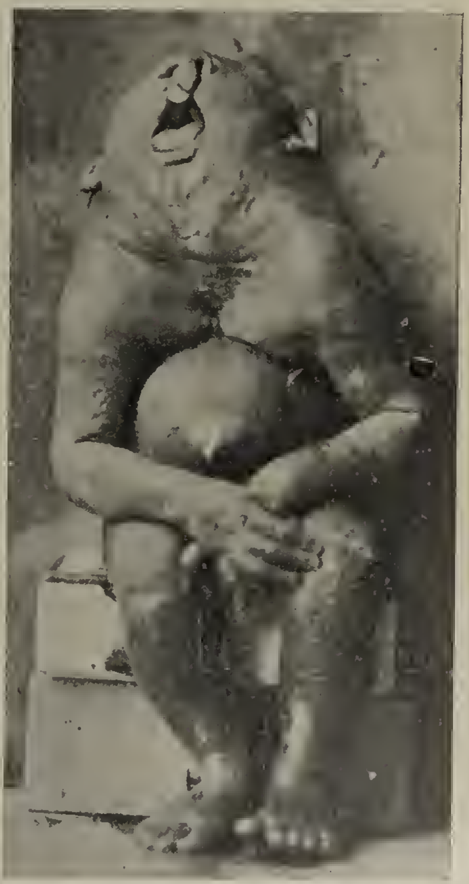

Fig. 1.—Acrania with pseudo-encephalocele.

The cranial bones are absent (acrania), as is the greater portion of the scalp; that remaining is covered with hair, as can be seen in Fig. 2. Projecting through the scalp and hanging down the back two dark-red masses, apparently brain, and covered with its membranes, can be seen also in Fig. 2. The fissure between the vulva and anus has not completely closed. The constriction around the chest is caused by the string which is supporting it.

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* Presented at the Memphis meeting of the Tri-State Medical Association of Mississippi, Arkansas, and Tennessee, November 14, 1899.

Dissection of the Fœtus.—With the assistance of Dr. J. L. Minor, the fœtus was dissected. We found the eyes well developed; the optic nerve passed through the foramen in the sphenoid bone to the base of the brain tumor. Brain imperfectly developed, composed mostly of a vascular mass (pseudo-encephalocele) and covered by a vascular membrane. This mass rested on the imperfectly developed cranial floor and back, and very little of it was covered with scalp.

The thoracic and abdominal cavities were divided by the diaphragm. The abdominal cavity contained the liver, which almost filled the cavity, the kidneys, the vermiform appendix, the bladder, the internal genital organs, the large intestine, and a portion of the small intestines.

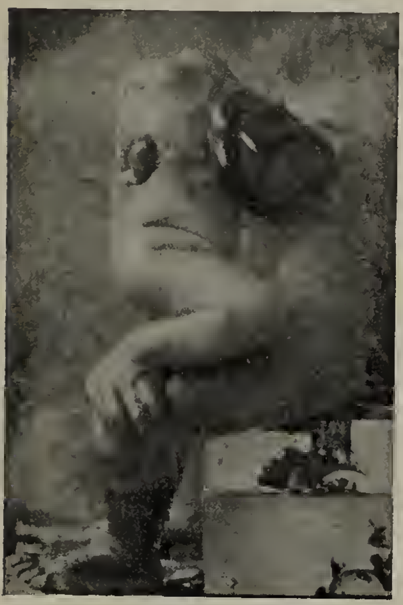
Fig. 2.—Acrania with pseudo-encephalocele.

The thoracic cavity contained the heart, the lungs, the spleen, the stomach, and the greater portion of the small intestines.

These abdominal viscera occupied a cavity behind and between the lungs and the chest wall behind, the diaphragm below. The intestines extended upward, and a knuckle passed through the foramen magnum beneath the pseudo-encephalocele and back to the stomach, which was a dilated pouch continuous with the pharynx.

The spinal cord and vertebræ were present.

This is a case having many anomalies, and shows the ill effect of arrest and retardation of development upon the embryo; also that hernia of the abdominal viscera may protrude through almost any cavity.

Randolph Building.

REPORT OF
A FEW CASES OF CHRONIC EMPYEMA OF THE ANTRUM OF HIGHMORE;
OPERATION BY THE CALDWELL-LUC METHOD.*

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At two successive annual meetings—in 1897 and 1898—of the Société française d'otologie, de laryngologie et de rhinologie, my friend, Dr. H. Luc, of Paris, one of our corresponding fellows, with much merit, established the great value of what he considered a new operation for the rapid and radical cure of chronic empyema of the maxillary antrum. His excellent results embodied in a statistical report of twenty cases, all of which were successful but one, have been the subject of much commendation at the hands of his fellow-members of the society, who, following his steps, have obtained equally good results.

Under these circumstances it seems to me somewhat surprising that this procedure has not obtained more general recognition among our American specialists. This is the more astonishing that, after all, the honor of having first described and advocated this operation belongs to one of our countrymen, Dr. George W. Caldwell, of New York. Without discussing this question of priority, which has been settled by the frank and honest declaration of our French *confrère,* our thanks, on the contrary, are due him for having brought to light and repeatedly performed an operation which, pregnant with brilliant achievements, had fallen into comparative oblivion. When his paper first appeared, imbued with the desiderata of older procedures in many cases, I immediately suggested to my partner, Dr. Gordon King, who was then abroad, the propriety of studying this new operation in view of testing its merits in our clinic of the Eye, Ear, Nose, and Throat Hospital upon his return. Through the courtesy of my friends—Dr. Luc, Dr. Lermoyez, and Dr. Moure—he was invited to witness a number of operations with all facilities to familiarize himself with its technique. Five cases have been so far operated on by him under my direction with most encouraging results, as can be judged from the following observations:

Case I.—Josephine L., twenty years of age, a native of France, presented herself at the clinic of the Eye, Ear, Nose, and Throat Hospital in the month of August, 1898, suffering with a copious purulent discharge from the right nostril, which, according to her story, began about three years before. She had been a sufferer from toothache when a few years younger, and had had a carious bicuspid and the first molar of the upper jaw of the right side extracted, which gave her subsequent relief. Examination at the time of her first visit to the clinic revealed the presence of a small polypus in the right nasal fossa bathed in a quantity of creamy pus which came from the region of the middle meatus. The discharge had set up an eczematous condition of the vestibule of the nose. Transillumination of the bones of the face by means of Heryng's lamp showed quite a marked opacity on the right side, with a diminished perception of light and an absence of the retinal reflection in the eye of the corresponding side. Exploration of the antrum with a cannula introduced through the ostium maxillare gave positive proof of an empyema of the cavity. The case was then subjected to Cooper's method of treatment, the site of the first molar tooth being selected as the point for making the drill opening through the alveolus. A rigorous treatment was then instituted of irrigating the cavity daily with solutions of peroxide of hydrogen and boric acid, and this treatment was kept up with care and conscientious regularity during an entire year that followed, during which time the drill opening had to be reenlarged three times. At the end of this time the antrum was still suppurating vigorously, and it was deemed necessary to undertake a more radical measure to effect a cure; accordingly, on the 13th of August last year the patient entered the hospital and the Caldwell-Luc operation was performed, the alveolar opening having been first allowed to close, so that all communication with the oral cavity was cut off.

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The technique of the operation was carried out as follows: The patient having been chloroformed, the inferior turbinate body of the affected side was attacked with a cutting forceps and its anterior third removed, after which the nasal fossa was firmly packed with gauze and attention turned to the opening of the antral cavity through the canine fossa. The upper lip being everted and well retracted by an assistant, the incision was made through the soft parts, beginning just below the gingivolabial fold near the frenum anteriorly and extending posteriorly in a horizontal direction back to the root of the first molar tooth. The periosteum was included in the incision and both flaps were detached from the bone and retracted so that the bony anterior wall was laid bare. A chisel was then used to make an opening into the cavity at the deepest point in the canine fossa, and by means of bone forceps this opening was enlarged so that the finger could be readily introduced and extended anteriorly almost to the nasal process of the maxilla. This gave free access to the cavity for the introduction of instruments and inspection with the eye and finger. The antrum was found to be lined within by a thick growth of polypoid tissue that almost obliterated its cavity. Quite a free hæmorrhage occurred at the stage where the antrum was opened and this tissue attacked with a curette; but firm pressure by means of a gauze pack quickly checked the flow, and the scraping was systematically continued until the cavity had been deprived of all its interior lining and nothing remained except the bare bony walls. This done, a temporary gauze pack was introduced into the cavity and the drainage way into the nose established as follows: The pack removed from the nose, a finger was introduced and placed upon that part of the antral wall corresponding to the resected part of the turbinate. With this as a guide, a chisel was placed upon the corresponding point on the side of the cavity and used to break away a part of the bony wall, the opening being made sufficiently large to permit of the free passage of the finger. Any remaining shreds of mucous membrane left on the nasal side were cut away with a biting forceps, so that the artificial hiatus thus made would be in nowise obstructed.

It only remained now to suture over the wound made in the canine fossa and cut off all communication from the mouth. With the lips well retracted and a properly curved strong needle employed no very great difficulty was experienced in carrying out this step of the procedure. Rather fine catgut was employed in interrupted suture, the mucous membrane and the periosteum being caught up together and brought into firm apposition over the breach in the bony wall. Before the cavity was finally closed, however, the gauze packing was removed, iodoform powder insufflated, and a fresh strip introduced through the nose, so as to avoid any difficulty in its removal at the first dressing a few days later.

On the following day there was considerable swelling of that side of the face, the patient complaining of some pain and of severe tenderness on pressure over the cheek; the temperature, however, did not rise above 100° F. Low diet was ordered and an ice-bag applied to the face, and she was given a boric-acid mouth wash to be used every three or four hours. The dressing was renewed on the fifth day and the cavity irrigated with warm boric solution. The buccal wound had healed by first intention. The patient remained in the hospital twelve days, at the end of which time she was allowed to go out and resume her usual vocations, being instructed to return to the morning clinics for further treatment. At the end of a few days the gauze dressings were discontinued and the patient was taught to introduce a cannula through the nasal opening and wash out the cavity twice daily. This she did conscientiously, and at the end of six weeks all discharge had ceased, the injected solutions coming out clear, and the empyema was pronounced cured.

As an incident, however, of much importance in this case, I must add the following notes relating to a subsequent affection for which this patient had to be treated, and which in all probability was a sequel of the surgical interference: About two months after the radical operation on the antrum, when that had been pronounced well and was no longer treated, the patient came to the clinic complaining of a neuralgic pain over the region of the infra-orbital canal. Some slight swelling could be noticed at that point, and there was considerable tenderness on pressure over the part. Medicinal treatment afforded no permanent relief and the pains grew more severe and constant. These pains were not associated with any muscular twitchings of the face, nor was there any return of the antral discharge. After a careful study of the case it was decided that the pain was due to a neuritis of the infra-orbital branch of the trigeminal nerve, and that probably in the course of the operation the nerve had been exposed within the antral cavity or had been injured at its point of exit from the canal by the elevation of the periosteum, and that the formation of cicatricial tissue at one of these points had given rise to some pressure upon the nerve. Surgical interference was decided upon, and on February 21st infra-orbital neurectomy was performed by Dr. F. W. Parham, of the consulting staff. The infra-orbital canal was exposed along the orbital floor and an inch or more of the nerve excised. There was apparently no cicatricial tissue present or any evidence of inflammation of the surrounding tissues. Primary union took place and the patient was relieved of the pains. During the course of the operation, however, the antral cavity was broken into, and this set up a sero-purulent discharge which lasted a few days. Seen lately, the patient showed some evidence of a return of the neuralgic pains and of some neuralgic involvement of the supra-orbital nerve.

Case II.—J. H. W., a mechanical engineer by occupation, twenty-nine years of age, married. The antrum trouble dated back to the year 1881, a year after a serious attack of nasal diphtheria, evidence of which could still be seen in the nose in the form of membranous synechia between the inferior turbinate and the septum. At that time the patient suffered with an abscess at the root of the canine tooth on the right side, which gave rise to a fistula through which a small probe could be introduced into the antrum and which gave exit to a discharge of sero-pus. The first molar of the same side was also carious, and this was removed to admit of a larger drill opening being made into the antrum in this situation, which, when done, was followed by a very free flow of pus from the cavity. From that time until a year and a half ago, when patient came to be examined at the Eye, Ear, Nose, and Throat Hospital, he had made use continually of a cannula and syringe for washing out the antrum, and still the discharge was as free as ever. He had become a sufferer from dyspepsia, and had what were apparently occasional attacks of gastric vertigo.

The radical operation was performed October 19, 1898. The drill opening through the alveolus, which was then very small, was allowed to close, and when the antrum was opened there was found an unusually large quantity of offensive-smelling pus and thickened polypoid membrane. The patient remained eight days in the ward and suffered no great amount of inconvenience from the operation, and on the third day was up and about the ward.

The buccal incision failed to unite completely, owing to the use of defective catgut sutures, and for ten days following the operation it was noticed that when the cavity was irrigated through the nasal opening there was an escape of water through the anterior part of the wound. This, however, soon closed without any deleterious effects following, and the patient was allowed to go and resume the injections as before, this time through the nose. The discharge gradually diminished and at the end of about six weeks had ceased.

On March 8th he was examined again, and found to be much improved in general health and with no recurrence of the antral discharge.

CASE III.—Sylvia F., a white girl, aged eighteen years, resident of Plaquemines Parish, Louisiana, came into the clinic of the Eye, Ear, Nose, and Throat Hospital on November 5th of last year complaining of the return of symptoms of nasal polypi, for which she had been treated at the hospital about four years previously. In addition to this she called attention to a constant purulent discharge from the left nostril associated with headaches of a neuralgic character referred to the frontal region. Rhinoscopic examination revealed the presence of a mass of small polypi in the left fossa occupying the middle and superior meati, from which oozed a characteristic yellowish creamy pus. The use of Heryng's lamp showed marked opacity on the left side over the region of the maxillary antrum and beneath the orbital floor. The retinal illumination was absent on that side and the perception of light bad. Transillumination of the frontal sinuses was negative. A second examination by means of a probe revealed the presence of necrosis of some of the ethmoidal cells and of the lateral wall of the nasal fossa in the middle meatus, so that a cannula could be easily introduced into the antrum through what appeared to be an enlarged ostium maxillare. When it was washed out by this means a quantity of thick, ill-smelling pus was evacuated. At her next visit to the clinic, two days later, the polypi, together with the diseased turbinate, were removed and the ethmoidal cells curetted out as thoroughly as was permitted. Irrigation of the antrum with antiseptic solutions was continued untiringly with no marked effect upon the discharge until December 1st, when the radical operation was performed. The mucous lining of the cavity was found to be in an advanced stage of myxomatous degeneration. The nasal wall in the region of the middle meatus was thin and necrosed so that with little force the finger could be carried through into the nasal fossa. Considerable hæmorrhage attended the curetting of the cavity and the removal of the turbinate, but this was easily controlled by packing with gauze. The operation was completed and the dressing applied as in the previous cases. On the next day after the operation the face was quite swollen and painful to the touch, and on the third day the patient was so uncomfortable that the packing was removed and the antrum irrigated, after which there was a rapid subsidence of the inflammatory symptoms. At the end of a week the patient was permitted to leave the ward, to be subsequently treated at the morning clinics. Firm union of the buccal wound had taken place, and a week later further dressing with gauze was suspended and the patient given a cannula and syringe and taught to wash the antrum herself. She went then to spend the Christmas holidays at home, and was given instructions to irrigate the cavity twice daily with Seiler's solution.

At the end of three weeks' time she reported at the clinic. The discharge from the antrum was very slight, but some pus could still be seen in the ethmoidal region, leaving the impression that some of it found its way into the sinus through the natural opening, considerably enlarged, as has been mentioned, by a necrotic process. This part was again curetted, and the patient departed. Before she left, however, the frontal sinus was again examined by transillumination which gave a relative opacity on the affected side, leaving a suspicion of some implication of this cavity. The solution of this obscure point of diagnosis was left for the next visit, but, unfortunately, the patient failed to return.

CASE IV.—William H., a negro laborer, twenty-eight years of age, came to consult at the Eye, Ear, Nose, and Throat Hospital in April, 1898, for a purulent discharge from his left nostril of a year's duration. In November of the preceding year he had suffered with a carious tooth, the second upper bicuspid of the left side, which he had had extracted by a dentist. With the discharge he complained of some obstruction and odor in that side of the nose and a sensation of liquid in the cheek bone when he stooped or turned his head far to one side. Pus in the middle meatus of that side and a well-marked opacity of the bone upon the application of Heryng's lamp confirmed the diagnosis of maxillary empyema. The frontal sinuses and ethmoidal cells were apparently healthy. A test treatment was instituted of irrigating the cavity through the natural hiatus, but this proved inefficient, and it was found necessary to remove the first molar tooth and make a drill opening through the alveolus in this situation. The sinus was curetted as well as could be done through this small aperture and packed with gauze. Notwithstanding the most careful and systematic post-operative treatment with antiseptic solutions the discharge of pus continued. In February of this year it was decided to attempt the radical cure by the Caldwell-Luc method. At that time there still remained a small fistula in the alveolus through which the patient had faithfully washed the cavity every day with no favorable result. He entered the hospital and the operation was performed by Dr. King. Hæmorrhage was freer than usual and retarded the operation somewhat, while on the other hand the large mouth of the patient facilitated the suturing of the wound. The antral cavity was found to contain the same polypoid masses as were observed in the other cases, which revealed the cause of the persistent suppuration. Secondary reaction was very slight, the temperature not exceeding 99°, and swelling of the face was scarcely perceptible. At the first dressing, on the fourth day, the buccal wound was found united. The patient was allowed to leave the hospital, being seen on alternate days for a week longer and the dressings renewed at each visit. Daily irrigations were then begun by the patient himself, and in four weeks from the date of operation all discharge had practically ceased. He was seen again in April, and no discharge could be detected, the nose being free of secretion and the large opening into the antrum plainly in view.

Case V.—Mrs. B., aged forty years, a widow with two children, came to consult me on the 6th of last March, after having been treated elsewhere for nearly two years for supposed nasal catarrh. She was very anæmic and in a very poor state of general health. The local trouble began with severe attacks of toothache in the first upper molar of the left side, which, though apparently sound, continued to ache until extracted by a dentist. Four or five days after there began a bloody, serous discharge from the left nostril, soon becoming purulent in character. It had continued without cessation, and at times was excessive in quantity and of offensive odor. The discharge usually fell back into the nasopharynx and was expelled, but if the head was held low at times the pus would drip from the nostril.

Nothing abnormal could be found on inspection of the nasal fossa, nor was any pus ever to be seen in the region of the middle meatus. Heryng's lamp gave positive evidence of maxillary empyema, and when a catheter attached to a syringe was introduced through the ostium maxillare a large quantity of fœtid pus was washed out. The subjective symptoms of the case were insignificant. The diagnosis once established, a tentative treatment was decided upon of irrigation of the cavity through the natural opening, and this was done three times a week with scrupulous care for a month, after which time it was found that the discharge still continued with no apparent diminution in quantity or change in character; consequently, on April 5th, the radical operation was performed at the New Orleans Sanitarium. Very little hæmorrhage attended the operation. The only divergence from the usual technique employed was that the turbinotomy was not performed until the last, when the sinus had been curetted out and was ready to be closed; then the anterior portion of the turbinate was removed and the artificial drainage opening established. This was done to avoid the annoyance of hæmorrhage in the early stage of the operation.

The diseased lining membrane of the cavity gave way very readily under the curette and was easily removed. The after-treatment of the case consisted in light stimulating diet and the use of a borated mouth wash every three hours. Reaction was slight, the temperature not exceeding 99.6° until the fifth day, when there was a temporary rise to 101.4°. The dressing was removed on the fourth day. The buccal incision was well united. She left the sanitarium on the ninth day after the operation and was thereafter seen every three days and the dressings changed. Soon, however, she learned how to introduce the cannula herself, and was permitted to carry on the lavage treatment at home, reporting twice a week for examination. On May 4th, a month after the operation, no more discharge was present and the patient considered herself as well. There existed, however, some tenderness of the lateral incisor and canine teeth on the side operated on, which rendered mastication a little painful. A more recent examination shows this symptom to be rapidly disappearing. Heryng's lamp still shows opacity of that side.

The technique of this operation has been sufficiently brought out in my first observation not to need any general description. I will limit myself, therefore, to the consideration of a few practical points which have mostly engrossed my attention in the study of these cases as compared with others.

First. In making the buccal incision the aim has always been to obtain an inferior muco-periosteal flap of sufficient width to permit later on of easy suturing, in view of obtaining union by first intention. It is evident that in the minds of Dr. Caldwell and Dr. Luc one of the main ideas in advocating this new operation was to cut off in the final procedure all communication between mouth and antrum, and thus avoid all possible secondary infection of the sinus through the introduction into that cavity of germs from the mouth. This preoccupation should certainly be foremost in the mind of the surgeon.

I was so imbued myself at first with this thought that in Cases I and II the radical operation was not undertaken until all fistulous alveolar communication with the antrum had been allowed to heal. In Case II I experienced some disappointment when an incomplete union of the buccal incision was found to exist, leaving a communication between the two cavities which gave passage to antiseptic solutions injected through the nose into the antrum. This little accident had apparently so little influence on the cicatrizing process of the antrum that, emboldened by the fact and pressed by time, I did not hesitate in Case IV to allow the radical intervention to be undertaken regardless of a communication existing through an alveolar opening. There was again no bad result therefrom. Similar communications existed in Cases II, IV, and XX of Luc's report, which seemed to be of no consequence in the healing of the antrum. I therefore think that the danger of secondary infection from the mouth is little to be feared. There can be no comparison between these small apertures and the large gaps in Desault's operation, in which the cicatrization of the antrum is more interfered with by the penetration of food into this cavity than by ordinary buccal secretion, the former acting as an irritant like a foreign body.

It has been found advisable to bring the incision nearer the frenum than advocated at first, this with a view of modifying the usually round bony opening made in the canine fossa. This resection should be in preference slightly ovoid to bring one of its extremities closer to the nasal wall of the antrum and the other nearer the tuberosity. This shape facilitates a more thorough curetting of parts of the cavity in directions which might otherwise escape the instrument. It will also be of considerable help in establishing the artificial hiatus through the nasal wall.

The operative treatment of the cavity consists, it is needless to say, in a thorough curetting of the mucosa and removal of all diseased tissue. There lies our sheet anchor for the radical cure of the obstinate forms; lesions of the bony walls, unsuspected abnormal prolongations of the antrum, inflamed diverticula, pouches, or even almost separate compartments, must be remembered in connection with the retention of inflammatory products and thick exudations, and treated accordingly. In cases uncomplicated with frontal or ethmoidal suppuration, the failure of the operation is oftener the result, I dare say, of an oversight and of an incomplete destruction of the degenerated mucosa than of a secondary infection. Our attention must be turned next to the nasal fossa, where a partial turbinectomy of the anterior extremity of the inferior turbinate is rapidly performed with biting forceps. This procedure has been opposed by Dr. Luc on account of the fear of abundant hæmorrhages, not to mention its uselessness. The execution of this partial resection has struck me, on the contrary, as being advisable, and even necessary if we believe in a large opening for post-operative treatment; the hæmorrhage, it is true, may be at times a little annoying; for this reason, I think it preferable to postpone that partial resection to the latter part of the operation.

As to the creation of an artificial opening into the nose, which should come next, I will unhesitatingly pronounce in favor of a very large one, which will render continuous the floor of the antrum and of the corresponding nasal fossa. It should be made as near as possible to the angle formed by the junction of the anterior wall with the floor of the antrum, and the bone attacked in preference from within the cavity. A finger introduced into the nose will generally be found useful at this step, not only as a landmark and guide for the hand gouge which is breaking down from the other side the bony partition, but also as a possible means of compressing in case of oozing from the resected extremity of the turbinate; later, it can assist in trimming closely the edges of the new opening by shoving through it and bringing into sight shreds or flaps of mucous membrane which can be easily removed with biting forceps. The artificial opening made by Dr. Luc and others in their first operations was simply calculated to give passage to a drainage tube, after removal of which there was such a marked tendency to closure that in several instances the surgeon himself had some difficulty in finding the opening, which had to be reestablished. This undesirable occurrence is plainly shown in Case VI of Dr. Luc's statistics, in which, on the sixteenth day after the operation, he had to reenlarge the opening with the galvanocautery, this intervention giving rise to a submucous abscess which opened a few days later into the antrum. Such drawbacks, with the substitution of gauze dressing for the tube, explain sufficiently the reason why in his twentieth case Luc does not hesitate to emphasize the value of a very large artificial hiatus, which we have uniformly adopted in our cases. Another practical advantage consists in the fact that, the surgeon having once discarded the gauze dressing, the handling of the case can, under certain circumstances, be safely intrusted to the patient himself, who can without further pain or difficulty syringe the cavity.

With this operation all my patients have been radically cured in from four to six weeks, as evidenced by a complete cessation of all suppuration. I must, however, point out that in none could the diseased antrum be transilluminated, owing probably to the comparatively short time since the cure, which does not exceed seven months in any one. I must admit, however, that, even if all my cases were of the chronic type, with extensive and advanced degenerative changes of the mucosa, three of them having been vainly subjected to Cooper's method of treatment, they were not, with one exception, complicated with suppuration of the other cavities, such as the frontal sinus or the ethmoidal cells; a more obstinate form, in fact, almost a morbid entity, which is designated by some as fronto-maxillary empyema. Of course, such cases must demand more time and offer greater difficulties for a radical cure, owing to the multiplicity of the foci of suppuration and to the possible reinfection of one focus by another if they are not all eradicated. Many operators have made use of an application of a twenty-per-cent. solution of chloride of zinc to the antral cavity after curetting. I have dispensed with that procedure as an unnecessary precaution.

In the report of my first case, I have purposely made mention of the development of an unfortunate and obstinate form of neuralgia which leads to an interesting question, Was this neuralgia a mere coincidence, or was it caused by traumatism incidental to the operation? This last interpretation should imply a timely warning to the operator. In connection with this case I can not but also call your attention to the fact that at the time of the exploratory operation, ending in neurectomy, the cavity of the antrum was opened, and through that accidental opening blood and a subsequent sero-purulent discharge drained for several days into the cavity without any indication of reinfection.

In conclusion, let me repeat an opinion expressed in a joint paper written more than a year ago by Dr. King and myself: "We are convinced that a more general application of the Caldwell-Luc method will prove it to be a most valuable operation in the treatment and cure of cases, which too frequently have been the opprobrium of rhinology."

Since my last operation, on April 5th of this year, I have received a letter from our esteemed fellow-member, Dr. H. Luc, bearing partly on this subject. To my inquiry as to whether he had anything new to communicate to me in view of this report, he writes the following: "The number of maxillary empyemas operated on by me by my new method amounts now to thirty-three. All free from ethmoidal complications made a complete and quick recovery, with the exception of one, in which the relapse may be accounted for by the existence of an ozæna and reinfection of the sinus by the nose. The chief improvements I have brought to the method lately consist in the considerable dimensions given to the artificial hiatus, including nearly the third inferior anterior part of the internal wall of the antrum and connected with the resection of the corresponding part of the inferior turbinated bone, and also of the substitution of a single strip of iodoform gauze for the drain. I applied quite lately this same operation to cases of empyema of the antrum complicated with subperiosteal premaxillary abscess, and obtained a splendid result, draining both abscesses by the nose and thus avoiding the production of a fistula of the cheek which was imminent. This is the subject of my intended communication to our congress next May."

THE THERAPEUTICAL APPLICATION OF CARBONIC-ACID GAS.*

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The application of carbonic-acid gas externally for therapeutical purposes can be traced to the earliest times. We all have read of the stone of Memphis, which stone was pulverized, dissolved in vinegar, and applied to parts of the body in order to anæsthetize them. Dioscorides and Plinius speak of this stone. Paracelsus employed carbonic acid, which he called spiritus sylvestris. Robert Boyle in the seventeenth century discovered the antiseptic powers of the gas, which, however, as we know now, are rather limited. During the eighteenth century English physicians made extensive use of it and published numerous observations and experiences. Noteworthy are the writings of Percival, Priestley, Dobson, and Ingenhouse. The methods of generating and applying the gas externally were rather primitive ones. The part of the body to be acted upon was brought over the opening of a vessel in which the carbonic acid was developed. Sometimes a bladder was filled with gas, and from this bladder the gas was applied to the affected part. Altogether the application was confined to a small circumscribed surface at a time.

Percival praises the effect on scorbutic ulcerations. Especially interesting for us is the fact that he successfully treated ozæna by the local application of carbonic-acid gas. The gas was brought in contact with the nasal cavities through tubes. He speaks of this remedy as the best means of curing the offensive odor of ozæna. The gas has been recommended in the treatment of ozæna by many writers since Percival, but in the recent literature of our specialists on diseases of the nose it is not even mentioned. It stands to reason that there exist cases of complete atrophy of the Schneiderian membrane in which we may not expect much benefit from any treatment, not even from applications of carbonic-acid gas, but nevertheless this gas may prove to be a remedy of the first order, perhaps the best in atrophic rhinitis, even at the present date.

Carbonic-acid gas applied to mucous membranes brings on a hyperæmic condition. This can be readily observed on examining the gums and mouth after their treatment with the gas. According to Binz, it was very manifest in the gastric mucous membrane of a dog with a fistula, and was all the more striking in his case, for the dog, having been bled, the gastric mucous membrane was previously paler than normal. The same observation was made by Dr. W. Freudenthal in cases of rhinitis atrophicans. Demarquay writes: "The gas douches modify and promptly cure the morbid discharges of the Schneiderian membrane." He says further: "When the pathological condition is caused by disease of the bone the treatment is to be continued for a greater length of time, but it will always succeed, except when the disease is syphilis or cancer. Under the influence of the douches the secretion of the Schneiderian membrane diminishes and fœtid odor disappears."

On the other hand, the effect of the carbonic-acid gas on the Schneiderian membrane while in a hyperæmic condition is perhaps still more striking. From my own experience I can add that I have invariably seen most gratifying results from this treatment in acute rhinitis. The action at first is similar to that of cocaine in so far as it gives immediate relief, but the relief brought on by carbonic-acid gas is more lasting. I have applied it in acute rhinitis in the case of children, and even in infants, and can only say that it appears to me to surpass all other remedies—that it is, in fact, the ideal one.

Demarquay says: "Patients who have congenital absence of smell can expect no benefit from the use of the douches, but in case the anosmia is the result of disease of the fossæ nasales, the topical douches, by stimulating the mucosa and increasing its irritability, may reestablish the physiological condition.

Percival applied carbonic-acid gas in cancerous ulcerations. His exalted hopes in this direction were not realized, but he succeeded in modifying the secretion, removing the offensive odor, and relieving pain in carcinomatous ulcers. He himself was suffering from a painful ulcer at the point of the tongue and found relief from application of the gas after all other remedies had failed.

White, another English physician of the eighteenth century, the author of a book on midwifery, recommends topical application of the gas in croup, as also did Henry, Dobson, Percival, Warren, Lee, Rotheram, and other physicians of the same period. Dobson made use of the gas douche successfully in phagedænic ulcers. The same physician praises its good effect in variola. He placed children suffering from this disease naked over an effervescing mixture of tartaric acid and bicarbonate of sodium, or he directed the gas douche upon the different regions of the body.

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While the external application of carbonic acid for therapeutical purposes was so extensively in use in England, French physicians likewise directed their attention to this remedy, but they were less enthusiastic. This is to be explained by the fact that they had hoped too much; they had expected it would cure cancer. In 1777 Champeaux, a surgeon of Lyons, gained the prize of the Academy of Surgeons of Paris for an essay in which he treated of the external application of carbonic-acid gas in different forms of ulcer. There appeared other publications on this subject in France at that time—one by Rozier, in 1776, another by De Lalouette, in 1778. In the first decades of the nineteenth century carbonic-acid inhalations of a specific degree were a well-known and extensively employed therapeutic measure. From the observation that the fumes of freshly plowed earth did, or at least seemed to do, good service to consumptives, the conclusion was arrived at that the carbonic acid of these fumes was the essential agent. The reports on the curative effect of this method of treatment lead to the inference that the relief obtained was due to the narcotic action of the gas.

In 1834, Mojon, of Genoa, published his experiences with the gas in gynæcological practice.

During the fifth decade of the nineteenth century Verneuil, Broca, and Demarquay, in France, with Simpson in Scotland, made extensive use of carbonic acid in gynæcological and surgical practice.

Brown-Séquard demonstrated the anæsthetizing effect of the gas on the larynx.

For some time the gas was discredited in consequence of an event which took place in Scanzoni's clinic. A pregnant woman had received vaginal douches of carbonic acid and died. Scanzoni attributed her death to the entrance of carbonic acid into the uterine cavity. The experiments of Claude Bernard and other French investigators brought conclusive evidence that Scanzoni was in error in attributing the cause of death in this case to the gas. Breslau and Vogel published in 1858 in the *Wiener medicinische Wochenschrift* a number of important experiments which they had made on pregnant rabbits. They inflated the vagina with carbonic-acid gas without producing thereby any toxic effect; no harm was done to the life of either rabbit or fœtus. These investigators came to the conclusion that vaginal douches of the gas were entirely harmless in case of pregnancy and that they endangered neither the life of the mother nor the life of the child. My own experience furnishes additional evidence.

Dirüf, whose remarks are given in Demarquay's book *Essai de pneumatologie médicale*, Paris, 1866, as not having been published previously, says: "The baths of carbonic-acid gas which are given at different watering places in Germany are known to have a very great effect in the treatment of such affections of the locomotor apparatus and the nervous system as resist ordinary therapeutic measures. Chronic rheumatism and gout, before the establishment of permanent anatomical changes, are affections in which the application of carbonic-acid gas produces the most satisfactory results. There are even patients in this category whose skin does not support any kind of water bathing, but only dry gas.

Rotureau (*Études sur les eaux de Nauheim*, 1856) says: "The carbonic-acid gas baths have been successfully employed, especially in rheumatic affections. The most severe of rheumatic affections is perhaps the paralysis; the gas treatment has a most powerful effect on this manifestation of rheumatism. Of all forms of paralysis, paraplegia is the one quickest to vanish under this treatment and to attain the most complete cure. Paralytics who come to Nauheim, with the lower extremities more or less deprived of mobility, are subjected to the dry-gas treatment. Even when the paralysis is complete, the mobility returns gradually from day to day in a most remarkable manner, so that the effect of each bath can be noticed. There are cases in which the baths have been so effective that a rheumatic patient, who for whole years had not been able to use his limbs, was enabled to walk after the fifteenth bath. One is surprised also to see what powerful effect the gas application has in cases of hysterical paralysis." The author wishes it distinctly understood that what he says of the effect of the baths of Nauheim has no reference to those forms of paralysis which are manifestations of organic disease of the brain.

Certain chronic neuralgias, such, for instance, as tic douloureux, sciatica, etc., have been successfully treated by means of the gas bath and douche in cases in which numerous remedies had been tried for a long time previously and had failed. All observers are unanimous on this point, especially with regard to sciatica, excluding, however, those cases in which an advanced organic lesion is the cause.

According to the literature of the middle of the nineteenth century, gas douches are of service in oculo-palpebral inflammation, but the treatment must be modified in the different forms of conjunctivitis—namely, acute and chronic. In acute conjunctivitis the douche is at first to be directed upon the eyelids, because its direct application would cause pain and increase inflammation. The gas is to be applied until the eyelids redden; improvement is seen to follow even in the most acute stage. The action is prompt; photophobia, dacryorrhœa, lagophthalmus, and the swelling of the eyelids disappear; these douches, therefore, offer, according to these reports, a valuable aid in the treatment of chronic conjunctivitis. The gas douche is also praised in the treatment of more profound inflammation—namely, in keratitis, even when ulceration has developed. It is said that in vascular, superficial, and even interstitial keratitis, relief follows generally after the first applications of the gas. Much more is found in the literature of our ancestors on the treatment of keratitis by means of the gas douches; but this treatment has been abandoned, whether justly or unjustly is for ophthalmologists to decide who perhaps may try it again, since we now possess a more convenient way to apply the gas douche. Demarquay speaks further enthusiastically on the treatment of amaurosis by means of carbonic-acid gas douches, and says that their effect in this condition has excited the greatest attention. Mention is made also of the gas treatment in diseases of the ear, such as otorrhœa, and in certain forms of deafness. Inquiring among many of the best read of my colleagues—specialists on eye, ear, nose, and throat diseases—I found that they were not even aware of the fact that carbonic-acid gas had formerly been used as a remedy in a number of eye, ear, nose, and throat affections. Our later literature has omitted all mention of this even as a historical fact.

It may further be stated that the gas has also been employed in skin diseases.

A very gratifying and prompt effect is reported from the application of carbonic-acid gas in certain cases of cystitis and vesical neuralgia. Broca published his experience on this subject in the *Moniteur des hôpitaux*, 1857, but I have been unable to see this journal. Demarquay also, however, has published a large number of observations showing that carbonic acid is one of the best palliatives or adjuvants in such conditions. He relates the case of a woman, thirty years of age, who suffered from neuralgia of the bladder without any known cause. The patient had frequent attacks, about twenty a day, lasting from five to ten minutes each time; injection of carbonic-acid gas into the bladder practised twice a day brought about prompt relief. On the fourth day of this treatment the patient had only three attacks during the day, and was completely cured after fifteen days' treatment. Before the gas douches had been resorted to antineuralgics had been prescribed without avail. Demarquay speaks of the good results of the gas treatment in cystitis. In all cases, according to him, carbonic acid acts as a sedative, but in a quite characteristic manner. At first it produces quite marked excitation of very short duration, which, while it lasts, seems to increase the symptoms of inflammation already existing. This may be due simply to its mechanical effect—that is, to its action as a foreign body, and also to its irritating effect on some mucous membranes, like that of the nose at the first moment of application, particularly when the current of gas is very strong. Afterward, especially on account of the facility with which it is absorbed by the mucous membrane of the bladder, it produces analgesia in this organ.

Demarquay gives the description of the different modes of application. As the best method he recommends that a rubber bladder of the capacity of from thirty to forty centilitres be filled with the gas which is introduced from the rubber bag into the bladder by means of an ordinary catheter attached to the bag. This problem is now solved in the simplest way. We are now able to store liquefied gas or gases under high tension in steel capsules of any desirable size. From these capsules the carbonic acid, transferred again into gas, can be directed at will in exact amounts and with exact regulation of the current to any desired point or into any cavity. Mondollot, in order to fill the bladder with carbonic-acid gas, employed a double-current catheter. If such an instrument is employed care has to be taken that the gas may enter slowly, while the hypogastric region is closely observed in order to guard against excessive inflation. Such an accident may happen when one of the eyes of the catheter becomes obstructed by mucus; and, indeed, this accident did happen in Demarquay's own practice in a case of cystitis. The patient suddenly uttered a piercing cry and said that his bladder had burst, and such was found to be the case. Even this accident can now be avoided, since we are, as stated, enabled to measure exactly the amount of gas we wish to apply and to regulate the current likewise with absolute certainty.

But returning to this case of rupture of the bladder: "If, instead of the carbonic-acid gas, atmospheric air had been injected," says Demarquay, "I should have felt alarmed; but knowing with what great facility the mucous and serous membranes absorb this gas, and knowing how harmless it is when brought in contact with the tissues, I felt almost reassured in regard to the consequences of this gas infiltration." In fact, though the patient suffered some pain, probably caused by the rupture of the bladder, the gas became gradually absorbed, and after two hours it seemed to have disappeared completely. I will not criticise this report, but confine myself to narrating the statement of Demarquay.

Topical application of carbonic-acid gas in the shape of baths or douches has been tried quite extensively by balneologists of a former period, but a rational base for this kind of balneotherapy they have not given; in the literature of their time we fail to find specified rules based on exactly controlled observations. All we can learn from them is that the gas exerts certain decided effects.

These effects are described as follows: When the patient is in the bath the pulse at first increases, but after half an hour's stay in the gas bath this frequency becomes reduced. The gas produces a sensation of warmth to the skin, prickling and redness, especially at those parts which are most richly supplied with nerves; for instance, the scrotum, and in not a few patients perspiration follows. Micturition becomes increased in frequency and in the quantity of urine voided; there has also been noticed an increased amount of urea in the urine. In women continued bathing has increased the amount of menstrual flow. The patient feels for hours after the bath cheerfully animated and freer in all his movements. My own experience confirms this description. The sensation produced by the bath is to be compared with the sensation we experience when on a hot summer day we sojourn at the seashore enjoying the cool sea breeze. This happy state really continues for hours after the bath has been taken.

The physicians of Nauheim were the first to give a scientific description of the influence of carbonic-acid water baths in different nosological conditions, especially in disorders of circulation. Beneke has demonstrated that the water bath saturated with carbonic-acid gas is a powerful and effective stimulant for the enfeebled heart. He was the first who had the courage to place dyspnoic patients suffering from uncompensated valvular disease into the bath. He also tried the effect of these baths in other morbid conditions, as in arthritis and nervous diseases. Schott and Groedl continued to work on this basis which had been laid down by Beneke. The brothers Schott have established a system of their own of physical therapeutics for disorders of the circulation in which carbonic acid plays a rôle. We need not dwell on this method since it has become so well known to all of us. It is sufficient to have mentioned it. Your attention is not called in this paper to the water bath, but to the gas bath.

I have written to some colleagues at Nauheim to inform me how and what use is made now of carbonic-acid gas baths in this watering place. The answer I have received is simply that the bath in this form is not employed any more in Nauheim, on account of the danger connected with it. I wish to put stress on this expression of fear of danger because I should like to know how it is possible to incur any danger except by forcibly drawing the patient, his head included, into the gas.

(*To be concluded.*)

THE SUDAN III STAIN FOR THE TUBERCLE BACILLUS.

By D. MURRAY COWIE, M. D.,
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[From the clinical and pathological laboratories of the University of Michigan, Ann Arbor, Mich.]

Dorset published an article in the *New York Medical Journal* of February 4, 1899, which was read at the meeting of the American Public Health Association held September 27 to 29, 1898, on a New Stain for the Bacillus Tuberculosis. The work was done in the biochemic laboratory of the United States Department of Agriculture.

The method described in his article is as follows: The specimen to be examined is fixed in the usual way, and is then placed in a cold saturated eighty-per-cent. alcoholic solution of sudan iii for five or ten minutes. It is next washed in several changes of seventy-per-cent. alcohol, dried, and mounted. The tubercle bacillus is stained a bright red; all other bacteria remain unstained.

The method is based (1) on the discovery of Hammerschlag of the presence of a large percentage of fat in the bodies of the tubercle bacillus, and (2) on the discovery of Daddi that sudan iii is a good stain for fat in histological and pathological sections.

By his method Dorset succeeded in staining the tubercle bacillus in sputum, tissue sections, and pure cultures. He further demonstrated that sudan iii was apparently a selective stain for the tubercle bacillus. He says: "I endeavored to stain the numerous varieties of bacteria found in decomposing sputa, pure culture of hog cholera, glanders, typhoid, anthrax, symptomatic anthrax, diphtheria, and prodigiosus bacilli, the spirillum of Asiatic cholera, and the *Streptococcus pyogenes aureus*, with negative results. Preparations of the smegma bacillus were also made, but did not stain with the sudan iii."

I had long been working with the smegma bacillus, and as soon as Dorset's article appeared I proceeded to make similar investigations, especially with reference to the differentiation of the tubercle bacillus from the smegma bacillus, and, although I followed Dorset's directions to the letter, I was unable, after many attempts, to succeed in staining the tubercle bacillus. I next tried the effect of longer exposures of the specimens to the sudan iii. I allowed them to remain in the stain respectively twenty minutes, thirty minutes, two hours, and in one case twelve hours. The results were negative.

Warthin made similar experiments, and, in addition, he tried the effect of the stain on tissue sections containing fat. He followed closely the directions of Dorset, but his results in every case were negative.

The stain used by Warthin and myself was obtained from the Actiengesellschaft für Anilinfarbrikation in Berlin through Eberbach & Son, of this city.

Fearing that my technique may have been faulty, or that my stain was not the article referred to in Dr. Dorset's paper, I wrote to him with reference to my experience. In his reply he says: "The material which I first used, and with which I did not fail to stain the tubercle bacillus satisfactorily, was obtained from Merck & Co., New York city. I have, however, obtained some material from them since the publication of my paper which, although sent to me as the same substance as that I originally purchased, was quite different, especially as to its solubility, and I was not able to stain the tubercle bacillus very satisfactorily with the second lot of substance."

Dr. Dorset says that he has recently received word from Germany that the sudan iii that they manufacture is not a pure substance, and that its chemical composition is not constant. He further says that he has also obtained some sudan iii from Grubler, and, although it appears to be comparatively pure, it does not stain the tubercle bacillus and is entirely different, both in its physical and chemical properties, from the sudan iii which he purchased from Merck.

I have, since receiving Dr. Dorset's letter, made some investigations with reference to the manufacture of sudan iii. I find that sudan iii was originally patented by Graessler, and is manufactured by five different firms under three different names—Actiengesellschaft für Anilinfarbrikation, in Berlin; J. B. Ibels, Brussels; Alfred Fischesser & Co., in Lutterbach, manufacture the substance under the name sudan iii. Leopold Cassella & Co., in Frankfort, manufacture the substance under the name Cerasinroth. Manufacture Lyonnaise de Matières Colorantes, Lyons, France, manufacture the substance under the name of *rouge cérasine.*

Grubler lists what he calls sudan iii—Fettfärbung, nach Daddi, a preparation which he obtains from Berlin. The chemical composition of these dyes is not given. They are all soluble in alcohol, alcoholic lacquers, and fats; insoluble in water and alkalies. They are crystallized from glacial acetic acid in brown flakes having a greenish metallic lustre.

It is to be hoped that the stain used first by Dr. Dorset will be found, and if it proves, on further investigation, to be a selective stain for the tubercle bacillus, its value in clinical medicine will be inestimable, especially in the distinctive diagnosis of the smegma bacillus.

THE LIMITATIONS AND VALUE OF FLUOROSCOPIC EXAMINATIONS.

By CHARLES LESTER LEONARD, A.M., M.D.,
PHILADELPHIA.

The possibility of obtaining visual images through the fluoroscope, to replace and confirm the mental pictures formed by the diagnostician by other methods, has opened an attractive field for study. The data obtained by this means have their limitations. It is but another method of diagnosis which depends for its accuracy on the perceptions of the individual, and is accurate only in proportion to the development and capacity of the individual observer. What he thinks he sees may not be what exists. The picture on the fluoroscopic screen transfers the image through the eyes and forms the mental picture, but it produces no mechanical record. Like the other methods of physical diagnosis, it is dependent upon the personal equation of the observer for its accuracy, and can not be divorced from the errors which that association introduces.

There is no accurate mechanical record of the evidence obtained that can be compared with later observations in the same case or with other cases. They are only mental pictures, incapable of accurate comparison with the observations of others, since they can not be judged by a fixed physical standard. The method differs from the skiagraphic process of employing the Röntgen rays, and can not, as it does, approach in accuracy such methods as those based on chemical analysis, the records of the clinical thermometer, the sphygmograph, and, in a measure, the data obtained by the microscope.

As a method of diagnosis it is of value in confirming the mental pictures formed by auscultation and percussion, but these methods have the advantage of a clinical experience that has perfected them and eliminated much of their error. All these methods are limited in their accuracy by the personal experience and the individual equation of the observer. None of them produce mechanically their results or gauge them by an unalterable mechanical standard. Clinical experience with the fluoroscopic method of diagnosis is limited to less than four years. It is impossible that an observer, no matter how assiduous he has been in his study, can have attained greater accuracy within that time than, if as great as, that which years of study and the teachings of others and other generations have developed in experienced clinical observers.

The shadows cast by the Röntgen rays are proportionate to the absorptive, diffusing, or diffracting properties of the tissues which are interposed between their source and the fluorescent screen. It is possible, as certain observers have already maintained, that the same tissues possess these properties in different proportions in different individuals or at different periods. This is undoubtedly true in pathological conditions.

What the physiological variations are, and what is the normal, with reference to the Röntgen rays, has not been determined.

It is impossible to detect pathological changes unless we know the normal, with its physiological variations, or to compare results without a fixed standard to which reference can be made.

The relative translucency of the lungs to the Röntgen discharge varies with the amount of air they contain as well as with pathological alterations in their structure. It is possible to detect with the fluoroscope areas in which there is less relative translucency or increase in translucency during inspiration or expiration. But is it possible to determine what the physiological variation is in that case? Has sufficient experience been secured to determine pathological changes other than those of the grossest character?

The physiological variations in the expansion of thoraces, measuring the same in circumference, are very great in different individuals and change in the same individual at different periods. These types of breathing, all normal, produce changes in the expansion of different portions of the lungs. Although the lungs in all these cases are within physiological limits, these normal variations would each have the effect of producing a different coefficient of translucency. The fluoroscopic image would be different in each of these normal thoraces and would convey different mental impressions through the eye of the observer.

The apices of persons of sedentary habit are illy developed and fail often to expand in normal breathing. How can the fluoroscope differentiate between this normal opacity and that of incipient tuberculosis?

This lack of a normal with known physiological variations is found in connection with other thoracic viscera. There is as marked an indefiniteness as the result of physiological variation as in other methods of physical diagnosis, and it is more difficult to detect slight pathological changes since the normal is not clearly definable.

Differences that are gross can be readily detected—as, for instance, limitations in the excursion of the diaphragm. But unless the normal of that particular type of breathing is established, slight variations may be within physiological limits.

Until the normal is established and comparison of results secured the opinions based upon such examinations can have but a relative value, and are only the mental impressions of the observer, to be gauged and valued as personal opinions. And even when the normal is known, how shall we be able to distinguish between the various pathological conditions that produce identical opacities?

Undoubtedly this method will attain an equal accuracy with those that have been perfected by clinical experience, but until sufficient time has passed for its careful study and the elimination of errors no credence should be given to those who claim for it more accuracy, and the power to form more precise mental images and at an earlier date than by other methods. Its weaknesses and limitations should be acknowledged while its value is realized, and all credit given to those who are perfecting its employment. The enthusiasm and glamour of novelty should not hide its shortcomings and fallacies.

The detection and study of abnormal motion are two of its greatest practical applications. They, however, imply a correct knowledge of the normal, and, unless this has been secured, no accuracy can be hoped for. Without precision its greatest value, the detection of incipient disease, can never be approximated.

Absolute accuracy by this method seems hardly possible, since the fallibility of observations of this character has often been proved. The era of instantaneous photography revealed the inability of most of the artists to depict correctly the sequence of motion which they observed.

The skiagraphic method of diagnosis possesses a peculiar advantage over the fluoroscopic in mechanically recording the observation. Accurate comparison with a normal is thus made possible, and the study of the record by different observers and its comparison with subsequent records insure the correct deduction and diagnosis.

It is probable that normal and abnormal motion will be registered and studied by series of instantaneous skiagraphs, as it is so commonly depicted in ordinary photographs.

The recent work of Levy-Dorn, in Berlin, in making skiagraphs of the thorax at rest in full inspiration or expiration is a notable step in this direction.

The greatest future advances in Röntgen-ray diagnosis will be made in the distinction of the less dense tissues and the study of motion by means of skiagraphs. Permanent records will thus be made and data obtained for future reference and study.

The value of the X ray is not in its power to penetrate everything, but in distinguishing between the less dense tissues, and thus enabling us to study organs and viscera that are hidden from ordinary vision. The fluoroscope is incapable of detecting these shades of difference, and does not mechanically register what it shows.

1930 Chestnut Street.

HÆMORRHOIDS:

THE GENERAL PRACTITIONER AND THE UBIQUITOUS CHARLATAN.

A PLEA FOR THE SYSTEMATIC EXAMINATION OF RECTAL PATIENTS BY THE FAMILY PHYSICIAN.

By J. WILLIAM J. DOYLE, M. D.,
PHILADELPHIA.

Without fear of being disputed we can safely assert that diseases of the lower bowel and rectum are among the affections most frequently brought to the attention of the general practitioner, and as frequently treated in a haphazard manner by unscientific methods, or perhaps not treated at all in some instances.

It is a matter of almost daily observation to have a patient express himself as having suffered for years from piles. Sometimes he mentions the subject incidentally while consulting us for the relief or cure of another complaint, not even recognizing an indirect relationship existing between his rectal trouble and the disease for the relief of which he seeks advice. If questioned closely, he reluctantly admits he has not secured any permanent relief from the various ointments, salves, injections, and advertised cures he has more or less frequently made use of, and expresses his conviction that his case is beyond cure, emphasizing his statement by saying he has consulted a number of physicians without obtaining help. If questioned as to the nature of the examination made by these several physicians to determine the character of his complaint, he almost invariably answers that an examination of any kind was not requested. The doctor simply asked him a few questions and then gave him a prescription. Should our patient happen to be a woman, she will probably be horrified at the suggestion, and tell you you are the only doctor who ever made such a request, and she has consulted at least half a dozen good doctors. Her consent to a vaginal examination is easily obtained compared to the trouble experienced in securing her cooperation in determining the nature of a rectal trouble. She knows she has piles and insists upon your accepting her diagnosis. If you do so you are simply following in the footsteps of your predecessors and will probably obtain the same brilliant result and lose your patient, your reputation, and fees, as these cases drift from doctor to doctor until they finally fall into the hands of some one who, working systematically, discovers the real nature of the trouble and reaps a just reward.

To those in the habit of making rectal examinations the folly of accepting the patient's statements regarding the nature of his complaint is repeatedly and forcibly demonstrated. The physiological functions and anatomical relations of the parts involved suggest the possibility of complications that are commonly found to exist, while other diseases are frequently exciting causes of hæmorrhoids, especially the internal variety. Common among them may be mentioned uterine displacements, pelvic and abdominal growths, affections of the bladder, urethral stricture, diseased and hypertrophied prostate, etc.

Illustrative of the injustice to our patient and the honor of our profession of a careless method or, correctly, want of method may be cited the following instances:

Mrs. B. J. C., aged forty-seven years; weight, one hundred and fifty-five pounds; four pregnancies; two children living, aged respectively sixteen and twenty-two years. One child died in infancy of "marasmus," another at twenty-one years of phthisis, after an illness of three months. Patient's sister died of cancer of the uterus after operation. Patient had always enjoyed good health until within the last two years, when she had been troubled by irregular and excessive hæmorrhage at and between menstrual periods, a feeling of distress and fullness in the lower bowel, constipation alternating with diarrhœa, and bleeding piles. She had been more or less constantly under the care of physicians for the past two or three years, not any of whom requested an examination, but accounted for her troubles by relegating them to change of life, and telling her her piles, instead of being an injury, were of decided benefit. Rectal examination revealed only a varicose condition of hæmorrhoidal veins and unmistakable cancerous growth. Uterine examination did not exhibit any evidence of deposit. Patient declined operative interference. Now, had this patient been subjected to systematic examination when seen by her first attendant, the nature of her trouble would have been recognized, or at any rate it would have been assuredly proved that hæmorrhoids were not to blame, and a consultation called for. Had she submitted thus early to operative treatment her life would have been prolonged, perhaps a cure effected, and the honor of the profession upheld. As it is, this case is a monument to the almost criminal neglect of a profession bound by every moral obligation to protect and aid to the best of its ability those whose necessities compel them to rely upon us in their misfortunes. Moreover, from a medico-legal point of view, by neglecting an obvious duty to the patient, we are amenable to the law, and the patient can recover damages by our failure to live up to our obligations.

Miss Minnie W., aged twenty-six years; saleswoman; weight, one hundred and eight pounds. Had been treated for indigestion, constipation, and piles for three or four years. She knew she had piles because all the doctors had told her so; besides, she was compelled to push them inside the bowel frequently, and at times could hardly stand on account of pain and distress. Examination revealed the existence of a fibroid polyp, but not any piles.

Cases similar to the foregoing could be multiplied *ad infinitum*, clearly exemplifying the injury and injustice to the sufferer and the profession by a careless and unscientific method on the part of the average general practitioner, but these should suffice to demonstrate the necessity of painstaking, systematic examination of patients seeking advice for rectal disease. Then, perhaps, the vender of infallible cures and the diamond-bedecked charlatan would not enjoy the lucrative patronage that is theirs to-day, the public would be benefited and protected, the individual physician would enjoy and merit greater confidence, and the profession be exalted by honorable achievement.

There is really nothing extraordinarily difficult about making rectal examinations, neither are a great variety of complicated and expensive instruments required. We all have a table or couch of some kind in the office, and almost any one can acquire with practice the delicacy of touch demanded.

For convenience, the rectum may be divided into three parts, the first part being four inches long; the second, three inches; and the third, an inch and a half. Now, remembering that the serous coat of the rectum is from the peritonæum and entirely invests the first part, and that the mesorectum dips down in front of the second part, we shall be abundantly guarded by danger signals.

Having decided from the history detailed by our patient that an examination is desirable, he is invited to get upon the couch. For general use Sims's position is probably the most convenient and agreeable to the patient. Now, what are we going to look for? First, we must thoroughly scrutinize the anus and the parts adjacent to it. Eczemas, external piles, ulcers, fissures, openings of fistulæ, etc., can be seen without the use of any instruments whatever. Having satisfied ourselves of the condition of the external parts, we proceed to look for disease within the rectum. Now, the vast majority of diseases within the rectum can be detected by the educated finger, the speculum being but seldom required. By anointing the finger with vaseline or oil and introducing slowly and carefully with a slightly boring motion, but little if any pain will be caused unless some serious trouble exists. While introducing the finger we get a definite idea of the condition of the external sphincter muscle; once the finger is inside, we readily detect any abnormal condition, such as stricture, internal piles, if enlarged and indurated by inflammation, a polypus hanging by its stem, old ulcers with indurated bases, and sometimes the opening of internal fistulæ. In the male we examine into the condition of the prostate gland; in the female, into the size, shape, and position of the uterus, ovaries, etc. For ordinary examinations, when the speculum is demanded to confirm the diagnosis, Cook's or Mathews's answers satisfactorily; while for the inspection of the deeper parts, Kelly's tubes are admirable, but require more care and skill in their introduction. The probe, made of soft silver, is sometimes a very useful instrument, but is really but seldom required, as we can usually see the external opening of a fistula and feel its channel. It is of decided utility occasionally in demonstrating an internal opening. The rectal bougie should not even be purchased by the tyro, and is a dangerous instrument in the hands of an expert.

Such an examination—in connection with the history of the case as to (1) pain, its character, situation, and relation to the act of defæcation—whether worse before, during, immediately after, or some time after evacuation; (2) itching; (3) a sense of fullness, heat, and burning; (4) swelling and protrusion at anal opening—its relation to defæcation, whether or not it becomes reduced spontaneously; (5) bleeding; (6) discharge—if any, its nature, whether mucus, bloody, purulent, or offensive; its relation to defæcation or its occurrence independently of that process; (7) the character of the evacuation as to color, size, consistence, and regularity; (8) the family history regarding malignant disease and general inquiry into the *personnel* of the patient—will place us in a position to form at least a fairly accurate diagnosis and enable us to keep the patient within the circle of an educated profession, and the rectal charlatan, whose sole object is to grasp the pursestrings of the sufferer, will be compelled to devote his attention to other pursuits.

1527 RITNER STREET.

Therapeutical Notes.

Zinol in Gonorrhœa.—*Nouveau Montpellier médical* for November 12th, citing the *Pharmaceutische Rundschau*, 1899, and the *Répertoire de pharmacie*, says that zinol, a new remedy for gonorrhœa, is composed of one part of acetate of zinc and four parts of naphthosulphonate of albumin. It is employed in aqueous solution of a strength of from twenty-two grains and a half to forty-five grains to the quart.

A Diuretic Tincture.—The *Journal de médecine de Paris* for December 3, 1899, ascribes the following to Huchard:

℞ Tincture of grindelia robusta ..	150	grains;
Tincture of convallaria majalis	150	"
Tincture of squills	75	"

M. Fifteen drops to be taken thrice daily.

For Psoriasis.—*Riforma medica* for December 11, 1899, attributes the following to Talamon:

℞ Salicylic acid	45	grains;
Ichthyol	150	"
Pyrogallic acid	90	"
Lanolin or vaseline	1,500	"

M. For local application.

The Treatment of Hysteria in Young Girls.—The *Journal de médecine de Paris* for December 3, 1899, gives the following:

1. Hot poultices of belladonna leaves, moistened with oil of hyoscyamus, to be applied to the abdomen.
2. The patient to be kept in absolute repose and silence during the menstrual period.
3. The patient to be plunged daily in a bath of linden at 98.6° F. for an hour or an hour and a half. To the bath the following decoction should be added:

℞ Linden flowers	4,500	grains;
Boiling water	4	pints.

The following enema should be administered on leaving the bath and retained:

℞ Valerianate of ammonium ...	4½	grains;
Powdered camphor	3¾	"
Yolk of egg	1	
Decoction of valerian	3,000	grains.

M.

5. Five days before and five days after several successive menstrual periods from thirty to forty drops, in divided doses of ten drops each, should be administered of an alcoholate of the leaves and roots of anemone pulsatilla.
6. Should this treatment fail, after three months should be administered, five days before, during, and five days after several successive menstrual periods, seventy-five grains of tincture of viburnum prunifolium, from forty to fifty grains being administered daily, divided into two doses.
7. Inhalations of ether or chloroform in small quantities in case of acute crises.

Preparations of Trional.—According to the *Gazette hebdomadaire de médecine et de chirurgie* for November 30, 1899, M. Ponchet proposes the following formulæ:

℞ Trional	15	grains;
Oil of sweet almonds	300	"
Sugar	120	"
Gum tragacanth, Gum arabic, } of each.....	3	"
Orange-flower water	150	"
Laurel rose water	30	"

M.

This formula produces an emulsion which can be taken in half a glassful of water or milk.

The following formula is recommended for an enema:

℞ Trional	from 7½ to 15	grains;
Oil	from 150 to 300	"
Yolk of egg	1;	
Water	3,750	grains.

THE
NEW YORK MEDICAL JOURNAL.
A Weekly Review of Medicine.
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NEW YORK, SATURDAY, JANUARY 6, 1900.

THE QUESTION OF SPURIOUS VACCINIA.

In the *Journal des praticiens* for September 9th Dr. H. Gillet makes some very positive statements. We venture to say that not all of them will meet with ready acceptance. He declares that there is no such thing as spurious vaccinia; either a vaccination succeeds or it fails. He is speaking more particularly of revaccination. If any sort of cutaneous lesion follows, a minute vesicle or nothing more than a papule, it is truly vaccinal, he says, and renews the immunity that had been conferred by the first vaccination, but had ceased or grown feeble with the lapse of time. The lesion may be atypical, he says, but it should not be called spurious. He rests his contention on clinical observation and on experiments. Persons who are revaccinated with only results that are termed spurious, he remarks, are thereafter refractory to renewed attempts to inoculate them with vaccinia, and they do not take small-pox. We have no doubt that all this is true in a great many instances, but the fallacy of the author's contention lies in its sweeping nature. We are willing to admit that a cutaneous lesion produced by vaccination is protective if it is really vaccinal, however atypical it may be, but the difficulty in numerous instances is to distinguish between what is really due directly to the vaccination and what is simply traumatic or brought about by the accidental access of some other material than the vaccine to the abrasion. We think almost any experienced vaccinator can recall cases of results so widely differing from the typical vaccine pock as to lead him to distrust them altogether—cases, moreover, in which subsequent attempts gave rise to lesions that were satisfactory.

It is true, as Dr. Gillet says, that the fluid obtained from any kind of vaccinal lesion, however it may differ from the standard pock, is capable of giving rise to classical vaccinia when inoculated on suitable soil, but this is an experiment to which medical practitioners have usually not the facilities for resorting; the readier course for them is to keep on attempting to vaccinate the subject until repeated failures show him to be insusceptible. It is not always, says Dr. Gillet—and this will be readily admitted—that the fluid obtained from an atypical lesion proves potent to impart normal vaccinia; sometimes it seems to have undergone a sort of attenuation. Even then, he thinks, its potency may be restored to it by passing it through the system of a heifer. This statement, too, we think too absolute, although we know that feeble vaccine does frequently regain its original energy in the course of a series of inoculations, but the improvement is almost always gradual, and only the final product should be chosen for use on the human subject.

THE ARMY MEDICAL STAFF.

In the *Journal* for December 9th we published the text of a bill prepared by the surgeon-general to provide for an increase of the numbers of medical officers of the various grades, and in the same issue we advocated its enactment. We realized at the time that the bill was destitute of a provision that it might well have contained, that of making the rank and emoluments of the surgeon-general those of a major-general, but we recognized that Dr. Sternberg's modesty would restrain him from inserting such a feature in a bill emanating from himself. Aside from the surgeon-general's natural hesitation to seek for legislation which to some people would have the look of an attempt to promote his own interest, although really for the good of the service, there may have been the thought that a proposition to raise the rank of a chief of staff to that of a major-general would not be entertained by congress, for the reason that that rank, the highest in the army under ordinary conditions, should be held only by officers commanding a military department or a large body of troops. The pertinence of that objection will be done away with if such a permanent increase of the army as now seems necessary is accompanied by the establishment of the rank of lieutenant-general always open to attainment by a sufficiently meritorious major-general. This we think ought to be provided for.

If it is done, we believe that the medical profession of the country should urge upon congress the necessity of giving the surgeon-general the rank and emoluments of a major-general. The present rank of brigadier-general, with pay of $5,500 a year, is an inadequate reward for the professional attainments demanded by the office and the many years' service required to attain it. The line officers of the army can look forward to the possibility of reaching a higher rank, as there are three major-generals; surely it is but just that a staff corps should have one officer of such rank, which is held by the surgeon-generals of most foreign armies and is in keeping with the dignity of the medical profession.

It seems also that there should be a certain number of officers, who could be designated as medical director-generals, of the rank of brigadier-general, such officers to be assigned to the staff of commanders of army corps or military divisions. The commanding officer of such corps has the rank of major-general, and he has officers of the line of the rank of brigadier-general on his staff. The important duties imposed upon the medical officers on such a staff justify high rank and adequate compensation. During the Spanish-American war the highest rank given to such corps surgeons was that of lieutenant-colonel, and in several instances the date of the original commission in the army of an officer who held such a position was contemporary with that of the major-general on whose staff he was serving. Certainly, if the military experience of the line officer justified such rank, the equal experience of the medical officer justified a rank a grade lower.

The fact that the increase proposed for the medical corps is so moderate will impose more work and responsibility in the future upon each surgeon, with no betterment of his material prospects. It would seem just, therefore, that there should be some improvement made in his outlook for the future by the creation of the ranks here advocated. The increase proposed in the bill referred to leaves the proportion of grades as it exists at present; so that, while a few officers will, on the enactment of the bill, receive more speedy promotion, in the future advancement will be about as slow as at present. If the bill should be amended as proposed, there will be better promise of reward for long and faithful professional service, and for the present indifferent recognition of the worth of such service will be substituted a recompense somewhat in keeping with the value of the best class of professional work and more commensurate with the important position held by the medical profession to-day in all civilized countries.

PRECAUTIONS AGAINST THE PLAGUE.

We imagine that only a very small number of the people of the country felt needlessly solicitous concerning the recent arrival of an infected ship from Santos at the New York quarantine station. There is, indeed, no occasion for alarm, but there would be ground for apprehension were it not for the vigilance of the Marine-Hospital Service. The issue of its *Public Health Reports* dated December 15th shows a long list of places from which the plague has lately been reported. Santos and Oporto are those most likely to be points of departure of vessels against which we shall need to take special precautions, and such precautions, carefully prescribed by the surgeon-general, are even now taken at all American ports to keep the disease from getting access to the country, and have been ever since the promulgation of Dr. Wyman's special regulations, nearly a month ago.

These regulations are published in the same issue of the *Reports* that we have mentioned. Nothing could be more explicit or circumstantial. They relate to the treatment of vessels arriving from Santos and Oporto, their crews, their passengers, their cargoes, the pilots that bring them in, and the vermin with which they may be infested. To cause as little hardship, pecuniary loss, or inconvenience as possible to everybody concerned, so far as is compatible with the public safety, was evidently kept constantly in mind by Dr. Wyman in the framing of the regulations. It is interesting to learn that sulphur fumigation, the efficacy of which this generation of doubting Thomases has questioned, is quite effective in killing rats. "Officers of the Marine-Hospital Service at national quarantine stations," says Dr. Wyman, "state that it is not uncommon on wooden vessels, especially those recently engaged in the grain trade, to gather up, after disinfection of the hold with sulphur, a washtubful of dead rats, generally from alongside the keelson, where they have apparently gone to avoid the fumes of the sulphur, which rise while hot and sink upon cooling." The minuteness with which matters of detail have been taken into consideration may be judged of by the following regulation: "Nothing shall be thrown overboard from the vessel, not even deck sweepings. Such material shall be burned in the furnace or in a place specially designated, but not in the galley."

THE POSSIBILITY OF THE WITHDRAWAL OF CONSCIOUSNESS FROM THE DISTURBING INFLUENCES OF THE OBJECTIVE.

The dislocation of the sense connection between the inner subjective consciousness and objective influences which forms the basis of the phenomena of hypnotism or suggestion is also the operative measure in such amelioration as is produced in the workings of the Christian Science craft. The public generally seems to regard such dislocation possible by natural means—*i. e.*, without some divine intervention as alleged for their methods by Christian Scientists—only when associated with complete loss of consciousness, as, for instance, when under the influence of narcotics or anæsthetics, or in the extreme stages of hypnosis; yet the phenomena of mental abstraction as exemplified in a "brown study" should be familiar enough examples of a light form of such dislocation. But possibly one of the most vivid word pictures of the condition is drawn by Lieutenant Winston Churchill in his account of Kitchener's Khartoum campaign described in his book *The River War*. According to the *Army and Navy Journal* for December

22, 1899, the author's own impression of the charge, for he was in the thick of it, was this: "The whole scene flickered exactly like a cinematograph picture, and, besides, I remember no sound. The event seemed to pass in absolute silence. The yells of the enemy, the shouts of the soldiers, the firing of many shots, the clashing of sword and spear, were unnoticed by the senses, unregistered by the brain. Perhaps it's possible for the whole of a man's faculties to be concentrated in the eye, bridle hand, and trigger finger, and withdrawn from all other parts of the body." We make no apology for recurring so constantly to illustrations of this subject of the relation of perceptive consciousness to objective conditions. It is only by members of the profession educating the public individually and collectively to a full understanding of these known laws, by the rule-of-thumb use of which the Christian-Science leaders, from unscrupulous and purely selfish motives, obtain favorable enough results, notwithstanding their terrible calamities, that it is possible to impress the well-meaning crowd of votaries.

THE *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.*

The closing number of the *Journal of the American Medical Association* for the second half of the year 1899 contains another instance of its progressive development in the shape of the index. Besides the usual index matter, there is a special index containing the titles of the abstracts of all the original contributions appearing throughout that period in the principal American medical journals. Following this is a list of authors whose communications are thus dealt with. The great value of this arrangement will be at once evident if we think what a help it would be to us remembering the title of some paper, or remembering that some particular author had written a paper whose title we fail to recall, but the subject-matter of which impressed us. By the use of one or other of these indices, according to circumstances, we can track the paper to its abstract lair, and thence ascertain the journal in which the original appeared.

SAN FRANCISCO AS AN ENTRANCE POINT FOR THE PLAGUE.

Press dispatches report that the local health officials of San Francisco are taking vigorous measures with ships coming there from Honolulu. San Francisco is practically the only port by which the Oriental plague can reach our territory directly by way of the Pacific, and it is gratifying to be assured that the entrance of the disease by that portal is guarded against strenuously.

OUR NATIVE MEDICINAL PLANTS.

The flora of Mexico is rich in plants to which medicinal virtues are ascribed, and the Pan-American medical congresses will undoubtedly do much to bring them and like plants of South America to our knowledge. In addition, that organization has most creditably offered to cooperate with the Department of Agriculture in an investigation of our own medicinal plants. Much good is to be expected from such an enterprise, and we trust that congress will not hesitate to appropriate the small amount of money asked for by Secretary Wilson for the purpose.

THE CARE OF THE HYPODERMIC NEEDLE.

Medication by means of subcutaneous injections has come into such extensive use as to make the matter of keeping the little apparatus clean one of everyday importance. Dr. Belin (*Revue illustrée de polytechnique médicale,* 1899; *Normandie médicale,* September 15th) speaks from an experience of two years of the convenience of a small hand bulb for forcing out the last remnant of liquid from the needle. He remarks that a solution of caffeine is one that is particularly injurious to the needle.

BOILING ICE.

In the Miscellany department of the *Journal* for December 30, 1899, under the heading The Grinding Tyranny of the Sanitary Oligarchy, we quote from the *Southern Medical Journal* some rhymes ending thus:

> "And at last the doctor tells us
> That we've got to boil the ice."

Now, some may think that the idea of boiling ice is absurd. We should have thought so, too, not very long ago, but have lately learned a fact which, though new to us, has doubtless long been known to the enterprising ladies and gentlemen now in their teens. The gentleman from whom we learned it has an elderly son aged fifteen years. In reply to an inquiry as to what he drank when out for pleasure, he informed his father, a few weeks ago, that he and the "gentlemen" with whom he associated frequently indulged in *hot* soda water with *ice* cream—viz., the two mixed together. Taken by surprise, the father tried to demonstrate that $-a + a = 0$, or that the two substances of opposite extremes of temperature should neutralize each other and form an insipid mixture. He furthermore questioned the good sense of those indulging in such an unscientific combination. The mature son, however, defended the tastes of himself and friends, said there were good things his father was not familiar with, and hinted that, as the world was progressive, the gustatory habits of the members of one generation would naturally be more refined than those of a previous one. At any rate, in this case they have come very near to the actual fact of boiling ice, though not with a germicidal end in view.

THE CLOSING YEAR OF THE CENTURY.

It may safely be said, we think, that in no branch of human pursuits has more beneficent progress been made during the nineteenth century than in medicine. As we enter now upon the closing year of the century we are all in confident expectation that that year, short as it will seem, is destined to see still more notable achievements in the advancement of medical science and art—nothing perhaps so startling as the discovery of anæsthesia or that of the Röntgen rays, but much of hardly less importance.

CERVICAL RIBS.

Riblike bony formations springing from a cervical vertebra are occasionally observed, but it must rarely fall to one man's lot to see more than one case. Two, however, have been observed by Dr. Kiderlen (*Sitzungsberichte der Niederrheinischen Gesellschaft für Natur- und Heilkunde,* 1899; *Centralblatt für Chirurgie,* November 11th). In both cases, one in a young woman and the other in a cadet, a severe exertion proved the exciting cause of trouble. The girl's left arm gradually became atrophied and almost powerless. In the case of the young man there was muscular weakness of the left arm, with pain streaming down into the hand. The rudimentary rib was removed, and the patient recovered completely in three weeks.

THE TETANUS TOXINE AND ITS COMPLEMENT.

It seems that the domestic fowl is singularly refractory to the tetanus poison. Dr. Asakawa, of Tokio (*Centralblatt für Bakteriologie und Parasitenkunde,* xxiv, 4–7; *Centralblatt für innere Medicin,* November 18th), has been investigating the matter, and he attributes the immunity to the fact that the fowl is so scantily endowed with a certain natural constituent of the central nervous system (which he provisionally expresses by the letter X) that not enough of the compound $T + X$ can be formed to give rise to the disease. Such a union of the tetanus toxine with the mysterious substance in question he holds to be essential to the production of tetanus.

MYIASIS OF THE URETHRA.

The "harmless, necessary fly," not to be outdone by the malarial mosquito, is getting to be a factor of some importance in pathogeny, but rather by making itself the bearer of contagion than by depositing its ova in the ear, the nose, etc. A novel example of myiasis is recorded by Dr. D'Haenens (*Annales et bulletins de la Société de médecine d'Anvers,* June, 1898; *Centralblatt für innere Medicin,* November 11th). It affected the urethra. A young man was in the habit of injecting water into his urethra whenever he took a bath. After he had suffered for five or six days with itching in that canal and with difficult urination, the author injected a weak solution of silver nitrate, and the next day the patient brought him a larva of the domestic fly which had been expelled in urination.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported for the two weeks ending December 30, 1899:

DISEASES.	Week ending Dec. 23.		Week ending Dec. 30.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	41	14	50	13
Scarlet fever	176	10	154	17
Cerebro-spinal meningitis	0	6	0	5
Measles	484	15	450	20
Diphtheria	274	42	257	46
Croup	14	12	10	7
Tuberculosis	98	157	105	142
Chicken-pox	16	0	28	0
Small-pox	1	0	0	0

Reciprocity of State License.—The following resolution was adopted by the Illinois State Board of Health on October 10, 1899:

Resolved, That applicants for a State certificate to practise medicine and surgery in the State of Illinois, who have been examined and licensed by other State examining boards maintaining standards not lower than those provided for in the Act to Regulate the Practice of Medicine in the State of Illinois, in force July 1, 1899, shall be granted certificates without further examination, on payment of the fees required by the act, providing that the applicant, who must be a graduate of a medical college in good standing with this board, shall present with his license an affidavit from the president or secretary of the State examining board showing that the requirements of said examining board at the time of his examination were equal to those exacted by this board under the present law, and providing further, that the said State examining board will grant licenses without examination to applicants holding certificates issued by the Illinois State Board of Health under the act now in force.

Note.—Unde the provisions of the Act to Regulate the Practice of Medicine in the State of Illinois, in force July 1, 1899, an applicant for a certificate to practise medicine and surgery in the State must present evidence of being a graduate of a medical college in good standing as may be determined by the board, and must pass an examination in those general subjects and topics a knowledge of which is commonly and generally required of candidates for the degree of doctor of medicine by reputable medical colleges in the United States.

No medical college will be considered in good standing after January 1, 1900, which does not require of all graduates receiving diplomas after that date, as a condition of graduation, an attendance upon four full courses of lectures in four separate years.

The New York Academy of Medicine.—At the last stated meeting, on Thursday evening, the 4th inst., the following papers were presented for discussion: The Pathology of Migraine, by Dr. Colman W. Cutler; and The Significance of Migraine in Graves's Diseases, by Dr. W. H. Thomson.

At the next meeting of the Section in Surgery, on Monday evening, the 8th inst., Dr. John M. T. Finney will read a paper on The Treatment of Aortic Aneurysm, which will be discussed by Dr. John A. Wyeth, Dr. Robert Abbe, Dr. P. L. Bolton, and others.

At the next meeting of the Section in Genito-urinary Diseases, on Tuesday evening, the 9th inst., cases will be reported, patients will be presented, and new instruments and specimens will be exhibited. Dr. F. K. Otis will exhibit the improved Otis urethroscope.

At the next meeting of the Section in Pædiatrics, on Thursday evening, the 11th inst., the following papers will be discussed: The Statistics of an Epidemic of Measles, including the Observation of Koplik's Spots, by Dr. Vanderpoel Adriance; The Treatment of Whooping-cough without Drugs, by Dr. N. R. Norton; and Therapeutic and Other Measures in the Treatment of Whooping-cough, by Dr. L. E. Holt. Dr. Charles G. Kerley will exhibit an arm brace to prevent scratching in eczema, thumb-sucking, etc., and Dr. Adriance will present patients and will exhibit new instruments and specimens.

The Death of Sir Richard Thorne Thorne, K. C. B., F. R. S., occurred suddenly in London on December 18, 1899. Sir Richard was a noted sanitarian of world-wide reputation, and in 1892 succeeded the late Sir George Buchanan in the office of principal medical officer to the Local Government Board. His sanitary work as a government official was of the highest character, and his loss will be greatly mourned, both in his public capacity and as a private individual in England.

The Brooklyn Society of Neurology.—At the recent annual meeting officers for the ensuing year were elected as follows: President, Dr. William Browning; vice-president, Dr. C. F. Coombes; secretary, Dr. W. H. Haynes.

The Death of Dr. Domingos Freire is reported to have taken place recently in Rio de Janeiro. Dr. Freire, who is said to have been only fifty years old, will be remembered as one who did much to advance medicine.

A Power Ambulance for St. Vincent's Hospital, it is stated, is soon to be put into use.

The Late Dr. Elliott Coues.—Dr. Coues, who died last week, was not widely known in the medical profession, because he was not a practitioner of medicine, but the few who were acquainted with his work in comparative anatomy knew its worth and will regret deeply the fact of his having died while yet at the height of his mental activity.

The German Medical Society of the City of New York.—At the next regular meeting, on Monday evening, January 8th, Dr. Otto G. T. Kiliani will show a patient cured of total empyema by means of de Lorme's operation; Dr. A. F. Büchler will show one with scleroderma of the upper limb; and Dr. Kiliani will read a paper on The Diagnosis and Treatment of Surgical Diseases of the Joints.

International Cooperation for Relief in Southern Africa.—We learn that the hospital ship *Maine,* fitted out by American women for use in the Boer war, has been supplied with medicines by the London firm of Burroughs, Wellcome, & Co. The medicine chest, which is described as very handsome, is adorned with devices mainly expressive of good will between Britain and America.

The Buffalo Academy of Medicine.—At the last regular meeting of the Section in Surgery, on Tuesday evening, the 2d inst., a paper entitled The Prophylaxis and Treatment of Urethral Stricture was presented for discussion, and the following-named members took part: Dr. William H. Heath, Dr. William C. Phelps, Dr. J. B. Stoner, Dr. S. Y. Howell, and Dr. M. Hartwig.

Change of Address.—Dr. W. S. Bickham, from New Orleans, to 922 Madison Avenue, New York.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 23 to December 30, 1899:*

ARMSTRONG, SAMUEL T., Major and Surgeon, United States Volunteers, will proceed to Fort Slocum, New York, to accompany recruits on the transport *Sumner,* sailing on or about January 15, 1900, for Manila, where he will report for duty.

DARNALL, CARL R., First Lieutenant and Assistant Surgeon, United States Army, is granted leave of absence for ten days, with permission to visit the United States.

HARTSUFF, ALBERT, Lieutenant-Colonel and Deputy Surgeon-General, United States Army, is granted leave of absence for fourteen days.

LAWRASON, GEORGE B., Acting Assistant Surgeon, United States Army, is assigned to duty with troops, during the voyage to the Philippine Islands, on the transport *Sheridan.*

MUNSON, EDWARD L., Captain and Assistant Surgeon, United States Army, will proceed to Philadelphia on business pertaining to the construction of the new hospital tents in course of manufacture at the clothing depot, Schuylkill Arsenal, Pennsylvania.

RAYMOND, HENRY I., Major and Surgeon, United States Volunteers, will proceed to Chicago for duty as attending surgeon and examiner of recruits in that city, relieving JOHNSON, RICHARD W., Major and Surgeon, United States Army, who will proceed to San Francisco for duty.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending December 30, 1899:*

AMES, H. E., Surgeon. The order of December 20, 1899, is modified, and he is ordered to duty in connection with fitting out the *Kearsarge,* Newport News, Virginia.

GROW, E. J., Assistant Surgeon. Detached from the *Massachusetts* and ordered to the *Dixie.*

SIMONS, M. H., Medical Inspector. Ordered to Cleveland for recruiting duty.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the United States Marine-Hospital Service for the Seven Days ending December 28, 1899:*

SAWTELLE, H. W., Surgeon. Granted leave of absence for thirty days.

McINTOSH, W. P., Surgeon. Granted leave of absence for five days.

PERRY, J. C., Passed Assistant Surgeon. To proceed to Amoy, China, for special temporary duty.

ROSENAU, M. J., Passed Assistant Surgeon. To proceed to Baltimore for special temporary duty.

THOMAS, A. R., Passed Assistant Surgeon. To proceed to New York and report to Surgeon L. L. WILLIAMS (Immigration Depot) for special temporary duty. To proceed to Rotterdam, Netherlands, for duty.

COFER, L. E., Assistant Surgeon. Granted leave of absence for one month.

TABB, S. R., Assistant Surgeon. Granted leave of absence for fifteen days.

DUFFY, FRANCIS, Acting Assistant Surgeon. Granted leave of absence for seven days.

Society Meetings for the Coming Week:

MONDAY, *January 8th:* New York Academy of Medicine (Section in General Surgery); New York Academy of Sciences (Section in Chemistry and Technology); New York Medico-historical Society (private); New York Ophthalmological Society (private); Lenox Medical and Surgical Society, New York (private); Harlem Medical Association of the City of New York; Gynæcological Society of Boston; Burlington, Vermont, Medical and Surgical Club; Norwalk, Connecticut, Medical Society (private).

TUESDAY, *January 9th:* New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private—election); New York Obstetrical Society (private); Buffalo Academy of Medicine (Section in Medicine); Kings County, New York, Medical Association; Rome, New York, Medical Society; Medical Societies of the Counties of Chenango (quarterly—Binghamton), Clinton (annual—Plattsburgh), Erie (annual—Buffalo), Genesee (semiannual—Batavia), Greene (quarterly), Jefferson (annual — Watertown), Madison (semiannual), Oneida (quarterly—Utica), Ontario (quarterly), Rensselaer, Schenectady (annual — Schenectady), Schuyler (annual), Steuben (semiannual), Tioga (annual—Owego), Wayne (semiannual), and Yates (semiannual), New York; Newark, New Jersey, Medical Association (private—election); Trenton, New Jersey, Medical Association; Norfolk, Massachusetts, District Medical Society (Hyde Park); Clinical Society of the Elizabeth, New Jersey, General Hospital and Dispensary; Northwestern Medical Society of Philadelphia; Practitioners' Club, Richmond, Kentucky; Richmond, Virginia, Academy of Medicine and Surgery.

WEDNESDAY, *January 10th:* New York Pathological Society (annual); New York Surgical Society; American Microscopical Society of the City of New York; Society of the Alumni of the City (Charity) Hospital; Society for Medical Progress, New York; Medical Societies of the Counties of Albany, Dutchess (semiannual—Poughkeepsie), and Seneca (semiannual), New York; Tri-States Medical Association, New York (Port Jervis); Pittsfield, Massachusetts, Medical Association (private); Hampshire, Massachusetts, District Medical Society (quarterly—Northampton); Worcester, Massachusetts, District Medical Society (Worcester); Bennington, Vermont, and Hoosick, New York, County Medical Society (annual — Arlington); Philadelphia County Medical Society; Kansas City, Missouri, Ophthalmological and Otological Society.

THURSDAY, *January 11th:* Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society (annual—election); Medical Societies of the Counties of Cayuga and Fulton (annual—Johnstown). New York; South Boston, Massachusetts, Medical Club (private); Pathological Society of Philadelphia.

FRIDAY, *January 12th:* New York Academy of Medicine (Section in Neurology); Yorkville Medical Association, New York (private); Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties, New York.

SATURDAY, *January 13th:* Obstetrical Society of Boston (private); Worcester, Massachusetts, North District Medical Society.

Births, Marriages, and Deaths.

Born.

WILSON.—In Angel Island, California, on Thursday, December 14, 1899, to Dr. and Mrs. William H. Wilson, a daughter.

Married.

BRANDT—MULLIGAN.—In Hartford, Connecticut, on Saturday, December 30, 1899, Dr. Erdmann N. Brandt, of Tarrytown, New York, and Miss Eleanor Fuller Mulligan.

BUIST—MITCHELL.—In Charleston, South Carolina, on Tuesday, December 19, 1899, Dr. A. Johnston Buist and Miss Alice Stock Mitchell.

ELLIOTT—HOLMES.—In Charleston, South Carolina, on Thursday, November 23, 1899, Dr. McPherson Gregorie Elliott and Miss Jane Thurston Holmes.

LOGAN—HARMON.—In Brooklyn, on Sunday, December 24, 1899, Dr. John O. Logan and Miss Adèle Eugénie Harmon.

OECHSNER—CABLE.—In New Orleans, on Tuesday, December 26, 1899, Dr. John Frederick Oechsner and Miss Caroline Kinne Cable.

ORDWAY—JOHNSON.—In St. Louis, on Monday, January 1, 1900, Lieutenant Godwin Ordway and Miss Octavia Johnson, daughter of Dr. John B. Johnson.

PARKER—HOWELL.—In New Orleans, on Thursday, December 28, 1899, Dr. Edward C. Parker and Miss Ida Lee Howell.

PARKHURST — HAMILTON.—In Fair Haven, Vermont, on Wednesday, December 20, 1899, Dr. George D. Parkhurst and Miss Altha Hamilton.

POE—CROMWELL. — In Frostburg, Maryland, on Tuesday, January 2, 1900, Mr. S. Johnson Poe and Miss Laura L. Cromwell, daughter of Dr. Benjamin M. Cromwell.

PUTNAM—HOPKINSON.—In New York, on Tuesday, December 26, 1899, Dr. Charles R. L. Putnam and Miss Angelica Rathbone Hopkinson.

SALMON—ASHLEY. — In Albany, New York, on Thursday, December 21, 1899, Dr. Thomas William Salmon, of Brewster, New York, and Miss Helen Potter Ashley.

WOODWARD.—RANDELL.—In New York, on Saturday, December 23, 1899, Dr. Henry A. Woodward and Miss Hattie A. Randell.

Died.

ARMSTRONG.—In Middletown, New York, on Sunday, December 31, 1899, Dr. Lewis Armstrong, in the eighty-first year of his age.

BONYNGE.—In Chicago, on Tuesday, December 26, 1899, Dr. Francis G. Bonynge, in the fifty-first year of his age.

BURTON.—In Pittsfield, Massachusetts, on Wednesday, December 27, 1899, Mrs. S. C. Burton, wife of Dr. Stephen C. Burton.

CANFIELD.—In New York, on Tuesday, December 26, 1899, Dr. William B. Canfield, of Baltimore, in the forty-fourth year of his age.

COOK.—In Hackettstown, New Jersey, on Monday, January 1, 1900, Dr. John S. Cook, in the seventy-third year of his age.

COUES.—In Baltimore, on Monday, December 25, 1899, Dr. Elliott Coues, of Washington, in the fifty-eighth year of his age.

FISHER.—In Harlingen, New Jersey, on Sunday, December 31, 1899, Dr. Irwin R. Fisher.

FOWLER-BREAKSPEAR. — In Orange, New Jersey, on Sunday, December 31, 1899, Dr. Almira L. Fowler-Breakspear, in the seventy-third year of her age.

GEHRING.—In Malone, New York, on Saturday, December 30, 1899, Dr. Henry F. Gehring.

GRIGGS.—In Providence, Rhode Island, on Friday, December 22, 1899, Dr. O. B. Griggs, in the seventy-seventh year of his age.

HARNAN.—In New Orleans, on Wednesday, December 27, 1899, Dr. William R. Harnan, in the thirty-third year of his age.

MOORE.—In Stamford, Connecticut, on Wednesday, December 27, 1899, Dr. Charles Caldwell Moore, of New York, in the seventieth year of his age.

Smythe.—In Greenville, Mississippi, on Wednesday, December 20, 1899, Mrs. Sarah J. Smythe, wife of Dr. Jefferson D. Smythe.

Winston.—In New York, on Friday, December 29, 1899, Dr. Gustavus Storrs Winston, in the sixty-seventh year of his age.

Woodhull.—In Monroe, New York, on Saturday, December 23, 1899, Beatrice Winifred Woodhull, youngest daughter of Dr. Edward D. Woodhull.

Letters to the Editor.

THE ARMY RATION IN THE TROPICS.

San Juan, Puerto Rico, *December 27, 1899.*

To the Editor of the New York Medical Journal:

Sir: As a supplement to the article of my scientific friend, Colonel Smart, on the Army Ration, let me add a few practical observations gathered in Puerto Rico. Duty has taken me at one time or another since the first days of the American invasion into almost every town from Ysabela on the northwest coast to Humacao on the east coast, and then up the military road to this capital. In the districts of Guayama and Southern Humacao it was part of my business to investigate the cause of deaths among the natives.

Everywhere I found the main causes assigned to be anæmia and phthisis. Everywhere I went I was struck by this ever-prevalent anæmia. The pale, yellowish, waxy skin, the bloodless lips, and the swollen, puffy features formed a picture never seen by me out of tropical Puerto Rico. Yet I soon found that these people had been living on rice, beans, maize, dried codfish, and fruits. Meat very rarely ever entered into their diet. They and their fathers before them had lived exclusively on the diet urged by the public press as suitable for tropical climates, and the result filled the hospitals with such ghastly cases of anæmia that no one who has once seen the picture can ever forget the impression. On the other hand, I soon discovered that the people who lived in the towns and could afford it, ate two hearty meat meals daily. These people, I believe, used more meat than we used in American cities, and there is no doubt in my mind that I have used more meat, and felt more need for it, since I have been here than ever in the same time in the United States. Yet I am one of the few that had not to go home for ill health; while the natives that eat in the hotels with me, and as freely as I do, are perfectly healthy individuals, who show not the least trace of anæmia.

Only a few days since, a native informed me with much gusto that one of the best things that Puerto Rico afforded was *chuleta de cerdo* (pork chops), surely one of the most unsuitable articles of diet for a tropical climate, as our physiological friends will tell us, and yet the absence of which in my opinion made that native anæmic to a noticeable degree.

These observations are so common in this climate, and have been so forcibly impressed on me, that I feel more and more the wisdom of going very, very slowly in urging alterations in the ration.

P. R. Egan, M. D.,
Assistant Surgeon, United States Army.

BRAIN FATIGUE.

1012 Madison Avenue, Baltimore, *December 27, 1899.*

To the Editor of the New York Medical Journal:

Sir: In the November 11th number of your valuable *Journal* is a short article by R. Ellis, A. B., M. D., on Brain Fatigue. In this paper Dr. Ellis compares the condition of one of his patients with that of Sir Walter Scott, both of which conditions resulted from overtaxation of the nervous system, and both of which conditions embraced a similar mental state. In the case of Scott the mental state cited was "a confused idea that nothing passed was said for the first time; that the same topics had been discussed, and the same persons had stated the same opinions on the same subjects." In the case of his patient Dr. Ellis says: "He would think of or hear of some trifling incident, and at once his mind would say, 'I've heard that before,' and then would follow a mental hunt for the time and place."

Dr. Ellis says: "I have written this brief paper because I do not remember to have read anywhere of that mental condition which Scott calls 'a strange sense of preexistence.'"

I do not believe such a state of the mind as that noted by Dr. Ellis is as rare as one may think. In fact, I believe it is of frequent occurrence among those with active brains. Quite a number of persons have at different times assured me that they were at times impressed with the feeling that some occurrence, some attitude of themselves or their friends, or some part of a conversation had been experienced before; and I myself have had such sensations. In one of his inimitable breakfast-table books Oliver Wendell Holmes refers to this state of the mind, and Lewes also calls attention to it. For quite a dissertation on the subject I take pleasure in referring Dr. Ellis to Ribot's excellent treatise entitled *Diseases of Memory* (The International Scientific Series, D. Appleton and Company, 1882). Of this strange mental state Ribot says: "It consists in the belief that a new state has been previously experienced, so that when produced for the first time it seems to be a repetition. Wigan, in his well-known work on *Duality of the Mind,* tells us that when present at the funeral of the Princess Charlotte, in Windsor Chapel, he suddenly had the conviction that he had witnessed the same scenes somewhere before. This illusion was momentary, but there are instances of others more durable. Lewes associates the phenomenon with other illusions of more frequent occurrence. Sometimes in a strange region a sudden turn in the road brings us face to face with a landscape which we seem to have beheld before. Coming into the presence of a person for the first time, we *feel* as if we had really seen him. Reading a book with which we are unfamiliar, the thoughts and language appear as if they had been previously presented to the mind."

"The illusion is easily explained. The received impression evokes analogous impressions in the past, vague, confused, and scarcely tangible, but sufficiently distinct to induce the belief that the new state is a repetition. There is a basis of resemblance between two states of consciousness which is readily perceived and which leads to an imaginary identification. It is an error, but only in part, since there is really in the recorded impressions of the past something resembling a first experience. If this explanation is sufficient for very simple cases, there are others where it is inadmissible."

Perversions of memory form a most interesting psychological study, and the discovery of the place in the chain of either degenerative evidences or regenerative signs, where such a "double" mental state may be located, should prove of value to the alienist and even to the neurologist in prescribing a course of treatment for the ultimate healing of his patient.

ELDRIDGE C. PRICE, M. D.

⁂ After this letter was in type Dr. Price informed us that he had not at the time of writing seen Dr. Herrman's letter.

Pith of Current Literature.

The Local Treatment of Diphtheria.—Dr. Edwin Klebs (*Journal of the American Medical Association*, December 16th), in a paper read before the Columbus meeting, says that local treatment has been very much neglected since the introduction of serotherapy. In the use of local antiseptics such chemicals as are apt to endanger the life and action of tissue cells are to be absolutely avoided. Mild, unirritating antiseptics, such as chinosol—1 to 1,000—or antinosine in two-per-cent. solution, applied to the entire surface of the tonsils, palatum molle, pharynx, etc., with cotton balls, have given good results. The nasal passages should be washed with these same solutions by means of a suitable syringe. Such local applications have healed many cases of true diphtheria in which toxic symptoms were absent. The local use of the antidiphtherine, a ten times *in-vacuo* concentrated filtrate of diphtheria cultures, recommended and proved by the author as highly efficient against the local affection and the fever, should not be neglected. This substance could easily be prepared in every laboratory for antitoxic serum. Its manufacture is not prohibited by patents.

A Scarlatiniform Eruption after Salol.—M. Combemale (*Gazette hebdomadaire de médecine et de chirurgie*, November 23d) recently reported to the Central Medical Society of the North the case of a young woman nineteen years of age who had been sent to the hospital with a diagnosis of scarlet fever, but the eruption, which was slight, only occupied the trunk. The tongue was in good condition, there was but little sore throat, and the eruption was followed after two days' duration by slight desquamation. There was but little fever, and no albumin in the urine. M. Combemale doubted the diagnosis from the first, and further investigation showed that the eruption appeared on the day following the ingestion of only fifteen grains of salol.

Extraction of a Tapeworm through the Mouth.—Dr. Ludlow (*Cleveland Medical Gazette*, November) gave a boy ten years old, who had worms, calomel and santonine to be taken with the usual directions as to fasting, and a saline subsequently. A report was received the next day that at about noon of the same day, and six hours after giving the calomel and santonine, the boy was taken with a choking spell, exclaiming that he was dying. Opening his mouth, it was found full of tapeworm, of which some twenty feet were extracted through the mouth, when the worm broke. In the course of an hour he passed from the bowel a piece fully as long as that which came from the mouth. The worm was brought in such a condition that it was impossible to find the head if it was present. After several days' rest and preparatory fasting, an emulsion of pumpkin seeds and ethereal extract of male fern was given, with the effect only of free purgation. None of the worm has been seen since, and over two months have elapsed. The interesting feature of the case was the presence of the worm in the stomach and œsophagus.

The Relation of Migraine to Epilepsy.—Dr. W. G. Spiller (*American Journal of the Medical Sciences*, January, 1900), in a paper on this subject read before the Philadelphia Neurological Society, considers the following to be a proper view of this subject: 1. Attacks of migraine occur associated with nausea and vomiting; this form is known as simple migraine, and usually remains unaltered during the life of the patient. 2. In other cases visual disturbances (chemianopsia, scintillating scotoma, amaurosis, etc.) are associated with the migraine, and the disease is then known as ophthalmic migraine. 3. When paralysis of the ocular muscles occurs with the migraine the disease is described as ophthalmoplegic migraine. 4. Migraine, especially the ophthalmic form, is related to epilepsy, and the attacks of migraine may precede for many years the convulsive attacks of epilepsy, although in most cases of migraine no convulsions are ever detected. 5. In some cases epilepsy appears in the form of one or more of the disturbances seen occasionally with migraine, and later, even after many years, convulsions develop. The disease may be epilepsy from the beginning. It matters little, with our uncertain knowledge of the pathology of the two diseases, whether we regard these as abortive cases (*formes frustes*) of migraine that later become associated with epilepsy, or as abortive forms of epilepsy (sensory epilepsy), in which the convulsions later become apparent, provided we recognize a relation between some forms of migraine and epilepsy.

A Successful Removal of the Innominate Bone and Lower Extremity.—Ssalistschew (*Centralblatt für Chirurgie*, September 2d; *Edinburgh Medical Journal*, December) describes a successful case of this operation, which he calls "exarticulatio interilio-abdominalis." It may be carried out in two ways. Jaboulay's method consists in dividing the symphysis pubis and tying the common iliac vessels; in all of the four cases in which it has been practised the patient succumbed. The method of Girard and Bardenheuer consists in tying the external and internal iliac arteries, and in leaving the bone internal to the thyreoid foramen.

The author adopted Jaboulay's method, with certain modifications; the patient, a male, aged thirty-eight years, had suffered for two years from sarcoma of the right half of the pelvis, extending upward to the umbilicus and downward into the thigh; he suffered from very severe pain; the branches of the common iliac artery and the lower half of the psoas muscle were involved by the tumor.

The operation was performed on December 8, 1898. The first incision was made from the free extremity of the last rib to the anterior superior iliac spine, and then along Poupart's ligament to the spine of the pubes; the soft parts were divided down to the peritonæum; the common iliac artery was ligated three centimetres below its origin from the aorta; an oval posterior flap was then formed by an incision starting from the spine of the pubes along the fold between the perinæum and thigh to the tuber ischii, then curving round behind the great trochanter to the middle of the crest of the ilium, where it joined the first incision. After separating the soft parts, the symphysis pubis was divided, as were also the psoas muscle, the anterior crural nerve, the obturator vessels and nerve, and the sacral plexus. The sacro-iliac ligaments were then divided and the extremity removed. The bleeding was moderate. The divided muscles were sutured, those of the abdominal wall with the sacro-lumbalis, psoas magnus, and glutæus maximus. The skin wound was closed with sutures, but had to be partly opened on account of suppuration. Healing was completed in three months with the assistance of skin grafts.

Apart from some temporary disability of the bladder, the function of the pelvic organs was not disturbed. The tumor was a periosteal sarcoma, originating in the innominate bone, which had made its way through the thyreoid foramen and become fused with the periosteum of the femur. When hardened it weighed over six kilogrammes.

Proceedings of Societies.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Twenty-first Annual Congress, held in Chicago, Monday, Tuesday, and Wednesday, May 22, 23, and 24, 1899.

The President, Dr. William E. Casselberry, of Chicago, in the Chair.

(*Continued from vol. lxx, page 831.*)

The Early Diagnosis of Aneurysm of the Arch.—Dr. William Porter read a paper on this subject. (See vol. lxx, page 838.)

Fibro-lipomatous Tumor of the Epiglottis and Pharynx.—This was the title of a paper by Dr. E. Fletcher Ingals. (See vol. lxx, page 840.)

Fibrous Tumor of the Nasopharynx.—Dr. E. Fletcher Ingals presented this paper. (See vol. lxx, page 882.)

Confined Suppuration of the Frontal Sinus, with Spontaneous Rupture, including a Report of a Case.—This was the title of a paper by Dr. D. Braden Kyle. (See vol. lxx, page 879.)

A Report of the Operative Treatment of Several Cases of Frontal and Maxillary Sinusitis.—Dr. Frank W. Hinkel presented this paper. (See vol. lxx, page 917.)

A Report of a Few Cases of Chronic Empyema of the Antrum of Highmore; Operation by the Caldwell-Luc Method.—Dr. A. W. de Roaldes presented a paper on this subject. (See page 8.)

Dr. Henry L. Swain, of New Haven: I should like to ask Dr. de Roaldes three questions: First, how much hæmorrhage there was from the turbinectomy, and if it was a serious complication of the operation. Second, whether the upper lip was divided in the middle and turned back or simply everted. Third, how long it was before he took out permanently the gauze dressing of the antral cavity through the nose.

Dr. M. R. Ward, of Pittsburgh: I wish to ask Dr. de Roaldes if he resorts to this method in all cases of antral empyema, or whether he performs the operation only in obstinate cases that do not get well by drainage and irrigation.

I do not think we should let the interesting paper of Dr. de Roaldes's go by without further discussion. I suppose that Dr. Luc's claim to a portion of the credit for this operation is due to the simple fact that he had called special attention to the operation as performed by Dr. Caldwell more than two years before, which Dr. Caldwell clearly described exactly as now performed by Dr. Luc. I suppose his share in the credit of the operation is on the principle that, as Sidney Smith has said, "It is not he who first says a thing is the real discoverer, but he who says it so long and so loud as to compel mankind to hear him."

When performing this operation, in making the opening through the nasal wall of the antrum we should carefully consider the position of the antrum. In many cases the floor of the antrum will be found above the floor of the nasal passage, whereas in many other cases the floor of the antrum will be much below the floor of the nasal passage. In the former case an opening made into this cavity from the nasal wall will afford free drainage from the cavity into the nose, whereas in those cases where the floor of the antrum is much below the floor of the nasal passage we will have drainage from the nasal passage *into* the antrum.

The position of the antrum should therefore be carefully ascertained by making a small exploratory opening before the operation is attempted.

In opening the antrum from the outside through its anterior wall I much prefer making the opening through the canine eminence rather than the canine fossa.

The opening through the external wall should be a very large one in order to enable the operator to thoroughly inspect the interior of the cavity, to remove any polypoid growths or degenerate tissue, and to break down any partitions or walls dividing the cavity into compartments, which interfere very seriously with drainage, of which I shall speak in my paper on that subject.

When partitions, or sæpta, occur in the cavity, which are found in about half the cases, they must be thoroughly broken down and removed, so as to convert the antrum into one smooth cavity, and allow free drainage from its most dependent point, which is absolutely necessary in order to effect a cure.

Dr. E. L. Shurly, of Detroit: According to my experience, severe operations on the maxillary sinuses have not been found very often necessary. In the first place, the laryngologist sees fewer cases than the dentist or the general surgeon does. I have been somewhat astonished to know how frequently dentists with a large practice have opened up the maxillary sinus with a small drill through the alveolar space somewhere. Sometimes they drill through the canine fossa and inject the antrum a few times, and the patient recovers. I have also had a similar experience in a great many cases of disease of the maxillary sinus that followed ordinary influenza. When, on the other hand, we have disease of the maxillary sinus which depends upon some adventitious formation inside, then, of course, a thorough opening of that cavity and curetting are absolutely necessary. And it may be necessary sometimes where we suspect that a tumor is growing, but it has always seemed to me that in cases which are not complicated by marked disease of the nasal passages, we had better open the maxillary sinus through the alveolar process. The idea of injecting a cavity through the mouth is purely theoretical, and I believe we have no ground for assuming that the renewal of the disease is frequently caused by infection through the mouth. Opening through the nose by Krause's method not only is open to the objection mentioned, but there is in some of these cases, according to my experience, constant disease of the cavity kept up by drainage of the nose into the maxillary cavity. I should be inclined to believe with Dr. de Roaldes that after opening through the nasal walls into the maxillary cavity there should be a counter opening. I would not think of leaving a patient with one opening in the nose. We can not be sure of keeping the maxillary sinus patent so as to empty all of the secretions of the nose. Therefore, it seems to me, for general purposes it is quite sufficient, first, to make an opening in the old-fashioned way through the alveolar process, enlarging it, if necessary, from time to time, and second, to make an opening through the nose, while leaving also the opening in the alveolar process.

The only point I wish to make is that the average laryngologist rarely finds it necessary to make such extensive incisions into the maxillary sinuses.

Dr. G. Hudson Makuen, of Philadelphia: I should like to ask Dr. de Roaldes if he has observed what to me is a very curious fact—namely, that the law of gravity does not seem to hold good in draining the cavity of the maxillary antrum. You may make a good-sized opening through the anterior wall of this cavity at the most dependent part, or even through the alveolar process, and, if the normal opening into the nose is patent, the cavity will continue to drain uphill through this opening. There seems to be a capillary action going on in the drainage of this cavity which is increased by the respiratory processes through the nasal cavity.

Dr. G. A. Leland, of Boston: In the discussion of this subject we seem to have forgotten that man is not always an upright animal. He lies down sometimes, so that the outlet of the cavity looks downward, although he can not walk with his head wrong side up like a fly. This cavity was made by the great Architect to drain at the top, which is not true of any other cavity with bony walls in the body. We therefore must consider that there is in the normal state some agency which is capable of furnishing efficient drainage through this apparently unfavorably situated opening. This agency has been variously described as siphonage aided by the intranasal air currents, the action of the ciliated epithelia within this cavity, and the recumbent posture, but is probably a combination of all three factors. This leads us to think, in cases where there is no foreign body in the antrum, that drainage might often best be established through its normal opening—the hiatus semilunaris. I have operated in a few cases of empyema of the antrum through the inferior meatus, but have been able in most cases to establish free drainage normally through the second meatus, when the cases would run along for a year or two afterward and eventually end in recovery.

As to the operation, I believe Mikulicz first made a small opening through the inferior meatus in treating these cases, a method which has been much extended and elaborated with great success by Dr. H. A. Lothrop, of Boston; and while I was in Berlin, in 1893, I saw the operation through the canine fossa done several times by Jansen and Rosenberg—which operation seemed to be followed by much suffering and a tedious convalescence. The operation now known as the union operation, the Caldwell-Luc operation, seems to be an improvement over other methods of treating empyema of the antrum, and I am very glad to hear the added testimony of Dr. de Roaldes, as to its efficiency, supported by his brilliant results; and yet I can not but believe that there are many patients who will get well without such radical procedure.

Dr. de Roaldes: I will answer the first question put by Dr. Swain in regard to whether the lip was everted by means of an incision or simply retracted. In none of these operations were the tissues divided externally, while that was done in the first case of Dr. Luc's. He made an opening through the commissure of the lip in order to gain easier access and to put his suture in better position. After that he discarded this feature on account of the cicatrix. Ever since he has operated without any external incision, which he finds is not necessary. After a few operations one becomes familiar with this method of operating, and with good assistants the external incision is not necessary.

In regard to the other question, which was how long the gauze dressing was kept up, we generally dispensed with it from the eighth or tenth to the twelfth or fifteenth day. We found that the patient himself in the after-treatment was able to inject the antrum through the large opening in the nose. This change in the mode of dressing, which was a substitute for the original tube, is an important matter in the operation, and it is not very painful if the opening is large in the nose. The surgeon has to follow the patient for say ten days or more, and after that he can let him go. This is of great advantage in the after-treatment; it is successful even if you miss the patient for a week or two.

In answer to Dr. Swain's question with reference to hæmorrhage accompanying the turbinectomy, there is no question but that a turbinectomy is followed by a certain amount of hæmorrhage, which may be annoying, particularly if the practice advocated by Dundas Grant and Luc is followed of doing it in the early part of the operation. At that time, with a flow of blood into the postnasal space and the patient under chloroform, it is objectionable and interferes with the subsequent steps of the operation. In the last operation I advised postponing the turbinectomy until after the real operation had been done, which consisted in chiseling out the anterior wall and thoroughly scraping the cavity. The operation is practically finished after that, and the turbinectomy is performed, and by vigorously packing the cavity one will quickly arrest the hæmorrhage without much trouble. Then finish the operation by knocking down the internal wall, which does not then cause any bleeding.

With reference to the question of Dr. Ward as to whether this method is to be used generally, I distinctly stated that the operation was for chronic cases of empyema of the antrum. The operation is reserved for those chronic cases that are of long duration, that have resisted other treatment, such as the operation of drilling into the alveolar process, the Mikulicz operation, that of drilling into the canine fossa, etc., and cases which even resist the operation of Desault, which is an old operation. But the drawback to that operation, which is not to be compared with this, is the length of time it takes for the cavity to heal after thorough curetting. Then, too, we have a very large cavity which is liable to become reinfected by germs in the mouth, but more especially by the food that is introduced into the mouth and comes in contact with the antrum undergoing decomposition and acting as a foreign body. We all know it is necessary to protect the cavity in order to facilitate healing and the formation of a cicatrix.

Many of the cases treated by the Desault method have taken months and months, and sometimes years, before a cure was effected, and even then it was necessary to resort to other measures of treatment. I have very often found it necessary to perform secondary operations to scrape out the cavity, because, on account of the constant excitement and the stimulation of the parts by food and irritants, granulation tissue is stimulated and "proud flesh" forms. How many times, after the secondary operation of Desault, have surgeons had to scrape the antrum a second or third time, or use a strong solution of chloride of zinc or the galvano-cautery! We are all familiar with the objections to the method of Desault, or the operation of opening through the canine fossa. Those who have performed that operation will see the advantages of the Caldwell-Luc method and cut off communication between the mouth and antrum. They will find in the course of ten or fifteen days that there is very little or no suppuration. But certainly in the course of two weeks or a month the cavity is dried up and there is formed a tough cicatricial membrane, which is really a scar. It cicatrizes rapidly, very differently from the length of time it takes to cover itself with epithelium when it is constantly irritated by food or secretions from the mouth.

I did not hear enough of the remarks of Dr. Shurly to reply intelligently to them. Dr. Roe, I think, made an objection that certainly has some foundation. There is no question of the fact that the floor of the antral cavity and that of the nasal cavity, as has been demonstrated by Zuckerkandl, are not always to be found on the same level. That is why I have advocated in the paper knocking down the partition from within the antrum and against the finger, one finger being in the nose. This is a very important point. One or two operators, through a little carelessness, have found themselves almost opening the buccal cavity, instead of the nose, because they forgot the difference pointed out by the doctor. I must say that in all cases reported by Luc, thirty-two up to date, five of my own and several others, bringing the number up to about fifty in all, the difference between the two floors mentioned, which we are told exists, and which is pointed out by the best authorities to exist, has not been noted.

The advantages of the operation I have described are so obvious that I should like to have an expression of opinion from the gentlemen who have been attached to large clinics for a long time, and who see case after case of antral empyema that they have drilled into, cases in which they have injected through the ostium maxillare, and also cases in which the Mikulicz and other operations have been performed. I think there are objections to the continuation of those methods in the treatment of obstinate cases—cases which were the opprobrium of medicine until the Caldwell-Luc operation was devised and adopted. I would ask them whether the subacute cases yield many times to the ordinary drilling method and to other less serious operations than this one, and whether they have not found many of them extremely difficult at times to deal with so as to effect a cure. If that is the case, I hope they will try this method, assuring them that it is an excellent one, and one that will answer the purpose.

I have presented these observations and cases for the purpose of making a plea in favor of this operation, and I certainly think the verdict will be the same as I gave in this paper, and the one which has been given in Europe in the last fifteen months.

Dr. JOHN O. ROE, of Rochester: I should like to ask Dr. de Roaldes if it would not be a good idea, to avoid the hæmorrhage from the turbinectomy, to perform it in a few days in advance and allow the parts to heal before attempting the other operation.

Dr. DE ROALDES: The same question was raised at a meeting of the French society last year. It was practised in one or two operations, I think, but has since been discarded, because it is a double traumatism, and, while the whole thing can be accomplished in one operation and under one chloroformization, it does not prolong the operation very much, and with skilled assistants, I certainly think it is better to perform it at one sitting.

(*To be continued.*)

Book Notices.

Essentials of Anatomy, including the Anatomy of the Viscera. Arranged in the Form of Questions and Answers, prepared especially for Students of Medicine. By CHARLES B. NANCREDE, M. D., Professor of Surgery and Clinical Surgery in the University of Michigan, etc. Sixth Edition, thoroughly revised by FREDERICK J. BROCKWAY, M. D., Assistant Demonstrator of Anatomy, Columbia University, New York. Philadelphia: W. B. Saunders, 1899. Pp. 11 to 419. [Price, $1.]

THE rapid appearance of one edition after another of this little work is a sufficient evidence of its popularity. The arrangement of questions has been improved by a careful revision, some new matter has been added, and a number of the important illustrations have been enlarged. The sixth edition maintains the high standard already established by its predecessors.

A System of Medicine. By Many Writers. Edited by THOMAS CLIFFORD ALLBUTT, M. A., M. D., LL. D., F. R. C. P., F. R. S., F. L. S., F. S. A., Regius Professor of Physic in the University of Cambridge, etc. Volume VIII. Diseases of the Nervous System (continued). New York: The Macmillan Company, 1899. Pp. xii-3 to 937. [Price, $5.]

THE eighth volume of this remarkable *System* is devoted to diseases of the nervous system, and the completeness and the thoroughness with which the subjects are presented are unusual in a strictly medical work. As a matter of fact, such a treatise upon neurology as is contained in Volumes VII and VIII might be considered as exhaustive were it presented as a single work. Briefly to describe the contents of the volume before us, it may be said that the material has been grouped into sections which bear the titles Diffuse Diseases of the Spinal Cord, Limited Diseases of the Spinal Cord (naturally subdivided into scleroses and nuclear diseases), Diseases of the Brain, and Other Diseases of the Nervous System. The reviewer has found the same difficulty in commenting upon the chapters comprising this volume that he has had in the case of its predecessors; indeed, he frankly admits that he can find nothing to take exception to and everything to admire. Illustration has not been a feature of this work, and the pictures in the present volume are not numerous, but they are of very excellent quality. Two colored plates representing a drawing of a spinal ganglion in a case of combined sclerosis of the posterior and lateral columns and the base of the brain from a case of posterior basic meningitis, respectively, are of great beauty. It is pleasant to find the profession in America prominently represented in this volume; the articles upon caisson disease, upon syringomyelia, and upon acute anterior poliomyelitis are contributed by two prominent teachers of New York. As has been the case with the earlier volumes, the evenness of the chapters is a conspicuous attribute.

The Modern Treatment of Wounds. By John E. Summers, Jr., M. D., Surgeon-in-Chief to the Clarkson Memorial Hospital, etc. Omaha, Nebraska: The Medical Publishing Company, 1899. Pp. viii–149. [Price, $1.50.]

The first two chapters of this work are devoted to a short description of bacteria and their effects on wounds and to the proper methods of avoiding infection. The author in the next six chapters calls our attention to operative and accidental wounds, and all he says is both interesting and instructive. The last few chapters deal chiefly with the care of compound fractures and wounds of joints, concluding with the treatment of burns and frost-bites. The author has added a useful little volume to our literature.

An American Text-book of Surgery for Practitioners and Students. By Phineas S. Conner, M. D., Frederic S. Dennis, M. D., William W. Keen, M. D., Charles B. Nancrede, M. D., Roswell Park, M. D., Lewis S. Pilcher, M. D., Nicholas Senn, M. D., Francis J. Shepherd, M. D., Lewis A. Stimson, M. D., J. Collins Warren, M. D., and J. William White, M. D. Edited by William W. Keen, M. D., LL. D., and J. William White, M. D., Ph. D. Third Edition, thoroughly revised. Philadelphia: W. B. Saunders, 1899. Pp. xv–1228. [Price, $7.]

We are glad to welcome the third edition of this admirable volume, which in the past has deservedly found favor as a text-book in many of our medical colleges. The editors have classified the work as a text-book of surgery, their attention being chiefly directed toward the requirements of the student; they have, however, more than succeeded in their efforts, and have presented the surgeon and practitioner as well with a work easy of reference which contains most of the latest information of the day. It has become necessary to omit the chapters on the surgery of the eye and ear, found in the earlier editions, to make room for the new matter required to bring the book up to date. Among the topics added we find serum therapy, leucocytosis, postoperative insanity, the use of dry heat, Krönlein's method of locating the cerebral fissures, Hoffa's and Lorenz's operation for congenital dislocation of the hip, lumbar puncture, forcible reduction of the spine in Pott's disease, the treatment of exophthalmic goître, the surgery of typhoid fever, gastrectomy and other operations on the stomach, new methods of operating on the intestines, the use of Kelly's rectal speculum, the surgery of the ureter, Schleich's infiltration anæsthesia, the use of eucaine for local anæsthesia, Krause's method of skin-grafting, the newer methods of disinfecting the hands, and the use of gloves.

Special attention has been given to the revision of the sections on appendicular disease, fractures, and gynæcological operations. The addition of a number of new plates, including several in color, has improved the usefulness of the volume. The chapter on skiagraphy has been materially added to by Dr. C. L. Leonard. We have in the past heartily indorsed the former editions of this excellent work, and we can do the same for the present volume.

Notes on the Modern Treatment of Fractures. By John B. Roberts, A. M., M. D., Professor of Surgery in the Philadelphia Polyclinic, etc. With Thirty-nine Illustrations. New York: D. Appleton and Company, 1899. Pp. vi–162. [Price, $1.50.]

This work presents a number of papers written by the author at various times, and they represeint his views arrived at by a long experience with fractures in general.

The chapter on the fractures of the lower segment of the radius is especially attractive; in it the author calls attention to the importance of the complete reduction of the deformity which always follows the injury, giving the further treatment but a secondary place. We can hardly indorse the use of hooks in fractures of the patella or olecranon, and we do not think well of the alternative suggestion of dividing the tendons in order to obtain coaptation of the fragments. If operative interference is deemed advisable, we much prefer the direct exposure of the fracture, followed by suture or wiring. We find a strong leaning in favor of simplifying the treatment in fractures, which is to be commended; perhaps the plaster-of-Paris bandage should have been given a more prominent place.

This little volume will more than repay the reader for a careful study.

A Text-book of the Practice of Medicine. By James M. Anders, M. D., Ph. D., LL. D., Professor of the Practice of Medicine and of Clinical Medicine in the Medico-chirurgical College, Philadelphia, etc. Illustrated. Third Edition, revised. Philadelphia: W. B. Saunders, 1899. Pp. 1292. [Price, $5.50.]

A few additions and a moderate amount of revision characterize the third edition of this work as compared with the second. As we have said before, the book is an excellent one and especially to be commended because of the attention paid to diagnosis.

A Practical Treatise on Materia Medica and Therapeutics. By Roberts Bartholow, M. A., M. D., LL. D., Professor Emeritus of Materia Medica, General Therapeutics, and Hygiene in the Jefferson Medical College of Philadelphia, etc. Tenth edition, revised and enlarged. New York: D. Appleton and Company, 1899. Pp. xxii–866.

A standard work like the *Materia Medica and Therapeutics* of Professor Bartholow needs no introduction to our readers, and appreciative comment only can be made upon the appearance of its tenth edition. In this edition there have been added a number of articles upon the newer remedies, as well as one upon prescription writing. The latter might with advantage, we think, have been amplified. The valuable features of earlier editions have been preserved throughout the volume, and the work remains, as it has been since its first appearance, one of the best of the pharmacological class.

Like all the author's writings, this work has the charm that always attaches to a clear and forcible exposition of what the writer knows of his own knowledge.

A Text-book of Materia Medica, Therapeutics, and Pharmacology. By George Frank Butler, Ph. G., M. D., Professor of Materia Medica and Clinical Medicine in the College of Physicians and Surgeons, Medical Department of the University of Illinois, etc. Third Edition, thoroughly revised. Philadelphia: W. B. Saunders, 1899. Pp. 9 to 874. [Price, $4.]

The third edition of this work differs but little from the second. The revision and additions are all that the interval between the two editions has demanded, but that interval has been, to the author, flatteringly brief.

A Manual of Organic Materia Medica and Pharmacognosy. An Introduction to the Study of the Vegetable Kingdom and the Vegetable and Animal Drugs. Comprising the Botanical and Physical Characteristics, Source, Constituents, Pharmacopœial Preparations, Insects Injurious to Drugs, and Pharmacal Botany. By Lucius E. Sayre, B. S., Ph. M., Dean of the School of Pharmacy, etc. Second Edition, revised. With Histology and Microtechnique by William C. Stevens, Professor of Botany in the University of Kansas. With Three Hundred and Seventy-four Illustrations, the Majority of which are from Original Drawings. Philadelphia: P. Blakiston's Son & Co., 1899. Pp. xvii–17 to 684. [Price, $4.50.]

In our issue for June 15, 1895, we noticed the first edition of this admirable work and concluded by saying that it presented the subject of medical botany to the best advantage, and, while more necessary to the pharmacist than to the physician, included much that was of interest to medical men. The second edition is even more valuable to the pharmacist than the first one was, for the chapters upon elementary botany have given place to a presentation of plant histology and microtechnics, which, as the author points out, are recognized as more important in pharmacy than was formerly supposed. A number of changes of a minor importance are to be noticed in the volume before us, but its character as a whole is, fortunately, unaltered.

New Inventions, etc.

THE JAVAL-SCHIÖTZ OPHTHALMOMETER, MEYROWITZ MODEL, IMPROVED.

By Henry W. Wandless, M. D.,
NEW YORK.
INSTRUCTOR, UNIVERSITY AND BELLEVUE HOSPITAL MEDICAL COLLEGE; CLINICAL ASSISTANT, NEW YORK EYE AND EAR INFIRMARY; MEMBER OF THE NEW YORK COUNTY, NEW YORK STATE, NEW YORK UNIVERSITY, AND AMERICAN MEDICAL ASSOCIATIONS.

I consider the Meyrowitz model of the Javal-Schiötz instrument the most complete of anything of its kind that has yet been produced. The whole instrument has been so remodeled in every detail as to make it decidedly neat and handy. The previous models were awkward and clumsy compared with the quick and ready manipulation of this one. Former models lacked mechanical precision in detail, focusing, lateral, back, and forward movements.

The most valuable improvement of this model which is the subject of this paper, and also the one which interests me most, is the arrangement by which both mires are operated simultaneously from the back of the large dial and the amount of astigmatism estimated. It occurred to me that an arrangement could be put on the back of the large dial by which both mires could be operated, and the amount of astigmatism measured by a small disk or dial indexed to correspond with the measurements on the arc.

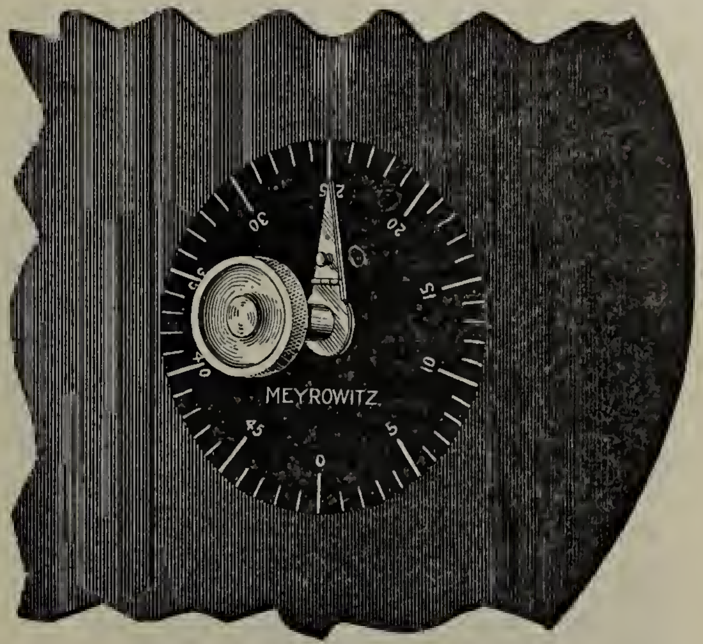

Fig. 1.

The convenience of such an arrangement was apparent, and I submitted my plan to the firm of E. B. Meyrowitz. They assured me that such an arrangement was feasible and proceeded to work it out. I left the matter entirely in their hands to perfect the detail, with the result of not only doing great credit to themselves, but the practical value of the ophthalmometer is greatly enhanced.

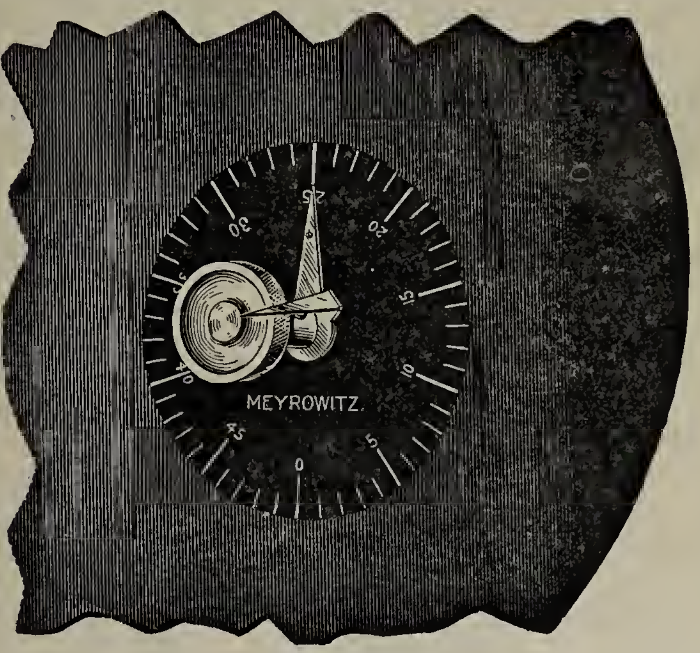

Fig. 2.

Some of the advantages of this improvement may be briefly summed up as follows:

1. The thumbscrew or nurled head for operating the mires in any meridian is always in easy reach of the operator.

2. The patient sees nothing of the movements of the operator, and his gaze therefore is not distracted from the end of the telescope, where it must be fixed intently.

3. You do not have to depend upon memory for recording the amount of astigmatism, often after the patient has moved.

4. By means of the small dial, which is indexed, and double pointers, the amount of astigmatism is accurately measured even to 0.12 of one dioptre.

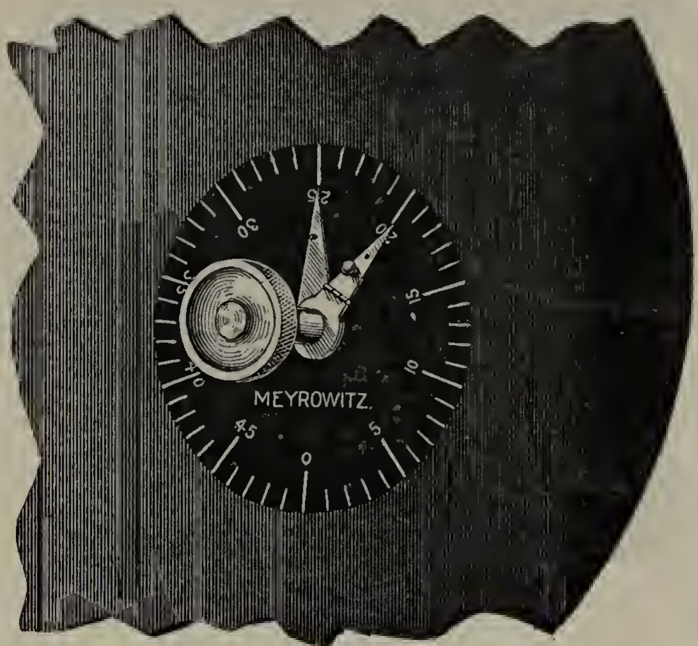

Fig. 3.

5. And, finally, when the patient's head is once properly adjusted, the observer need not move from his seat until both eyes have been examined and the result recorded.

It is not necessary that one mire should be made in steps representing dioptres of astigmatism. Two parallelograms would be quite as convenient, except, perhaps, in infirmary work, where a large number of patients must be disposed of in a comparatively short time; absolute accuracy is then out of the question.

The manipulation of this device is simple, and there is no guesswork as to the amount of astigmatism.

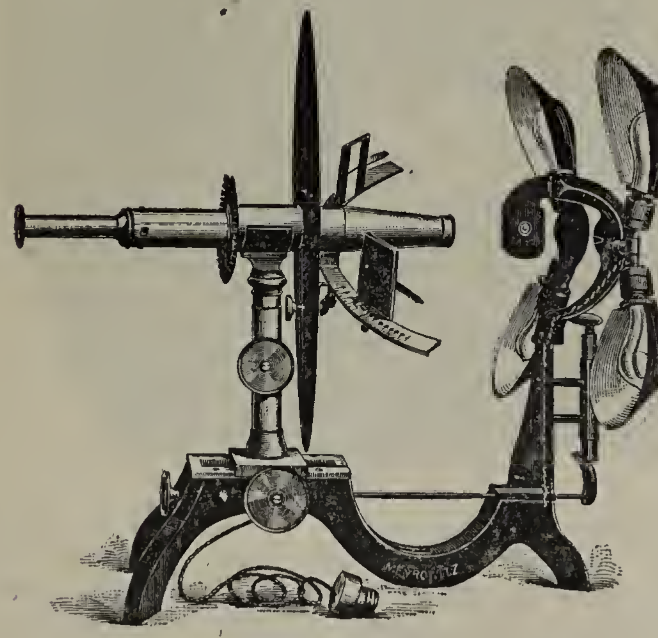

Fig. 4.

First, the two pointers must be placed one over the other (Fig. 1), so that both move together by turning the nurled head, in finding the primary position—that is, the edges of the two mires should touch each other, and the black line be continued. Having done this, the telescope is rotated ninety degrees, or at right angles to the primary position, and, if corneal astigmatism exists, the mires will either lap one over the other or be separated. The outside pointer is then turned back from the other so as to be released from it (Fig. 2). Now turn the nurled head in whichever direction will recoadapt the edges of the mires as in the primary position; then push the second pointer against the scale, and the difference between the two pointers (Fig. 3) will indicate in dioptres the exact amount of corneal astigmatism. Fig. 4 shows the entire instrument with this improvement attached to the back of the large dial.

But there are other improvements which the manufacturers have added to complete the model, and which I will mention briefly:

1. The instrument is permanently attached to a metal base.

2. The focusing adjustment is done by rack and pinion on a sliding table. This was formerly done by hand.

3. The perpendicular adjustment is also by rack and pinion attached to the upright post supporting the telescope.

4. The upright post is jointed for lateral adjustment.

5. The chin rest is adjusted from the back of the base by a milled head. The operator does not have to move to do this, as is the case in other models.

6. The eye shield is also operated from the back of base. Formerly, to change this, the operator had to get up, which generally meant the readjustment of the patient's head.

The beautiful mechanism of this instrument is due to the skill and ingenuity of Messrs. O. M. Meyrowitz and A. G. Elberg.

45 West Thirty-second Street.

Miscellany.

More Newspaper Medicine.—*Gaillard's Medical Journal* for December quotes the following exquisite specimen of newspaper sensationalism in medicine from a daily paper:

SAVED BY STRANDS OF SILK.

Wit and good surgery, aided by a strand of raw silk, saved the life of a two-year-old child. Dr. George B. Barney, of No. 397 Third Street, Brooklyn, was the physician who did the work; the child's name he refused to give.

It was a hurry call. Dr. Barney hastened to a house in Second Street, to find that a little girl had swallowed a big screw and was in terrible agony.

"This will kill the child," exclaimed the doctor, "if the screw reaches the intestines."

Heroic measures were all that could be taken now, when suddenly the doctor spied a dozen threads of raw silk. In an instant Dr. Barney made up his mind.

"Bread and milk," he cried to the frightened mother.

It was ready in a moment, but no more quickly than it had taken Dr. Barney to twist the silk together into a stout strand. One end of it he put into the bread and milk. Then it was fed to the child, who was forced to swallow an end of silk along with the food.

Then for fifteen minutes the silk was allowed to settle in the stomach, so as to give an opportunity to twist the free ends around the screw. Then Dr. Barney carefully pulled at the end of the silk that dangled from the child's mouth.

It resisted, and the child had an attack of nausea, which was just what Dr. Barney wanted. Another careful pull and he had the screw out, all entangled in the strands of silk. In another moment the hysterical mother was pressing her little one to her breast, as well as ever, while Dr. Barney was putting the screw away as a relic of a most remarkable piece of surgery.

Gratitude in the Transvaal.—The *Indian Medical Record* for November 22d asks:

"Who, among his many enemies, will accuse the Boer of ingratitude after they read the following notice of domestic occurrences which appears in the *Krugersdrop Sentinel*, an African newspaper:

"SMIT.—On the 28th instant, Amy Jane Mary Smit, eldest daughter of John and William Smit, aged 1 day 2½ hours.

"The bereaved and heart-broken parents beg to tender hearty thanks to Dr. Featon for his unremitting attention during the illness of the deceased and for the moderate brevity of his bill; also to Mrs. Williams for the loan of clean sheets, to Mrs. Jurgens for running to the doctor, and to Mr. Le Roux for recommending mustard plasters."

Parturition among the Eskimos.—Dr. C. C. Gleaves records in the *Pacific Medical Journal* for December his unusual good fortune in being permitted to be present during the confinement of an Eskimo woman. He says:

"It is the custom among the Eskimos not to be confined in an 'igloo,' or house. The woman must go into the woods or brush alone—no one, not even the husband, being allowed to be present—and remain there with no food except a piece of dried fish for 'five sleeps,' when she is permitted to return to the 'igloo'; no doubt, that being the time required for the lochial discharge to cease. Whereupon, she and her husband take a bath and change their undergarments, when they are fortunate enough to have a change. They are then supposed to be clean until the next confinement. At the time of the monthly periods of menstruation a woman is not allowed to enter a boat or ride upon a sled of her husband.

"In January, 1899, during the long winter nights after 'old Sol' had bid adieu to the people of northern Alaska, to seek a more genial clime in the sunny South, and in the midst of an arctic blizzard, a messenger, a little Eskimo boy, came to my 'igloo' and announced that 'Mama speak catchem mickaninny by and by,' 'speak' being a term in universal use. I arose from my bed, dressed myself in fur clothing, and started for the scene, a short distance away, the thermometer ranging from 30° to 40° F. below zero, where I found the woman out in the brush in a snow pit, oval in shape, about two feet deep and six feet across, with a few spruce boughs thrown around the margin as a windbreak, together with a smoky fire of twigs. The parturient chamber (?) had been prepared by the woman herself, by scattering a thin layer of dried grass prepared by her for this occasion, upon which was spread a reindeer skin, with no covering of any kind.

"On my arrival at the parturient field I found the woman in labor, on her knees, with buttocks resting on her heels, and having severe bearing-down pains, which came faster and faster and more severe until almost continuous, when the bag of waters ruptured. The mother of the woman and my interpreter, the little boy, who were near by, began to exclaim 'Mama muckey, mama muckey'—'muckey' meaning to die. I asked the boy what was the matter with mama; he said in reply 'Mama look see pechuck'—'pechuck' meaning no, or negative, or in other words, she could not see; her blindness, no doubt, being due to syncope. I assured them that mama would soon be all right, and not to be frightened. She soon rallied and labor progressed naturally through the second stage, and after an interval of a half to three quarters of an hour the pains returned. She again had syncope, no doubt due to hæmorrhage. She soon rallied again and expelled the placenta, whereupon she took a piece of sinew, which had been previously prepared from the hock of a caribou, and ligated the cord as close to the umbilicus as possible, then severed the cord close to the ligature with a piece of serrated flint. She washed the babe in snow, although it rebelled by kicking and squalling lustily at such a cold reception. Notwithstanding the rigorous conditions surrounding the Eskimo mother in childbirth, the rate of mortality of the babes born will agree favorably with our own death-rate, and the same may also be said of the mother. Nature moves in a mysterious manner to perform her miracles and reproduce herself.

"The woman wore a belt or a piece of thong to confine her 'parka' around the waist, and to it was fastened by short deerskin thongs bits of ivory, buttons, leather bags in which she kept tobacco, matches, and other small articles of value. After the snow bath she placed her babe underneath the folds of her 'parka,' which is the usual resting place of the young Eskimo (although sometimes astride the mother's neck), and proceeded in a bent-over position with staff in hand for support, stepping slowly and laboriously, leaving a trail of blood, to another snow pit about fifty feet away which had been prepared. She would not remain any length of time at the place where the babe was born, for it is considered unclean.

"Our own women think they have an awful time during confinement, and some of them do, but what a contrast between them and their Eskimo sisters! Just imagine for a moment one of our women confining herself alone and under such conditions!"

A Proposed Investigation of the Native Drug Plants of the United States.—It is gratifying to find that the secretary of agriculture, the Hon. James Wilson, favors such an investigation, as is shown by the following extract from his annual report:

"The collection of native drug plants in the United States, considered from a purely financial standpoint, aside from medical and humanitarian aspects, involves the expenditure of millions of dollars annually. The commercial extermination of some of the most useful species is already threatened, and doubtless others would be found in the same conditions were the facts known. The price of one native plant, gingseng, our exports of which average more than a million dollars annually, has more than quadrupled in the past thirty years, so that its cultivation, as urged four years ago by this department, has now become profitable. It is clear from this and many similar cases that the native drug industry is capable of either decline or improvement, according to the way in which we handle it.

"The Pan-American Medical Congress has recently submitted to me a proposition to co-operate with this department in a technical and statistical investigation and classification of our native drug plants. By accepting this proposal we shall secure, in a research of which we have long felt the need, the cordial assistance and support of an influential association of learned physicians; we shall encourage each of the other American nations, all of which are represented in the Pan-American Medical Congress, to proceed with a similar investigation of their own medical flora; we shall furnish a basis for the remunerative employment of much land and many people, and we shall stimulate the great growth and growing trade in drugs between the countries of North America and South America. I urge the appropriation of ten thousand dollars to enable this department to co-operate in this investigation."

The Problem of Housing the Poorer Classes.—The *British Medical Journal* for December 16th describes a system which is being tested in England. It says: "The fourth of a series of the 'Rowton Houses,' or 'Poor Man's Hotels,' has been opened. In 1893 the first of these establishments was opened at Vauxhall with 475 beds, a second in 1895 at King's Cross with 677 beds, a third in 1897 at Newington Butts with 805. The new building at Hammersmith contains 800 beds. Plans have been prepared for a fifth at Whitechapel with accommodation for over 800. These houses are the property of 'Rowton Houses, Limited,' and are intended exclusively for the use of males, who obtain all the advantages offered by the company for the sum of 6d." (about twelve cents and a half) "a night. A lodger can stop for one night or longer, payment being required in advance. Lord Rowton's object is to provide workingmen without a home with clean, comfortable houses, where good food and accommodation can be obtained at the smallest possible cost. These 'hotels,' however, have become so popular that they are now used by a class of people who earn more money than was the case when originally instituted. There are many who have to keep up a semblance of respectability with next to nothing to do it on—artisans, clerks, shop assistants, men who are looking for work, and those who have been in better positions in life. All these find a comfortable lodging, where cleanliness, order, and decency are strictly observed. The house at Hammersmith has a superficial area of forty-four thousand square feet, is built of red brick, and has been erected on a site within two hundred and fifty yards of Hammersmith station. There is a handsome entrance hall; opening off a corridor running from this is the smoking room, with tables and seats of teak for the accommodation of a hundred and sixty-four lodgers. Next door to the smoking room is the reading room, which provides for a hundred and seventy-six lodgers; here there are two bookcases, and books are lent on application to the superintendent. In addition to the number of seats provided a number of easy chairs are arranged round the large fireplaces. The walls of these rooms are decorated with pictures. On the opposite side of the corridor are the two dining rooms, in which seats are provided for four hundred and sixty-four men, besides numbers of easy chairs. There are four large cooking ranges, with ovens, hot plates, and grills placed well out of the line of traffic, where the lodgers can cook their own food should they desire to do so. Between the dining rooms is a large scullery, with access from both; it is fitted up with fire-clay sinks, hot and cold water, and sanitary pails for potato peelings and tea leaves. All the crockery, cooking utensils, teapots, etc., are free, and after use are collected by the company's officials and returned on a turntable to the catering scullery. Bath rooms, feet-washing rooms, dressing rooms, wash houses, where the lodgers can wash their own garments, barbers', shoemakers', and tailors' shops, a space for clothes and boot cleaning, and lavatories are also provided. There is also a spacious kitchen, larders, storerooms, etc., besides a sitting room and five bedrooms for the kitchen servants. On the floors above are the dormitories, lined on each side with a row of cubicles, and approached by three fireproof staircases. The disposition of the staircases renders it an impossibility for the lodgers to be trapped by fire in the event of an outbreak, as the cubicle corridors run from staircase to staircase, thereby leaving open a way for retreat should access to one staircase be blocked. At every twelfth cubicle there is a transverse partition carried right across the room from floor to ceiling, with a door in the centre, so that in the case of any infectious disease occurring the doors can be closed at both ends, and the intermediate space sealed and disinfected. The sanitary work has been well planned and carried out. Access is immediately obtainable to any portion underground, inspection manholes having been placed at every change in the direction of pipes and at all junctions. The water-closets and urinals are cut off from the main building by a cross-ventilated lobby. The seats of these water-closets are of solid teak and can not be raised; this is a mistake, as all seats should be freely movable, especially when in constant use by eight hundred people of all kinds, sorts, and conditions. This is the only fault to be found in the whole establishment, which is a model of care and forethought. Sixpence covers everything—bed, bath, books, fire, light, and the use of cooking utensils. It may be added that not only have the philanthropic aims of those connected with 'Rowton House, Limited,' been amply justified, but that the company is a sound commercial success."

The Investigation of Leprosy in Crete.—According to the *British Medical Journal* for December 16th, Prince George of Greece, commissioner-general of Crete, has invited Dr. E. Ehlers, a Danish physician who some years ago investigated leprosy in Iceland, to undertake a similar mission in Crete. It is estimated that there are from two thousand to three thousand lepers on the island. Dr. Ehlers will accordingly visit Crete this winter, and his inquiry will probably be extended over three or four months.

Another Medical Martyr to Plague.—The *Boston Medical and Surgical Journal* for December 21st says it is reported that Dr. Vital Brazil, a bacteriologist of San Paulo, has contracted plague while attending patients in the hospital at Santos.

An Operation on Yvette Guilbert.—According to the *Gazette médicale de Paris* for December 2, 1899, the well-known singer Yvette Guilbert underwent nephrectomy on November 24th at the hands of Dr. Albarran, on the recommendation of Professor Guyon. According to the *Figaro*, the volatile singer described the operation as follows: "It is a most simple operation. They open in your loin a buttonhole large enough to remove the diseased and already useless kidney through. They sew you up, and that's all there is to it. I shall only have one kidney when I sing in February at the Folies-Bergères. It will be one attraction the more. That's all."

Original Communications.

THE PRESIDENT'S ADDRESS BEFORE THE SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.*

By CHARLES E. QUIMBY, M. D.

GENTLEMEN OF THE SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL: No man who strives to be just to himself can bear the title of president, by whomsoever conferred, nor can he enter upon the duties of that office, without interrogating most critically the circumstances under which such position was obtained, whereby alone it is possible for him to learn how he may most satisfactorily and efficiently perform his official functions. In this society the technical election of officers is purely formal, while their actual selection is intrusted to a special committee. To one who is dominated by amblyopic enthusiasm for universal suffrage this may seem unwise or even dangerous; but surely to those who hold office under such a method, whether wise or not, it implies special obligations as well as special honor. So I dare hope that the above indicated recognition of methods will give forceful significance to the stereotyped phrases in which, perforce, I express to you my appreciation of that honor and my acceptance of those obligations, and may excuse my asking your attention to a consideration of the most important yet largely ignored factor of medical science, to the end that we may obtain some conclusions suggesting possibilities for enhancing the value of our winter's work; therefore—

First, gentlemen, I tender you my sincere thanks for the honor I have in being your president, and promise you that, to the best of my ability, the duties of this office shall be administered for the upbuilding and highest good of our society, with but one condition, that on your part speech and action shall correspond.

Secondly, I beg leave to consider a subject which may be comprehended broadly under the title The Mathematics of Medical Science, in which mathematics is understood to be, as so beautifully defined by the late Professor Pierce, of Harvard, "the science which draws necessary conclusions"; or, in more common terms, the process of logical analysis and demonstration.

The superficial professional as well as the common lay critic has never ceased to iterate and reiterate the statement that medicine is not an exact science; and we are forced to admit that there is apparent justification for the accusation. We have shown on a previous occasion to what extent our most honored and representative authorities proclaim the absence of mathematical accuracy in medical science by their contradictions.

Yet, although medicine seems not to have made advance toward scientific accuracy in its practical application commensurate with its discoveries of physical truth, let us seek the cause with perfect faith that medicine must some day wear the crown as King of Sciences, for, although

"God hath his mysteries of life,
  Ways that we can not tell,
And hides them deep, like the secret sleep
  Of him he loved so well";
Yet still we know the selfsame power
  That calms the planet's strife
Hath fixed the laws, itself the cause,
  Which rule all sentient life.

We propose to show that the cause is largely neglect of the mathematical or logical factor of medical science.

Every science is the product of two equally important yet radically different factors.

First, the determination of included and related, but unclassified, physical facts; and,

Second, the intellectual valuation of such facts and their involved relations for the recognition of consequent necessary conclusions, which, in expression, become formulated scientific laws.

This latter is the mathematical factor in the product science, without which the practice of medicine becomes either empirical guesswork or, still worse, haphazard mimicry with all the chances in favor of error. This factor alone admits of absolute accuracy and certainty. Our eyes and our ears may deceive us, but our reason need not and should not. If, then, our facts are true and mentipulated (if I may coin a word of more accurate expression than manipulated) according to the laws of mathematics for the production of necessary conclusions—*i. e.*, conclusions so plain that no properly equipped mind can deny them—such conclusions will be unchangeable and without contradiction. In permanency lies the absolute and final test of truthfulness.

The developments of the last quarter century in methods of medical investigation have been so prolific in their fruitage of new facts as to give to such facts undue importance. Their very abundance and rapidity of production, together with a most seductive air of potential value and a mask of relational simplicity, have inveigled and hustled the medical world into inconsiderate acceptance of the position that clinically applicable conclusions must follow with equal rapidity and simplicity. And this despite the fact that the pathway of medical science is strewn with the bleaching bones of once accepted beliefs, which perished long before they reached the age of puberty.

Before considering the specific errors of medical mathematics we must refer to some objective forces which exercise a most baneful influence on scientific work. The first is found in such eagerness to acquire knowledge as renders us oblivious to the fact that knowledge includes consciousness of ignorance. Anything affirmative, however uncertain, vague, or questionable, has seemed so far preferable to negation that we have almost ceased to consider, much less question, the accuracy of any affirmation. The effects of such a mental state have been not only obscured but intensified by a second error which we formulate as "reverence for authority." There are few things more insidiously destructive of medical science than the unquestioning acceptance of personal authority as establishing scientific principles.

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* Read before the Society of Alumni of Bellevue Hospital, October 4, 1899.

One can not fail to be startled, in reading any current work on medicine, at seeing to what large degree affirmations are based on personal opinion and how seldom on logical demonstration of their truthfulness.

We hasten to disclaim any lack of respect for the opinions of experienced men. The statement is made solely to call attention to the importance of making and maintaining a sharp distinction between mathematically demonstrated truth and dogmatic assertion of personal opinion, and to show how unfortunate is our position when we attribute equal value to knowledge from each of these sources.

More closely associated with the logical process *per se* are one or two comprehensive errors. The first and most serious is failure to stick to the proposition in hand, which renders impossible progressive demonstration. It is seldom that any conclusion which is the ultimate object of a given demonstration can be attained by a single syllogism. Hence, divergence from the consecutive steps of the argument and the interpolation of associated propositions, whether they are legitimate corollaries or not, break the line of argument and obscure, and eventually exclude permanently, the original objective proposition.

A second fundamental error in methods is the careless use of indefinite terms, or the unwarranted interpretation of such as have a reasonably distinct significance. While this error appears in both the author and opponent of an argument, it is hardly fair to place the blame upon individuals. The fault is more comprehensive, and is found in our shameful neglect of definitions, whereby we no longer have any definite terms. While it is usually associated with, and indeed is often the cause of, the first, it is the more subtle and dangerous, because so apt to affect otherwise logical minds.

Turning now to specific errors of the logical process, we venture the analysis of an article which furnishes gross illustrations of every major error, in the hope that while emphasizing the points under consideration we may also do something to counteract the effects of the article cited.

The article referred to is one which claims to demonstrate the existence of defined foci of tubercular infection and the exclusive conditions determining the development of phthisis. It is based on a map of a certain section of the city of Philadelphia, showing the location of all deaths from phthisis and other tuberculous diseases within that area during a period of twenty-five years. The argument is thus stated in summary:

"It is seen," says the author, referring to the map, "that of the infected houses scarcely ten per cent. are isolated—*i. e.*, standing by themselves, or rather not having an infected house next to them. About thirty-three per cent. of the infected houses, moreover, have had more than one case. *These two facts alone seem to warrant the conclusion that consumption is never contracted except by contact, by association, or by living in close proximity.*"

Now, without questioning, for the time being, the truth of this conclusion as an isolated proposition, we do not hesitate to say that as a conclusion representing mental comparison of necessarily involved premises and a consequent logical deduction it is absolutely inconceivable.

Of the several major logical errors falsification in premises comes first, and we consider—

(*a*) False interpretation of facts. In the article referred to this is most perfectly illustrated by the fundamental assumed postulate. The facts as given by the map are that death from tuberculosis occurred in certain houses. "But," says the author, "it is seen that of the *infected* houses, etc."; wherein he assumes that a single case of tuberculosis in any house is conclusive proof not only of its origin from a preexistent infectious focus in such house, but also of its production of that focus.

Ridiculous as this appears, when plainly stated, the fact that the author finds more than one case in only one third of the houses, even in twenty-five years, makes it evident that he bases his conclusion upon single-case houses in part, and reveals the glaring falsity of his assumption that death from tuberculosis is the equivalent of local infection of the place where death occurred. This same error becomes even more obvious when we pass to the question of dispersion of infection. "But ten per cent.," he says, "of the infected houses are isolated—*i. e.*, not having an infected house adjacent," and then, having previously assumed each case of death to be proof of *local* infection, he at once transforms such cases into proofs of dispersion of infection. The absurdity of this is made more prominent when it is applied to those sets of adjoining houses which consist solely of single-case houses. But its falsity is sufficiently plain for sets of single- and multiple-case houses when nothing is known of the order in which such cases were recorded. A critical examination of the map upon which the quoted statements are based reveals a more serious form of error.

(*b*) Falsification of facts through the assumption that all cases having a single point of superficial similarity are equivalent in every respect. On this map are recorded deaths from, first, tuberculosis (location not stated); second, tuberculous meningitis; third, tuberculosis of liver; fourth, tuberculosis of intestines; fifth, tuberculosis of larynx; sixth, abscess of lung; seventh, pulmonary hæmorrhage; eighth, phthisis. And the author's percentages are evidently made upon the basis of potential equality for all these diseases, although his conclusion concerns phthisis alone. The element of falsification here is obvious, but it may be made more impressive by the percentages when cases of phthisis alone are considered. If we add pulmonary hæmorrhage and laryngeal cases as also reasonable indices of local infection, the isolation percentages vary only in the third decimal from those for phthisis. Upon this basis, instead of only ten per cent. of houses being isolated, there are forty per cent. non-adjacent, unless one counts back-yard adjacency, as the author must have done to obtain his figures. Moreover, both of these percentages are essentially false until modified by other revealed relations which have been ignored. For, if adjacency proves dispersion of infection, the several sets of infected houses should show, after twenty-five years, some suggestion of equality in infective power. Yet we find that the four hundred and ninety-five houses showing phthisis counted as adjacent are not only scattered in a hundred and sixty-four sets, thus giving an average of only three in a set, but many sets (I should say over one third) are composed solely of single-case houses, and hardly a single set is without one or more single-case houses, while ten out of the thirteen sets showing large-number houses (six to thirteen) have a single-case house either adjacent to or between the multiple-case houses. Still further, such statistics as the above can be interpreted as proof of local infection, or dispersion of infection, only when they are reasonably uniform for the included area. And we call attention to the fact that in the article quoted no reference is made to the proportion of non-infected houses. Applying this to the case in hand, if we divide the given area into four sections by the two streets crossing nearest the centre, we have these figures: In section one, which contains Independence and Washington Squares, there are 332 houses, of which only 79, or 23.8 per cent., are infected, single-case houses now being included. Of these, less than half are adjacent; they are scattered in twelve sets, and only four houses in the entire section show over two cases—three having three cases each and one having four cases. In section two the figures are equally significant. Here there are 650 houses, with only 91, or fourteen per cent., infected. Here, too, less than half (44) are adjacent, and these are in nineteen sets, or about two and a half to a set. Yet this area offers the strongest proof of any part of the map in favor of local foci, for, despite the small number of infected houses, there are nine showing over two cases, of which one has the largest number (13) in the entire area. But, alas for the theory of infectious dispersion, that house has on one side a single-case house, and on the other a pure and sanctified abode which knoweth not the bacillus. When we cross Spruce Street we come to an obviously different class of dwellings. Section three (directly across from section two) has 945 houses, with 293, or 31.6 per cent., infected. Here the adjacency percentage runs up to 52.5. While numerical necessity, quite as reasonably as dispersion, may account for this percentage, the conclusion as to dispersion here finds distinct refutation, for in this highly infected section we find single-case houses between or adjacent to large-number houses in almost every set of adjoining houses. Section four shows the same thing even more strongly. With almost exactly the same number of houses (940), and 363, or 38.6 per cent., showing infection, with an adjacency percentage of 70.3, the same relation between single and multiple-case houses is apparent.

These figures, widely as they differ from those of the article in question, show the modifying effects of only two errors in premises—first, the assumption of potential equality for all tubercular diseases as a source of infection; and, second, the use of combined statistics derived from dissimilar sources. Yet, before even these figures can be used as a basis for conclusions of such serious import, they must suffer still further curtailment.

The whole theory of defined infective foci, as here presented, involves, of necessity, the admission that such foci originate in some primary case of tuberculosis. A single death from phthisis in any given house, therefore, can not, at best, be regarded as anything more than the *cause* of local infection; for only by assuming the truth of that very proposition which is one objective point of the whole demonstration can such cases be claimed as the result and evidence of previous local infection. Both a cause for and a result of such infection must be shown before its location can be claimed as proved. This demands at least two cases in a house. Hence, all single-case houses must be excluded from figures which are to be used in support of local infection. With those gone, let us see what remains. For half of the area (sections one and two), out of 170 houses previously counted as infected, we have left 48, a little over twenty-eight per cent., and not quite five per cent. of all the houses in the two sections. Of these, only 13, or 7.7 per cent., gave over two cases. Even in the other two sections, of such plainly different character, of 656 infected houses there remain but 218, or 33.2 per cent., of which considerably over half show only two cases. Now, I do not hesitate to state that the statistics given in the article cited are shown by the above analysis to contain so many factors of falsity as to render them utterly valueless as the basis of any absolute conclusions regarding single ætical factors of phthisis. The only definite conclusion warranted is the most general one, that the points of impact of that complex of forces which produce phthisis are in individuals who tend to gather in certain localities.

We next examine the premises (admitting them to be true for the moment) as illustrating (*c*) falsification by omission.

But two postulates are given; yet, in order to afford the least semblance of justification for the conclusion, the following unexpressed, ignored, unproved, and untrue propositions must be assumed:

First. The tubercle bacillus is the sole, unassociated, unmodified, and all-sufficient cause of phthisis.

Second. All individuals are equally susceptible to its invasion and development.

Third. All the persons dying of phthisis in the given area had been, through their entire life precedent to entering that area, and were, while absent from their homes when residents of said area, exposed to exactly the same chances for infection as those individuals living in the houses within that section in which phthisis did not occur. Three propositions which are so impossible as to be absurd. Yet without their inclusion as postulates by implication the conclusion offered so far loses all visible connection with those expressed as not even to suggest its dependence upon a logical process.

Having indulged in negation, we turn to affirmation and ask, What proof can be found in this map for the position that local infective foci had little or nothing to do with the cases recorded?

First. It is admitted that the tubercle bacillus is the *sine qua non* or *exciting* cause of phthisis.

Second. It is equally true and unquestioned that vital resistance, as determined by heredity, food, occupation, habits of life, and especially place of abode, is an important factor in determining the development of phthisis.

Third. All the conditions tending to lowered resistance are the common and inevitable associates of poverty. The good or bad character of any house, as measured by its influence upon the vitality of its occupants, varies directly with the rent. The worse the house, the lower the rent; the lower the rent, the more attractive it becomes to poverty. The character of any given house, as thus defined by rent, therefore defines the physical character of its tenants, not only when they enter, but even more after prolonged residence. Any house which has once attracted persons with vitality weakened by reason of poverty will continue to do so, and hence, will maintain a supply of subjects favorable for the development of phthisis.

These well-known and accepted relations between vitality, poverty, and rent, which can not be ignored, make it evident that any conclusions regarding the force of local infective foci in tuberculous diseases must be based on comparative statistics from reasonably dissimilar areas as regards hygienic conditions. Now, when the area in question is divided into sections, simply crossing the street takes us from a highly infected area (section four) into one comparatively free (section one). The former section is composed entirely of closely crowded houses, while the latter contains two large public squares, and may fairly be assumed as of a higher rent grade. Essentially the same relations hold for sections three and two. In the light of these facts, in connection with the figures given above for these several sections, rent and poverty appear quite as probably the determining factors of the high death-rate in sections three and four.

Again, from the same premises, if local infection was the origin of every case, with a constant supply of favorable material, in twenty-five years its influence should be unquestionably shown in numbers. Yet, in the worst section (No. 4) only a little over one third of the houses could show the two cases necessary to prove local infection; while for the entire area this proportion was much less, and the average only one case in eight years and four months. That the Philadelphia bacillus, at least, is still true to Philadelphia's reputation, we grant is a mathematical conclusion.

Adding one other premise, we say:

Sixth. The character of an individual's residence is a fair index of his occupation, and tenants of cheap rooms are generally employed in occupations not only especially depressing to vitality but offering the largest chances for infection, to which they are exposed for at least one third of the time. This fact alone introduces such an element of uncertainty as not only renders any conclusion impossible as to the source of infection, but, even admitting that infection is the sole ætical factor, but makes absurd the contention that the place of death, in such a disease as phthisis, is conclusive proof of the source of infection. We beg indulgence for one final argument, and say—

First. If phthisis depends, as is universally admitted, upon the two factors of infection and resistance, the source of the former in defined foci, and its dominant force will be most plainly and conclusively shown by the location and numerical relations of tuberculous cases in that class of individual where resistance has not suffered modification by objective forces, but is as nearly uniform as is possible—that is, in children.

Second. Even in this class, children born in infected houses may properly be assumed, if not to have phthisical parents, at least to be somewhat handicapped by lower inherited resistance, and greater chances of exposure to infection, as compared with children born or living in non-infected houses and areas. Hence, tuberculous disease in children should manifest at least as great preponderance at infective foci as appears in adults.

Third. Phthisis is admittedly a disease of adults in whom resistance has suffered modification, while tuberculous meningitis is very largely confined to children. Those two diseases, therefore, may fairly be taken as the most accurate indices of the relative force of local infection and vital resistance in localizing deaths from tuberculosis.

On examination of the map (my count may not be absolutely correct, owing to blurs, but is certainly not far enough in error to affect the argument) it is found that of thirty-four cases of tuberculous meningitis recorded, only fifteen were in houses with phthisis, and *in no instance* were there two cases in any one house, while nineteen were in houses that gave no death from phthisis. Of these nineteen, three were with pulmonary hæmorrhage, one with tuberculosis of liver, while twelve, or over thirty-five per cent., were in houses otherwise free from any assumable infection.

Gentlemen, I will not formulate our conclusion. Let me rather make symmetrical my argument by asking you—*not,* Is tuberculosis a contagious disease? *not,* What do you believe as to its contagiousness? but simply this, Which conclusion is made *necessary* by such full exposition of both the facts and their multiple relations: that "consumption is never contracted, except by contact, by association, or by living in close proximity," with its legitimate corollary of defined foci of infection; or, that the dominant factor in the development of tuberculous disease is vital resistance, while the tubercle bacillus is omnipresent? We can not doubt what your reply will be.

It is less easy to express or illustrate the other side of our subject, for the intellectual appreciation of the modifying and mutually controlling relations of established facts is a very subtle process. Time forbids more than the mention of a few serious errors.

That of accepting the *post hoc* as the *propter hoc* is too familiar to require consideration. A more deceptive error is the expansion of a limited conclusion from specific conditions to general application for all cases presenting the major premises.

Essentially the same error is the primary expression of comprehensive conclusions as general laws when the premises justify only conclusions within specific limitations. This was well illustrated some time since in a paper on the treatment of phthisis. The premises were: First, a series of cases of well-developed phthisis treated by lavage of the colon. Second, results in all, recovery. Hence, this conclusion in general terms: Lavage of the colon is a specific for all cases of phthisis. The observations in this case are of the utmost value, and in association with other accepted facts justify, as a conclusion, the widely applicable and most important truth that removal of one of the antagonistic forces in disease often turns the tide of battle in Nature's favor. But in the form presented the conclusion is absurdly false.

A third common error is the assertion of the most probable among several suggested but only half-proved conclusions. Such conclusions are usually supported by that ostrichlike trick of ignorance, the question, If that is not the just conclusion, what is? There is probably no more seductive logical misdemeanor than this, or one which so frequently escapes arrest. The mental defect is in failure to recognize the limitations of logical possibilities, to appreciate that it is quite as important for us to realize what we do not as what we do know, and to comprehend the full meaning of the saying that "he who does not know what he does not know can never be sure that he knows what he does know."

In an expanded form the foregoing error appears as the assumption that a legitimate but limited deduction invalidates or justifies all other conclusions from parallel lines of reasoning, whereby the author of an argument is made to deny or accept the truth of all correlative demonstration bearing upon the same general points. This is illustrated broadly by the thousand and one defenses of limited methods of treatment of certain diseases, wherein the author tacitly assumes that all other methods are wrong or valueless. How often do we find ourselves saying "the climatic, dietetic, or sanitarium treatment of phthisis," instead of "diet, climate, or sanitaria in the treatment of phthisis"!

Finally, we come to the incomprehensible error of drawing conclusions from enthusiasm and sentiment without regard to their relations to the postulates given. Despite the seeming impossibility, such logical delirium is not infrequent.

Before passing to our practical suggestions, I beg that you will not assume from the foregoing that I consider all medical reasoning false. On the contrary, it is because so much of it is good that I have essayed to point out dangers, in the hope that we may the more surely avoid them, and so make our own work still better. To this end permit me to say: Since the first element of accuracy is definiteness, I suggest:

First, that the author of any paper shall furnish the secretary, at least one week before his paper is read, an abstract stating the specific propositions which he proposes to establish, with headings of the arguments by which they are supported.

Second, that copies of this abstract be furnished the gentlemen who undertake to discuss the paper, and that they also present their direct discussion in manuscript. While this alone will tend somewhat to bring questions to definite decision, there will likely still remain unsettled differences. It is at just this point, it seems to me, we make one of our greatest mistakes.

Discussions which are simply talking back, and end with nothing settled, are, to quote from *Punch,* "worse than wicked—they are vulgar." We may well take a hint from our legal brethren on this point. Left to themselves, men are almost sure to evade the important point, and even more surely will not confess errors. Hence, the lawyer, when seeking to make a point, gets his opponent where he can direct the line of thought, and make sure of exposing errors and revealing the truth. Since this is our desire as well, I suggest,

Third, that following the written discussion the author of the paper shall be put on the stand, and each of the discussers allowed a certain time for cross-questioning, under which the author shall be limited strictly to answering questions, but that in closing the discussion he shall have the same opportunity to question his critics.

Fourth, that the result of such discussion may be definitely formulated, that at each meeting there be appointed a judge, who shall have authority to hold the disputants to their argument, and a jury of three or more, who shall, at the end of the discussion, decide whether the author has maintained his position or not.

In connection with the presentation of cases and specimens, I request that gentlemen notify the secretary as early as possible of their readiness, stating the nature of the case, and leaving the date of presentation to the committee on science, in order that the several contributions to each meeting may be as closely related as possible.

I am well aware that such a course implies work, but this society is of too high a character to be content with anything short of the best and most perfect results.

In conclusion, then, let me say in all sincerity, whether my suggestions meet your approval or not, I am equally your servant. This one thing alone I shall expect as my compensation, that we carry through whatsoever we undertake.

Gentlemen, I await your pleasure.

TAKING COLD.*

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Probably no other exciting cause of disease is so important, if we consider the various channels through which it travels, the many results, and the gravity of those results, as that known under the phrase "taking cold." The wonder is that it has received so little attention toward its ultimate solution, since it "has ever been a phenomenon of such frequent occurrence that it could not escape the observation of the least curious."

Without going fully into the literature of the subject, I shall refer only to a few of the more recent explanations of "taking cold" and of special susceptibility to "colds." The essential disagreements between these explanations is the reason for the somewhat liberal quotations in this paper.

What is a "cold"? It is a derangement of the vasomotor nervous system and the nutritive process, producing a disturbance of the temperature of the body, with general malaise. The attending phenomena are coryza, ocular irritation, a sense of heat and pain in the head, facial and other neuralgias, earache, sore throat—pharyngeal and laryngeal—bronchitis, often with pneumonia, cystitis, rheumatism, suppressed menstruation, etc.

The cause, according to Rosenthal, is the action of cold on the surface of the body, exciting contraction in the peripheral vessels, by which the blood is driven from the surface in upon the internal organs and acts there as an irritant, producing inflammation.*

According to Seitz, the cause is "the removal of heat to an unusual extent from the external or internal surface of the body; that this causes some functional disturbance, which in its turn gives rise to certain morbid processes in some portion of the body far removed from the part immediately affected by the cold. That the morbid changes are not due to the immediate or direct effect of this exposure is evident from the fact that, as a rule, a certain length of time elapses before these changes set in." †

According to Seiler,‡ "It is a well-known fact that the human organism must be maintained under all circumstances at a temperature equal to 98° F., otherwise disease will result. . . . The maintenance of the normal temperature of the body, therefore, depends upon the production of heat by the oxidation of food within the system, by muscular exercise, and upon the prevention, or at least reduction, of radiation; and a lowering of this temperature, especially if it be sudden, causes contraction of the capillaries in the outer integuments, a disturbance of the heart's action, and a congestion of some of the internal organs, and particularly of the mucous membrane of the respiratory tract. . . . In connection with, and perhaps caused by, this contraction of the capillaries of the skin by cold there is always an irritation of the distal nerve ends, which, by reflex action, produces a change of the heart's action, which, in turn, becomes a factor in the production of the congestion in other portions of the body. . . . Catching cold may then be defined as a momentary lowering of the temperature of the body by external influences, which causes both directly and indirectly an uneven distribution of the blood, and thereby a congestion or inflammation of internal organs."

According to Bosworth,# "the true action of cold upon the body, in producing morbid conditions, is probably on these nutritive changes which are constantly going on, and by which the animal heat is developed. This heat production is going on in all of the tissues of the body. In order that this function shall not be impaired, it is necessary that the normal temperature shall be maintained. This we know is $98\frac{3}{5}$° F. Any marked deviation from this normal standard, as the result of extraneous influences, results in morbid changes. Molecular death follows intense cold (freezing). If the action of the cold is insufficient to arrest nutritive processes of the parts, it may cause only inflammatory action. In these cases we have only the direct action of a low temperature on the organism. In the ordinary phenomena of 'taking cold' we have still the results of a low temperature acting on the heat-producing processes, but in an indirect manner. The direct action of a cold is, as a rule, upon the surface of the body, but the resultant morbid condition is upon some organ remote from the exposed part. In both cases, however, the cause and the effect are the same, and the connection between the exposure and the resultant inflammatory condition is the disturbance of those nutritive changes in the tissues which result in the production of animal heat. . . . The nutritive processes going on in the whole economy are governed by the central nervous system, and, furthermore, a certain amount of nervous force is expended in the regulation of these nutritive processes. If, as the result of the exposure to cold, these nutritive changes are arrested in a certain portion of the body, the same nervous force being sent out from the central nervous system, it will be understood how this local arrest of the nutritive process in one portion would be attended with a certain amount of increased nutritive activity in another portion, the activity of the nerve centres going on as before. Now, increased nutritive activity constitutes inflammation, and this inflammation locates itself at the point of least resistance—viz., as a rule, at the point in the economy where a mild chronic inflammatory process is going on, which is lighted up into an acute process as the result of a cold." Bosworth further states that "there are three factors generally necessary for the production of a cold: low temperature, air in motion, and moisture," and that, "as a rule, one or more of these factors should act for a somewhat prolonged time." *

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* Read before the American Laryngological Association at its twenty-first annual congress.

* Bosworth. *Diseases of the Nose and Throat*, 1889.

† *Ibid.*

‡ *Diseases of the Throat*, 1889, p. 154 *et seq.*

# *Diseases of the Nose and Throat*, 1889.

According to Woakes,† "the mechanism of taking cold" is that "some portion of the body is exposed to a current of air colder and moister than that of the average surrounding atmosphere, and that this exposure be prolonged for a considerable period. In this way the surface temperature is lowered generally, or some part of it is thus reduced below the normal standpoint. . . . In either case this prolonged lowering of the temperature, or abstraction of heat, is appreciated as a shock by the peripheral sympathetic nerves of the skin which receive it. These being, as already shown, afferent in their conductive function, convey the impression to their respective ganglia.

"The next step in this investigation concerns the consequence of the transference of the shock from the ganglia in an efferent direction—*i. e.*, along the vasomotor nerves to the muscular coats of the arteries. The totality of evidence goes to show that the immediate effect of such reflex impression is to cause contraction of the vessels. This is of very short duration; it is rapidly followed by one of prolonged dilatation, the effect being most manifest in peripheral portions of the circulation—*i. e.*, the arterioles and capillaries of the particular vessels implicated. This fact reduces the area where symptoms are exhibited to considerably smaller dimensions than would otherwise be the case, leading us to look for these in a limited number of tissues. It is a matter of observation, furthermore, that some efferent nerves of a given ganglion are more prone to carry off the impression than others, perhaps from already having been the scene of a similar irruption or from an inherent weakness of the ganglionic cells which regulate the action of these particular nerves. Again, some structures, as muscle and areolar tissues, etc., are so undemonstrative of the presence of hyperæmia, either by sensation appreciable to the patient or to the physician by the display of the objective states, that they will usually escape notice in the summary of symptoms attending the stage of vessel dilatation. It comes to pass, therefore, that when we have to observe these phenomena in the sphere of the superior cervical ganglia they will be discernible chiefly in those vessels which ramify in tissues having a free surface, as mucous membrane."

Thus we see that these various authors find that external influences, chief among which is cold, impress the external surface more or less; that the impression is conveyed to the internal organism, and that therefrom results nutritional disturbance, expressed in congestion, inflammation, etc.

How do disturbances of the nutritive forces thus produced cause the so-called catarrhal diathesis or disease? Why are some so much more susceptible to taking cold than others? I have long observed that deficient calorification is seemingly the ultimate disastrous result of colds, if, indeed, it is not their initial cause. As we have seen, Seiler and Bosworth take note of the disturbance and the depression of temperature, regarding them as the results of the impress of the external cold. They do not draw attention to what I believe to be a fact—namely, that a subnormal temperature, or a condition of system tending to a subnormal temperature, predisposes to the susceptibility to be impressed by external cold. In other words, the reason one takes cold is that one is *already* suffering often, if not continually, from subnormal temperature. This predisposition I have found very generally among catarrhal patients, and often to a degree alarming and unsuspected, the temperature being as low as 95° F. even in subjects apparently well nourished. As those with a normal or an excessive amount of fat are often deficient in blood, so we often find those, of whom we would not suspect it, unable to generate the necessary amount of animal heat. Even in the cases of those ordinarily of normal temperature I have found occasionally a depression explaining an otherwise unaccountable malaise. Notably are these facts true in the colder seasons.

Now, normal calorification depends, as we know, upon hæmatosis and resulting nutritive action, which in turn depend upon the circulation apparatus, and this, as Woakes rightly insists, is under the control of the sympathetic ganglia and their connecting nerves, the vasomotor system.

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* Bosworth. *Diseases of the Nose and Throat*, p. 59.

† *Postnasal Catarrh*, etc., London, 1884, p. 28 *et seq.*

But Nature has provided these organs and functions for this specific purpose, and why the failure? This question opens a most interesting field of study. No one that I know of, except Woakes, has attempted its answer. In the section on "the precatarrhal state," in his treatise on postnasal catarrh, he says, in accounting for "the condition of susceptibility to take cold," that "it implies, therefore, the operation in the system, over a longer or shorter period, of certain morbid processes, the combined effect of which produces the precatarrhal state."

He suggests that these "morbid processes" are syphilis extending to the third and fourth generation, inebriety of progenitors, or heredity, transmitting system or organs at fault *ab initio*, and that "in those subjects who from birth onward show a repeatedly recurring catarrhal tendency . . . there is to be found a disturbance of the equipoise between the functions of nutrition and excretion, due to a defective working power inherent in the organs primarily concerned in these processes," as evidenced in "dry, harsh skin, glandular deficiency as respects capacity for work, whether exhibited in the excretory follicular structures of the mucous membrane, in the glands of the lymphatic system, or in the more complicated gland organs of which the liver and kidneys may be taken as representative," and "depreciation of the special nerve centres, the ganglia of the sympathetic, which by the regulatory influence they exert upon the blood-vessels control the functioning capacity of any given organ." The subject thus handicapped for life has to contend with "errors of diet," "clothing," "atmospheric and climatic environment," etc., greatly taxing the robust and vigorous.

That these "morbid processes" or ætiological factors operate more largely than is generally recognized in the production of catarrhal troubles, especially as perpetuating influences, I am not prepared to deny, but the great prevalence of catarrhal disease forbids the idea that heredity is the sole predisposing factor. I am persuaded that many children, born under favorable circumstances, who would otherwise develop free from this ever-prevailing catarrhal process, are doomed at their primary toilet, or during the first week of postnatal life, to all the evils enumerated as constituting the catarrhal state or diathesis. When we consider its delicate organism and the habitat of the child *in utero*, with thermal regulations perfect, and its sudden extrusion into those most imperfect; when we consider that the danger from this change of conditions is greatly accentuated by its immediate management, or rather mismanagement, by the subsequent utter disregard of its thermal demands, and by the supply of clothing usually fit only for tropical climes, the wonder is not that it has "sniffles," persistent crying to exhaustion, hoarseness, and aphonia, within the first week of postnatal life.

Children are not born with catarrhal disease, but catarrhal disease is of childhood genesis, a fact not recognized by any author, to my knowledge. Adults never contract idiopathic catarrhal disease. The child that passes into adolescence without the disease, and this is exceedingly rare, I regard as safe for life.

There must be a beginning of "taking cold," and any explanation of the process that does not explain the beginning is, of course, defective. Systemic depression of temperature is the beginning. One who can preserve the normal standard of temperature is safe and does not take cold. The newborn child, be it ever so healthful, can not do this unaided. Much less can the child described by Woakes do it unaided. And the adult once fettered by a more or less continuous subnormal temperature, however caused, is more or less continuously susceptible to "taking cold." We find, then, that a subnormal temperature, or an inability to preserve the normal temperature, is primarily the beginning of "taking cold," and, indeed, of Woakes's "precatarrhal state."

This condition of subnormal temperature, which, as I believe, thus lies at the foundation of the catarrhal state in subsequent life, is largely due to poorly digested, excessively developed, partially assimilated, and non-eliminated nutritional elements in the system.

Without recognizing the clinical fact of subnormal temperature, Woakes has explained this perpetuating process, and in its elaboration has suggested the rational basis for its successful therapeutics. To follow his analysis and the most modern investigation along this line, in an examination of the products of digestion, assimilation, and excretion, would lead me too far from my present purpose. I need only call your attention to what is known about self-infection to give the key to my suggestions.

I can not dismiss this feature of the subject without calling attention to the relation of nasal stenosis to faulty hæmatosis and body temperature. That there is a causative relationship between them I am assured from long and careful observation. The fact that the nose is primarily and chiefly a breathing organ indicates the possibility by obstruction of great interference with the respiratory function, which is primarily to supply oxygen to the system and secondarily to eliminate carbon dioxide, both so essential to hæmatosis and the normal temperature of the body. The mouth will not perform these functions satisfactorily, as is well known to those who have given special attention to this subject. The mouth is an eating organ, and any work it may do in the respiratory process is substitutionary Mouth-breathers have, very generally, subnormal temperatures. I do not mean that the one condition is the exclusive cause of the other, but I do believe that the one materially contributes to the causation of the other.

The practical deductions from the foregoing are the advisability of the control of the production of the unfit for life's vicissitudes; the more rational care of the newborn, the tender, and the immature; the proper care of the adult body, by the use of clothing that will conserve the body temperature against the ever-changing phases of climate and temperature; watchfulness against overheated houses; attention to the elimination of effete material from the body, by combating constipation, one of the curses of our civilization, and by other depurating processes; and the restoration of the nutritive processes of the system that hæmatosis and calorification may be sustained at the normal standard.

THE THERAPEUTICAL APPLICATION OF CARBONIC-ACID GAS.

By A. ROSE, M. D.,
NEW YORK.

(*Concluded from page 16.*)

The foregoing is a little sketch of what I have collected from the history of the external application of carbonic-acid gas. It would be in order now to speak of its physiological action, but to do so and to do justice to the subject would require too long a chapter. Allow me, therefore, to refer to some little publications of mine.

From the more recent history of the employment of the gas for medical purposes we learn that Ziemssen, in the year 1883, published experiments to establish the value for diagnostic purposes of artificial inflation of the large intestine with carbonic-acid gas. His method was to develop the gas within the intestine by introducing through a rectal tube, first bicarbonate of sodium, then water and tartaric acid. A better mode of employing the gas was afforded when liquefied carbonic acid came into general use.

The introduction of carbonic-acid gas into the circulation by way of the rectum is an idea of recent date; at least in older literature there are only a few notes here and there to suggest that this form of application had been thought of. In a book on materia medica published in 1863, I have found the following: "The gas exhaled by the mineral springs containing much carbonic acid is used externally against putrid, scorbutical, and carcinomatous ulcers. I am constrained also in this place to recommend the carbonic-acid gas douche into the rectum."

Bergeon, in the year 1886, published his new method of treatment of phthisis, based on the fact established by Claude Bernard, that volatiles introduced into the rectum pass through the venous blood current to the lungs where they will be eliminated without entering into the arterial system or developing any deleterious effect. Bergeon expected by means of enemata of sulphureted hydrogen, diluted with carbonic-acid gas, to destroy the tubercle bacilli within the lung. His method became widely known and was extensively practised in France and in America. The great majority of those who had applied this method confirmed the observation that the general condition of the patients treated was improved; but they soon found that the tubercle bacilli did not disappear, and that all improvement of the general condition was due to carbonic acid and not to sulphureted hydrogen. This method was then completely abandoned because it did not answer the main expectation—it did not cure tuberculosis.

Rosenbach has published the results of a large number of experiments made on the living subject and also on the cadaver by inflating the large intestine with carbonic acid taken from a cylinder filled with liquefied gas. He has given a very thorough and exact description of the behavior of the intestinal tract when inflated with carbonic-acid gas. His observations are of great importance to us in so far as they furnish conclusive evidence that carbonic-acid gas may be employed in this form with perfect impunity. When the inflation is carried out *ad maximum* the lower part of the abdomen becomes expanded and the abdominal walls are under great tension, but, notwithstanding this, the liver is not at all or only very slightly pushed upward; there is no rasping of the diaphragm, and consequently no retraction of the lungs; no dyspnœa is observed and no cyanosis. The latter could only occur if mouth and nose were closed; for instance, if the patient were placed with the face buried in a pillow. This was, indeed, done in an infant asylum where a number of children suffering from whooping-cough received carbonic-acid inflation of the rectum at my suggestion. The nurse, on her own impulse, placed the children in the position described. The whooping-cough yielded to this mode of treatment and no harm came from the short duration of cyanosis, but it was by no means according to my intentions. Further, persons experimented on may complain of disagreeable tension of the abdominal walls, but even this unpleasantness disappears more and more as the patient becomes accustomed to inflation. It is surely needless to say that the inflation must be practised slowly, lest pain should ensue from too rapid distention of the intestine.

Rosenbach's experiments confirm the well-known fact that we can not by way of the rectum inflate the small intestine; especially conclusive in this regard are his experiments on the cadaver. The inflation can not be carried out beyond a certain limit, which limit is exactly the same in the cadaver and in the living. In attempting to force it beyond this limit he did not succeed, for either gas would escape through the anus or it would find such strong resistance that no more could enter. The inflation did not extend beyond the ileocæcal valve.

Carbonic-acid gas, having been introduced into the rectum, passes through the veins, enters into the pulmonary alveoli, and from there, obeying the physical law, is diffused in an upward direction. An increase over the normal process of the diffusion of the gas thus takes place; that is, more than the normal amount of oxygen descends, the ventilation of the air-passages thus being increased. Without going into further details we can state that the final result is an increased accumulation of oxygen in the blood. This is the main factor in the curative effects which thus far have been observed.

Ephraim has treated a number of out-door patients with such gas inflations of the rectum. These patients were suffering from chlorosis, phthisis, and asthma. Out of eleven cases of chlorosis only one was not benefited, in two cases there was marked improvement, and in seven a complete cure. I myself have presented a case of anæmia before a medical society in which the treatment under consideration had been very successful. Ephraim describes the results of his treatment in cases of asthma as most marvelous.

Carbonic-acid gas in the treatment of whooping-cough has been described by me repeatedly. While in some instances in cases of the severest form presenting epistaxis and œdema, the effect of the carbonic-acid gas was most excellent, the whooping-cough disappearing entirely within about ten days, I have to confess that in a large number of other cases there was apparently no influence on the disease, no amelioration, no shortening of the duration being observed. In no instance, however, was there any ill effect of the treatment noted. Why this is so, why some cases yield, others not, is a question to be solved by further observation.

On the treatment of dysentery with carbonic-acid gas I can speak with perfect satisfaction. My experience of it dates back as far as the year 1883, and I have published a number of articles referring to this treatment. I am not afraid of exaggeration, relying on my own observations, in warmly recommending this remedy to you. The characteristic tension in dysentery is promptly relieved by it and the ulcers of the rectum heal within a short time. I only have to add that my experience does comprise the specific tropical form of dysentery.

As early as the year 1885 I published good results of the treatment by carbonic-acid inflation of the rectum against vomiting in pregnancy.

Carbonic-acid gas baths effect relief in many cases of impotency. Physicians at watering places are aware that in many the libido becomes markedly stronger under treatment by carbonic-acid water baths. It goes without saying that those forms of impotence which depend on diabetes, nephritis, cerebral lues, tabes, and atrophy of the testicles are not amenable to this treatment; this gas is, however, an excellent remedy in neurasthenia sexualis, nervous impotence. In cases in which the weakness depends on morbid irritability of the spinal apparatus for ejaculation, carbonic acid is not to be resorted to. To be excluded also are grave forms of impotentia paralytica and psychica. An exceptionally favorable field presents itself in impotentia senilis præcox.

In women, conditions of oppression, atonia, or torpor of the sexual organs may be relieved by means of carbonic-acid gas douches or baths, and sterility depending on anaphrodisia may be cured.

From considerable experience in its gynæcological application I can speak most favorably. I regard carbonic acid as the most reliable agent in the treatment of colpospasmus, ordinarily called vaginismus.

Démmé, of Philadelphia, has successfully employed the carbonic-acid gas douche in a case of puerperal eclampsia; he has also made use of this means and given most marked relief in painful labor in which he thinks that carbonic acid certainly aided dilatation of the os. He believes that labor could be made painless by applying a stream of carbonic-acid gas to the os for a while every ten minutes. His observations were published in 1872, but no attention seems to have been paid to his publication, probably because of his warning of the imaginary dangers, especially of the absorption of the gas and sudden death, and the painful precautions prescribed.

The use of gases in general for industrial, medical, and other purposes has been steadily on the increase. During the last few years this has been particularly marked. There is no doubt that their employment will become still more extensive now that they can be handled with greater facility and safety.

The difficulties in the way of the general use of various gases thus far have been:

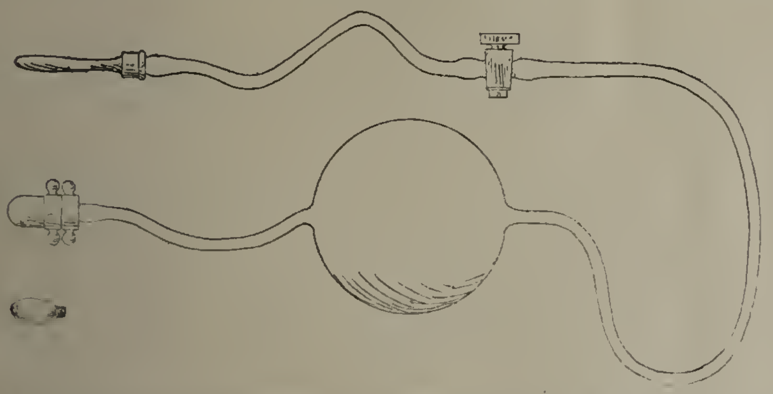
First. The necessity of having large and cumbersome containers for the gas. These containers take the form of large, heavy cylinders, which must be returned when emptied, are expensive in transportation, and are in all respects difficult to manage. They do not vary in size. Very frequently a small quantity of gas is needed, leaving a large surplus to be returned at considerable loss.

Second. The receivers or containers for gases thus far in use are worked by valves which are always more or less defective and are continually giving trouble. The slightest defect in the valve apparatus will render the gas pressure quite unsatisfactory. There is no guarantee that the gas purchased is pure in its character or, by reason of the ease with which gases may escape, is of the required pressure.

Third. The present containers are all dangerous. They are provided with pressure gauges which have to be constantly watched. The place of storage of cylinders has to be carefully selected, and a reducing valve apparatus and safety valve are always necessary.

Fourth. By means of the foregoing facts the use of gases as a means of medical or surgical treatment is necessarily expensive and quite beyond the reach of the great majority of people, who might otherwise be benefited by their use.

After very many attempts to improve this condition, it has been possible under the *système Sterné*, the invention of the eminent French civil engineer, M. Émile Sterné, to provide containers for gases under high pressure which shall be certain in their action, safe, portable, and of reasonable cost. By this system gases may be compressed or liquefied and contained in steel capsules or receivers constructed for the administration of gas of any kind or quantity, of any desired size (as small as a pill or as large as may be necessary for the purposes intended), and which are closed by compression of the parts and without the use of a valve. The resistance to gas pressure under such circumstances may be as high as from seven thousand to fourteen thousand pounds to the square inch, or from five hundred to a thousand atmospheres. They are so closed that when the gas is put into them under pressure it remains unchanged under all ordinary variations of temperature or conditions for any length of time, and until required for use. At the same time the material of which they are composed is of such a character as to enable the gas to be discharged at will by the mere turning of a screw, which is a part of the discharging apparatus, and is not connected with the container in any way. These containers, as before mentioned, are made in various sizes, and, owing to the density to which gases may be compressed, are so small as to be able to be carried about in the vest pocket in the same manner as compressed tablets or capsules of medicine. There is no limit, by the operation of this system, to the application of various compressed gases—oxygen, hydrogen, chlorine, nitrous oxide, surphurous acid, carbonic acid, ammonia, and all the various gases—the use of which would be general in medical, surgical, or antiseptic work, were it not for the fact of the impossibility of handling them as they have hitherto been put up. Another feature of the system is that, in the manufacture itself, the size of the receivers is regulated by the uses to which they are to be put. Thus, there is no surplus of gas over the customary amount used in a given case. Should a further amount be necessary another receiver is easily connected and discharged. Valves, pressure gauges, safety valves, reducing valves, and all the other dangers and uncertain appurtenances of previous systems are thus completely done away with.



The accompanying cut shows the contrivance for applying douches. The gas contained in the steel capsule in its liquefied state is freed as soon as the screw is turned and has pierced the capsule. It assumes its original state again, descends through the rubber tube into the rubber bag, whence it may be applied, passing through another tube, to which a stopcock is attached. By means of this stopcock the gas current can be regulated exactly. While the gas douche is applied to the nasal cavity the patient is to be directed to keep his mouth wide open, in order to avoid intoxication, which might occur if an excessive amount of gas should be swallowed.

The purity of the gases used in this system is also assured; for the gases once put within the containers remain unchanged and without any possibility of their being touched or tampered with. In order to discharge the gases contained in the capsules, it is only necessary to pierce the capsule and thus absolutely prevent its further use for *any* purpose.

The discharging apparatus in use in this system is simplicity itself, and is perfectly certain in its action. It really *controls itself*, as no more or less gas can be used than the quantity proper for the purpose.

126 East Twenty-ninth Street.

THE
ANÆSTHETIC PROPERTIES OF NIRVANIN.
A CONTRIBUTION TO THE STUDY OF THE INFILTRATION METHOD OF LOCAL ANÆSTHESIA.

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The publication by C. L. Schleich (1) of his monograph on *Infiltration Anæsthesia* inaugurated a new era in our methods of producing local anæsthesia. This paper attracted little attention at first. In other countries, surgeons tried and recommended Schleich's procedure long before it was used by the profession in Germany. Within the last few years, however, the method has received full recognition and already the literature on this subject is very large.

Schleich's procedure differs neither in principle nor in the general method of procedure from that which was in common use before his time—the method of Réclus. Réclus (2) proposed that the tissues should be anæsthetized successively from surface to depth, and declared that a one-per-cent. solution of cocaine was sufficient for the purpose. A number of years before Réclus's publications, Corning (3) had shown that solutions of 1 to 500 or of 1 to 1,000 of cocaine could be used and a perfect anæsthesia obtained. Schleich combined the infiltration method of Réclus and Corning's method of cocainization with dilute solutions. By means of the solutions of cocaine used by Réclus, not only was the area into which the cocaine was injected rendered anæsthetic, but also an area into which the cocaine was carried by diffusion. Thus the method of Réclus was based on the idea of infiltration plus diffusion—a larger area became anæsthetized than was infiltrated. Schleich excluded the element of diffusion, and showed that with very dilute solutions of cocaine complete anæsthesia could be obtained; this anæsthesia, however, was restricted to the tissues infiltrated. In the diffusion of strong cocaine solutions after their injection, very small quantities of the cocaine, much diluted by the body fluids, come into contact with the sensitive nerve-endings. Schleich reasoned that by means of a "forcible injection," the very dilute cocaine solution could be brought directly into contact with the sensitive nerve-endings in the tissues, and thus the same results be obtained as where the process of diffusion had come into play.

It will be unnecessary to give a detailed account of Schleich's procedure in this place. The solution most generally used contains 1 to 1,000 of cocaine, dissolved in two-per-cent. salt solution, and with one tenth of one-per-cent. of morphine to prevent the possible after pain.* Briefly stated, the technique, as described by Schleich, is as follows: The solution is injected into the skin with a hypodermic syringe so as to raise a wheal. In the periphery of the latter the needle is again inserted and another wheal formed. This is repeated to the extent of the incision contemplated. A similar procedure is followed in the depths of the wound. The anæsthesia does not extend beyond the area infiltrated and the insensitiveness to pain lasts from fifteen to forty minutes. Schleich and Braun (4) have shown that the effects of watery solutions of salts upon the sensitive nerve-endings in the tissues, when injected in this manner, depend upon a number of conditions: the temperature of the solution when injected; the amount of the mechanical stretching and tearing and anæmia of the tissues; osmotic conditions; chemical changes. All these factors act together to irritate or to paralyze the sensitive nerve endings. Upon them depend the pain that may accompany the injection and precede the anæsthesia (anæsthesia dolorosa of Liebreich) and the possible after-pain. The temperature of the solution should be that of the body; solutions used for infiltration should be osmotically indifferent—*i. e.*, they should have a tendency neither to withdraw water from the tissues nor to give off the same to the tissues. Neither should the solution injected undergo any chemical change in the tissues. Finally, the injection should be made in such a manner that the tissues are distended gradually, though quickly, so as to cause a minimum of tearing, microscopical though it may be. In the accomplishment of this latter end, the temperature of the solution and its indifference osmotically play an important part.

By means of the dilute solutions recommended by Schleich, the dangers of cocaine poisoning are reduced to a minimum, since fifty cubic centimetres of the 1-to-1,000 solution can be used before the toxic dose for the human subject (0.05 gramme, Schmiedeberg) is exceeded. Schleich, Braun, Heinze (5), Mikulicz (6), and others have shown that when very dilute solutions of cocaine are used, the toxic limit is gradually extended with the increasing dilution. This is due both to the high dilution of the cocaine and to the fact that during the incision through the infiltrated tissues a considerable quantity of the solution escapes. In extensive operations, such as herniotomy, amputations, excision of large tumors, etc., the toxic dose must sometimes be exceeded, and in a few cases symptoms of poisoning have been observed. Thus in the operation of herniotomy, from eighty to one hundred cubic centimetres of Schleich's solution No. 2 are often necessary, and in this case almost twice the ordinary maximum dose of cocaine has to be injected. Schleich recommends his procedure for every kind of surgical operation, although he declares that the anæsthetization of acutely inflamed tissues, such as abscesses, carbuncles, and the like, requires a thorough mastery of the technique, and even then is often difficult to accomplish. In children the method can seldom be made use of, since they will not remain quiet during the operation.

Schleich added one-per-cent. of morphine to his solutions in order to combat the possible after pain—*i. e.*, the burning or tingling felt after the anæsthesia has disappeared. But since morphine has no influence upon the peripheral endings of the nerves, it can not have a direct influence in combating the after pain. The results, if there are such, must be due to the systemic effect of the morphine. During the last year I have in a considerable number of cases made use of a 1-to-1,000 cocaine solution in two-per-cent. saline solution without the morphine. I believe that my results were fully as good as those of the previous years in which the original formulas of Schleich were used. Braun (7), whose experience has been very large, has arrived at a similar conclusion.

Recently, eucaine B has been substituted for the cocaine in the Schleich solutions. Eucaine B is three times less poisonous than cocaine, and it is a much more stable compound. It may be boiled repeatedly without altering its composition, while at the boiling point cocaine is rapidly changed into ecgonin, an irritant without anæsthetic properties. Braun recommends a solution containing:

Eucaine B.	1.0
Sodium chloride	8.0
Water	1000.0

I have made use of this solution in a number of minor operations and have obtained satisfactory results with it. The manifest advantages of this solution are its low toxicity and its stability. The anæsthesia that results from its injection persists fully as long as does that from cocaine. I have seen few patients complain of the burning pain, while the eucaine is injected, which is mentioned by Hackenbruch and by Ware (12). Hackenbruch (8) does not say whether he made use of eucaine A or eucaine B, so that the differences between his results and those of Braun and of my own may be due to the fact that we used different preparations.*

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* The following are the solutions recommended by Schleich: 1. Cocaine mur., 0.2; morph. mur., 0.025; sodium chloride, 0.2. 2. Cocaine mur., 0.1; morph. mur., 0.025; sodium chloride, 0.2. 3. Cocaine mur., 0.01; morph. mur., 0.005; sodium chloride, 0.2. Solution No. 1 is to be used in inflamed tissues; solution No. 2, in normal tissues; solution No. 3, in noninflammatory conditions where the field of operation is a large one.

In general, the tissues should be slowly filled with the solution, and the pressure made upon the piston of the syringe should be no greater than what is just necessary to force the fluid into the tissues. When the solution is injected with too much force the patient may complain of pain during the injection, or later after the anæsthesia has disappeared. An unskillful anæsthetist might thus cause his patient unnecessary pain.

Many syringes have been recommended for infiltration, but any strong syringe that will hold ten to twenty cubic centimetres and which can be sterilized by boiling will suffice for the purpose. The needle should be long and strong, so that a large area can be filled with the solution before the needle is withdrawn and inserted in another place. The syringes—mostly of foreign make—in which the barrel and needle fit into each other, and in which there is no screw joint, are to be preferred. In infiltrating large areas, the needle can be left *in situ* while the syringe is again filled with the fluid. This can be repeated a number of times. Mikulicz was the first to point out that large areas can be infiltrated through one needle-puncture if the needle is sufficiently long. This saves time and sometimes considerable discomfort to the patient.

Eucaine B has these two great advantages over cocaine: it can be boiled and it is three times less poisonous than cocaine. If solutions of eucaine B are kept, there will soon appear in them a growth of fungi and bacteria. This occurs also in the Schleich solutions. Even the addition of a few drops of pure carbolic acid, as recommended by Schleich for the cocaine solutions, will not prevent the growth of fungi and bacteria in them. This necessitates a frequent boiling of the solution, or, what is generally preferred, a fresh preparation of the same for each operation, and powders and tablets kept on hand for the purpose. All this renders the preparation for even a minor operation in dispensary practice more complicated.

In analyzing some of the products obtained in the synthetic formation of orthoform, Einhorn and Heinz (9) discovered and described a new substance which they called nirvanin, and for which they claimed anæsthetic properties. This substance is a white salt that has no odor, a strong bitter taste, and is very soluble in water. Luxenburger (10) studied its effect on animals and on the human subject, and concluded that nirvanin was a very good local anæsthetic. According to Luxenburger, nirvanin is ten times less poisonous than cocaine; it acts as an antiseptic in a one-per-cent. solution; it is very stable.

In order to determine the maximum amount of this substance that can be used with safety in the human subject, I injected different quantities of a ten-per-cent. solution of nirvanin, dissolved in four-per-cent. saline solution, under the skin of six rabbits:

I.

Weight of rabbit in gms.	Amount of ten-per-cent. solution injected.	Result.
2,400...	2 c. c. + 2 c. c. = .4 gm. N. = .17 gm. per kgm.	—
1,800...	3 c. c. + 1 c. c. = .4 " = .22 " "	—
1,350...	1 c. c. + 1 c. c. = .2 " = .15 " "	—
1,200...	1 c. c. + 2 c. c. = .3 " = .25 " "	(*a*)
1,450...	3 c. c......... = .3 " = .21 " "	—
1,800...	4 c. c......... = .4 " = .22 " "	—

II.

2,400....	6 c. c. = .6 gm. N. = .25 gm. per kgm....	(*a*)
1,800....	6 c. c. = .6 " = .33 " " ...	(*b*)
1,350....	3 c. c. = .3 " = .22 " " ...	(*a*)
1,200....	2 c. c. = .2 " = .17 " " ...	—
1,450....	5 c. c. = .5 " = .34 " " ...	(*b*)
1,800....	3.5 c. c. = .35 " = .19 " " ...	—

(*a*) Slight symptoms of poisoning.
(*b*) Severe symptoms of poisoning.
— Remained well.

The animals with slight symptoms of poisoning showed signs of weakness in their limbs ten to twenty minutes after the injection. The animal lay on its belly, its whole body trembling. These symptoms disappeared after one to two hours.

In the rabbits in which symptoms of severe poisoning appeared, these came on ten to twenty minutes after the injection. The animal seemed to be very weak; it lay on its abdomen, unable to support itself on its limbs, which continually slipped out from under its body. The hind legs were especially affected, and sometimes they seemed to be partially paralyzed. The animals trembled violently whenever they were disturbed, and this was often followed by general convulsions. After these attacks the animal sometimes rolled on its side as if too weak to support itself. Respiration and pulse were very rapid. After three to twelve hours the animals seemed to have fully recovered. None of them died.

As a result of these experiments it would appear that 0.22 gramme of nirvanin is the toxic dose for every kilogramme of rabbit. As 0.02 gramme of cocaine is the poisonous dose for a corresponding weight of animal, it follows that nirvanin is ten times less poisonous that cocaine. Luxenburger arrived at the same result. Ten times as much of nirvanin as of cocaine can therefore be used in the human subject. The poisonous dose of nirvanin is therefore 0.5 gramme as compared with 0.05 gramme of cocaine.

Regarding the antiseptic properties of nirvanin I must quote briefly from the work of Luxenburger. I have kept solutions of various strengths (one, two, five, ten per cent.) for several months, and, although the bottles containing them were frequently opened and portions of the contents removed, the solutions remained clear. Luxenburger added two, three, and four per cent. of nirvanin to culture tubes of peptone-gelatin which had been infected with *Bacillus pyocyaneus* and with *Staphylococcus albus* and *citreus*. In one-half-per-cent. solutions *Bacillus pyocyaneus* grew luxuriantly, but the staphylococci grew poorly.

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* Eucaine A is no longer on the market. During the last year the manufacturers have dropped the name eucaine B, and this substance is now commercially known as eucaine.

A half-per-cent. solution still contained live bacilli at the end of thirty-six hours. A one-per-cent. solution became sterile in twelve hours. A two-per-cent. solution became sterile in six hours. A three-per-cent. solution became sterile in three hours. A four-per-cent. solution became sterile in three hours.

Luxenburger concluded that one can keep a one-per-cent. or two-per-cent. solution of nirvanin in stock and it will remain sterile.

The solution deteriorates very slowly when boiled. Thus I boiled a one-per-cent. solution for five minutes —anæsthesia lasted twenty-one minutes. It was boiled twice for five minutes at intervals of twenty-four hours —anæsthesia lasted twenty-two minutes. It was boiled three times for five minutes at intervals of twenty-four hours—anæsthesia lasted twenty-one minutes. It was boiled four times for five minutes at intervals of twenty-four hours—anæsthesia lasted twenty-one minutes. It was boiled five times for five minutes at intervals of twenty-four hours—anæsthesia lasted twenty minutes. It was boiled six times for five minutes at intervals of twenty-four hours—anæsthesia lasted seventeen minutes. It is advisable to keep a one-per-cent. and a ten-per-cent. solution in stock, and to dilute one of these with 0.4-per-cent. saline solution before using. In general the 1-to-500 solution should be used. Of this, five times as much can be used as of Schleich's solution No. 2. The anæsthesia is immediate, comes on painlessly, and lasts for from fifteen to forty minutes. In incising abscesses, carbuncles, and other such painful affections the one-per-cent. solution should be used, of which as much can be used as of Schleich's No. 2.

In an experience extending over eight months, I have never seen a case of poisoning from this substance.

The technique of infiltration with nirvanin differs in no manner from that with Schleich's solution. The anæsthesia is limited strictly to the infiltrated area. Outside of this area there is a narrow zone of hyperalgesia and outside this normal sensation. This necessitates a scrupulous adherence to the rule which holds good for all operations in infiltrated tissues—*i. e.*, never to cut beyond the infiltrated area. It is generally possible and always advisable to infiltrate the entire field of operation from the surface to the depth before making the first incision. It is much more difficult to infiltrate tissues where there is already an open wound, as considerable of the fluid will then escape. The best procedure is that of Mikulicz. He first makes a series of wheals in the skin, pushing the needle along as each wheal is formed; then the needle is drawn out almost to its end, then pushed somewhat deeper, and then pushed forward as before. This is repeated as often as necessary.

In the painful affections, such as abscesses, furuncles, and the like, one must begin to infiltrate in the healthy tissues, and gradually approach the inflamed areas. Even with the utmost care, the anæsthetization of these areas is often painful on account of the increase of tension caused by the injection. Schleich recommended that the tension should first be relieved by emptying the abscess through a small incision. But even a small incision may interfere with the success of the infiltration, by allowing some of the infiltrating solution to escape. In operating on abscesses I have recently proceeded in the following manner: A small wheal is made in the healthy tissue in the neighborhood of the abscess, with a syringe containing a small quantity of nirvanin solution; the needle is then pushed forward and another wheal is made in the depth; through the area thus infiltrated the needle is pushed into the abscess cavity and some of the pus aspirated; the needle is then withdrawn and another needle inserted, and with another syringe the infiltration is then proceeded with. The first needle-puncture is so small that none of the infiltrating fluid will escape through it. In this manner I have opened many abscesses painlessly with one-per-cent. nirvanin solution.

A large field for infiltration anæsthesia lies in the possibility of removing new growths by its means. For this purpose 1-to-1,000 or 1-to-500 solution of nirvanin was generally used. Fibromata, lipomata, enlarged glands, ganglia, etc., were successfully extirpated; foreign bodies were found and removed with ease. By means of the 1-to-500 solution injected beneath the periosteum, sequestra were painlessly removed from the bones of the hand, the foot, and the forearm. Amputation and exarticulation of the fingers were done without trouble. Teeth were drawn without pain by means of injections of two-per-cent. solution. I generally hesitate before making use of infiltration anæsthesia in the mouth. Cases of severe infections after infiltration of the tongue or of the mucous membrane of the mouth have been reported where bacteria must have been forced into the deeper tissues by the injection. Mikulicz had a case of severe glossitis after the removal of a small tumor of the tongue under Schleich's solution, and others have reported similar cases.

Where the area to be covered is not too large, Thiersch skin grafting can be done painlessly with 1-to-500 solution of nirvanin. The artificial œdema of the part from which the grafts are to be taken—the increased tension in the tissues—seems, sometimes, to render more easy the shaving off of thin sections of skin.

Several plastic operations were done after infiltration of the tissues with 1-to-500 solution. It must be remembered, however, that the value of the infiltration method for plastic operations is limited, because the artificial œdema causes a displacement of the different layers of tissue in the part operated upon. I have successfully done plastic operations in cases of harelip in the adult and for the cicatricial contractions following burns. Tenorrhaphy and tendon grafting were done with ease with 1-to-500 nirvanin solution.

For operating on ingrown toe nails the infiltration method seldom gives satisfactory results. Notwithstanding that I have carefully followed the rules laid down by Schleich, I have often had my patients complain of considerable pain when Schleich's solutions, eucaine, or nirvanin were used. I now generally follow the method of Oberst(11), in which, after a rubber ligature has been applied around the base of the toe, the anæsthetizing solution (I now use nirvanin, one per cent.) is injected around the base of the toe along the course of the nerves. With the Oberst method this little operation can be done painlessly.

Nirvanin has no irritating effect upon the tissues, and never interfered, in my cases, with healing by primary union.

Wherever there are contraindications to the use of the infiltration method, such as extensive inflammatory affections, malignant new growths of large size with ill-defined limits, etc., there obviously nirvanin will also be contraindicated.

In conclusion, I may be permitted to sum up my results in the following:

1. Nirvanin has distinct and valuable anæsthetic properties when injected into the tissues according to the infiltration method.
2. Nirvanin is ten times less poisonous than cocaine, and more than three times less poisonous than eucaine.
3. It has distinct antiseptic properties; a solution of one per cent. or more can be kept as a stock solution. and will remain sterile.
4. It is a stable compound and can be boiled a number of times without diminishing to any degree its anæsthetic properties.

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A SECOND REPORT ON
THE THERAPEUTICS OF HEROINE.

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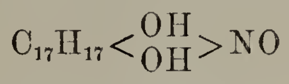
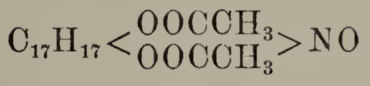
A SUFFICIENTLY long period having elapsed since the introduction of heroine, the new substitution product for codeine,* during which it has been used very extensively, we are now enabled to pass judgment upon its real value, and to definitely determine in what manner this drug has fulfilled the expectations raised in its behalf.

The introduction of heroine has been followed by that of its soluble salt, the hydrochloride. Heroine itself is a white, crystalline, odorless powder, slightly bitter in taste and alkaline in reaction. Its melting point is 173° C., and, although it is practically insoluble in water, yet solutions may be readily obtained on the addition of a few drops of an acid. As already stated, it is morphine in which both hydrogen-hydroxyl atoms have been replaced by the acetyl radicle $OC.CH_3$, thus forming the diacetic-acid ester of morphine.



$$C_{17}H_{17}<\begin{matrix}OH\\OH\end{matrix}>NO$$

Morphine.



$$C_{17}H_{17}<\begin{matrix}OOCCH_3\\OOCCH_3\end{matrix}>NO$$

Heroine.

Heroine hydrochloride is a neutral salt which is very soluble in water (1 : 2); it is also a white, crystalline, odorless powder like heroine, but its melting point is much higher (230° C.).

The reactions of heroine are very similar to those of morphine and codeine; yet it differs from morphine since the characteristic blue color which appears on the addition of ferric chloride to neutral solutions does not follow at once, but takes some time for its appearance; the same is true of the addition of dilute solutions of ferric chloride and potassium ferrocyanide. Furthermore, no iodine is separated in an iodic-acid solution. Codeine and heroine may be distinguished by the color reactions with chloral hydrate and sulphuric acid at a high temperature, codeine giving a green color to the solution; heroine, yellow. Additional pharmacological details may be found in papers by Dott and Stockman (1), Dreser (2), Wesenberg (3), and Lewandowsky (4).

As to administration, heroine may be given in pow-

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* Diacetylmorphine (heroine) was discovered and studied by Wright in 1874, and by Hesse in 1884. An elaborate study of the pharmacology of morphine and its derivatives, published by Dott and Stockman, includes it among the derivatives which were investigated (Harnack, (27)). Nevertheless, Dreser and Floret deserve the credit of having introduced its general use in practice.

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ders, pills, tablet triturates, or solutions with a few drops of acetic acid. My own preference is the tablet triturates. As regards dosage, a large experience with heroine would indicate that the initial dose ought never to exceed a twelfth of a grain (0.005), and in weak individuals or the aged, an eighteenth to a twenty-fourth of a grain would be better. The maximum daily dose ought never to exceed a third to a fourth of a grain.* Children's doses are to be reckoned as usual, with the same caution, however, that is applied to morphine. Where prompter effects are needed than are afforded by these doses, the hydrochloride should be used hypodermically.

The hydrochloride is used in watery solutions, and when used for hypodermic injection it may be employed in two-per-cent. solutions in doses of four to eight minims (a twelfth to a sixth of a grain). For internal use the dose of the hydrochloride is somewhat larger than heroine itself—namely, a sixth to a twelfth of a grain (0.01 to 0.005) three to four times daily.

Both heroine and its salt may be prescribed in combination with other drugs. Thus far the only incompatibility reported has been the combination with apomorphine, and it is also to be noted that alkalies are not to be employed in solutions of the hydrochloride.

Since the publication of my paper in November, 1898 (6), in which I included the reports of Dreser (2) and Floret (5), who introduced the drug, much has been written, a *résumé* of which follows:

Strube (7) employed it extensively in Gerhardt's clinic, in Berlin. After having performed a series of experiments on animals he came to the same conclusion as Dreser—*i. e.*, that it lessened the frequency of respiration, inspiration being deepened as well as expiration; there is no paralysis of the respiratory centres. The latter also react less toward mechanical distention of the lungs after the administration of heroine. The heart and circulation are not materially depressed. In all these directions heroine acts more powerfully than codeine, and in smaller doses.

Clinically Strube employed it in fifty cases, most of these being chronic patients, in one-twelfth-grain (0.005 gramme) pills or powders; in a few cases the dose was a sixth of a grain (0.01), the indications being cough and the insomnia resulting from the latter. It failed in but few cases, even when hæmoptysis was present; the relief usually followed within half an hour after administration. In advanced cases the dose had to be repeated after four hours. The frequency of respiration was usually diminished. This was well shown in an old woman with intense dyspnœa from mitral and aortic insufficiency and chronic nephritis. A few hours after taking a sixth of a grain she slept, and the respirations fell from 52 to 36. Good effects were obtained in two cases of bronchial asthma. No unpleasant after-effects of any kind were noted.

The next report is that of Tauszk (8), of Budapest, who used it on sixteen patients, eight of whom had pulmonary phthisis; one, croupous pneumonia; one, pleurisy; and five, bronchitis. The cough was either promptly relieved or much ameliorated. One case of bronchial asthma with severe dyspnœa was relieved, and the attacks did not return. In cases of chronic cough which have lasted for weeks, he has repeatedly given 0.003 gramme (0.05 of a grain) of morphine without the slightest amelioration, while the same quantity of heroine checked it instantly and left the patient in a vastly improved state of health after its effects had passed off. In other cases 0.06 to 0.10 gramme (1.0 to 1.5 grain) of codeine was given with little or no effect, while 0.003 gramme (0.05 grain) of heroine gave perfect relief. Similar success attended a case of phthisis treated with codeine, extract of opium, hyoscyamus, and morphine.

Heroine was also potent as an anodyne in cases of neuralgia of the trigemini, enteralgia, and hemicrania, while its efficacy in diabetes was undoubted.

After long use the dose requires to be increased to 0.005 gramme, owing to the peculiarity of habit. There is only one case where stupor or giddiness was observed from the long and repeated use of the drug.

Weiss (9), of Vienna, employed both heroine and the hydrochloride with good results in twenty-five cases, including pulmonary phthisis, influenza, and cardiac cases with secondary bronchitis. Two cases of angina pectoris with arteriosclerosis were much relieved during stenocardiac attacks. He also employed it in two cases of lumbago and one of dental periostitis with satisfactory sedative results. No bad effects of any kind were observed, even after prolonged use in advanced cardiac disease.

Turnauer (10) reports forty-eight cases of phthisis, acute and chronic bronchitis, emphysema, and cases of dyspnœa from various causes. The results were satisfactory. He noted that the dose had to be increased after a time in nearly all cases after it had been used for a prolonged period, but without any of the usual symptoms of the morphine habit. Nausea was observed twice. One old woman with advanced arteriosclerosis had symptoms of collapse after doses of one twelfth grain, codeine in doses of a half to a third of a grain being well tolerated.

Leo (11) details an extensive experience with heroine. He observed nausea and vertigo, and even fainting in two cases, with doses of a sixth of a grain; no bad effects were observed on reducing the dose to a twelfth of a grain. Not infrequently patients complained of languor and nausea.

In painful affections it was inferior to morphine and codeine; this was based upon its use in sciatica, trigeminal neuralgia, pleurisy, cardialgia, gastric ulcer, and neuralgia, its effects being either mild or only temporary.

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* Such doses as are put up by some manufacturers as one-half-grain tablet triturates should never be employed.

In irritating lesions of the respiratory tract (acute laryngitis, bronchitis, and phthisis) he found it decidedly inferior to morphine and codeine. But in dyspnoic conditions he obtained remarkable results, heroine acting upon the respiration just as digitalis does upon the heart. He also noted good results in two cases of uræmic dyspnœa, eight of advanced emphysema, fifteen of chronic bronchitis, and five of bronchial asthma. Failures were noted in one case of emphysema and two cases of chronic bronchitis. In all the other cases excellent results were obtained after the first dose (a twelfth of a grain), in some cases the action being magical. Some interesting cases are detailed. In asthma the effects lasted one to two weeks after the cessation of the attack, and in one case he could even speak of a cure (that of a boy, sixteen years of age, with "chronic pulmonary catarrh" after pertussis).

In some cases it lessened expectoration; Leo therefore added potassium iodide, with excellent results. He concludes that in asthmatic conditions, although it is often only temporary like all the other drugs (stramonium, nitrates, etc.), yet it is superior to all of them, since it fails less frequently, and its effects are more rapidly obtained. In a footnote, these good results from the combination of heroine and iodide of potassium are corroborated by Schwalbe (the editor of the *Deutsche medicinische Wochenschrift*), who reports excellent effects in two cases of chronic bronchitis, with dyspnœa and tenacious secretion.

Eulenburg (12) reports his extended experience with hypodermic injections of heroine hydrochloride. He employed it in filtered two-per-cent. solutions in distilled water in doses of 0.25 to 0.50 cubic centimetre (a twelfth to a sixth of a grain of heroine hydrochloride). He made about three hundred injections in different parts of the body in various patients without observing any bad local effects if the ordinary proper precautions were observed. The injections were painless. The doses given above sufficed in all cases except in two where special indications demanded larger doses, which were followed by unpleasant effects like those of morphine. In one of these cases, a morphinist, the injection of a third of a grain was followed within ten minutes by nausea, depression, and vertigo. In the other case, an anæmic woman with sciatica, five minutes after the injection of a fourth of a grain she complained of nausea, vomiting, and general weakness, which lasted for several hours.

Eulenburg is very positive in his declaration of the sedative effects of the hydrochloride of heroine: "These doses (a twelfth to a sixth of a grain) are followed by effects which are similar to those after rather larger doses of morphine." This statement was made after using it in the most varied painful affections, such as facial neuralgia, intercostal neuralgia, sciatica, rheumatic myalgia, arthralgia, etc. It is especially useful in morphinists, two cases being reported in which Eulenburg broke off the habit by gradually substituting heroine hydrochloride for morphine, and then gradually diminishing the dose of the heroine. No digestive disturbances were observed.

When we are anxious to obtain the effects of heroine rapidly, as in attacks of asthma, the hydrochloride should be used hypodermically in preference to heroine itself. In solutions the salt may be used instead of heroine, but, as already stated, it must be noted that the dose is twice as large. Still, he cautions that the dose internally should not exceed half a grain daily.

Freudenthal (13) states: "As an outcome of my numerous observations regarding the action of heroine, I would especially emphasize that it has proved useful in the alleviation of cough, not only in the cases of tuberculous affections of the respiratory organs referred to by me, but also in many other diseases of the air-passages in which cough is a prominent symptom."

He also refers to its value in pseudo-croup in children in doses of a sixtieth to one one-hundred-and-twentieth of a grain. A case is also detailed of an old man, sixty-nine years old, with chronic bronchitis, emphysema, and advanced cardiac disease of fifteen years' duration, whose condition was very much improved after the use of heroine (a twelfth of a grain three times daily) for ten days. Two weeks later he returned to the city and had a very harassing cough after catching cold. He recovered under a sixth of a grain three times a day and had been well since. Brilliant results were also obtained with it in a case of tuberculous laryngitis. No habituation was observed, one patient having used it for five months without acquiring any habit. However, constipation was reported in ten per cent. of his cases, and hence he advised adding extract of cascara sagrada (half a grain) or aloin (a tenth of a grain) to each tablet.

Lang (14) recommends heroine for chronic rather than acute catarrhal respiratory conditions. The only after-effects which he noted were pruritus, especially pudendal, which is more pronounced at the beginning of the treatment; as a rule, it is only temporary. In some cases an irritating, dry bronchial cough was complained of two hours after taking heroine. This disappeared on drinking hot water freely. He also warned against giving alcoholic stimulants with heroine. In general, his experience is favorable, one-twelfth-grain doses being preferred.

Holtkamp (15) presents an analysis of a hundred and eighty-seven cases in which heroine had been prescribed. Of these, there were (*a*) a hundred and twenty-two cases of acute and chronic laryngitis and bronchitis; (*b*) twelve of pleurisy, with severe pains and irritating coughs; (*c*) five of pertussis; (*d*) seven of sciatica and muscular rheumatism; (*e*) thirteen of cardialgia; (*f*) twenty-three of gastro-intestinal influenza, with severe pains; (*g*) five of general nervousness and insomnia. His general conclusion is that heroine has amply fulfilled all expectations; that its action was satisfactory in all cases where its use was indicated, and that unpleasant or serious after-effects were never observed.

He added that in (*a*) he used it in doses of a twelfth of a grain three times a day in adults, and in severe cases a sixth of a grain was given at bedtime. In all cases good, dreamless sleep resulted with no unpleasant after-effects in the morning. In five febrile cases of phthisis, with severe coughing paroxysms, rest was always obtained, sweats were lessened, and the fever fell 0.6° to 1.3° C.

(*b*) All cases reacted promptly, except one in which morphine had to be injected.

(*c*) Five children with whooping-cough, ages ranging between two and seven years; doses of one one-hundred-and-twentieth of a grain to a thirtieth of a grain three times a day. In four of them, marked reduction in frequency and severity of attack.

(*d*) Two severe sciaticas; doses of a sixteenth of a grain every two hours, and a sixth of a grain at 10 P. M., gave excellent results. Three myalgias somewhat relieved, but effects not so brilliant.

(*e*) Thirteen cases were cured more rapidly and with smaller doses than with morphine.

(*f*) All these cases reacted very well.

(*g*) After a few days, quieting of patients and refreshing sleep obtained with a twelfth of a grain three to four times daily.

Beketoff (16) reports twenty-five hospital cases of pulmonary tuberculosis which were treated with pills or powders of heroine, a twelfth of a grain. The results were good, and he directs special attention to the stimulating effect on the respiration, this effect being most marked in those cases in which there was dyspnœa from pleural irritation or incessant cough; but where it was due to diminution of the pulmonary breathing area (large cavities, etc.) or cardiac weakness, it was less useful. He observed no general narcotic effects or weakening of the circulation, and it was well borne even when the stomach and intestines were not at fault. It was especially valuable in hæmoptysis in allaying cough. No habituation was noticed even after the drug had been steadily used for over a month in the same dose. The general subjective effect upon the patient was good.

Mirtl (17) employed heroine in a series of fifty gynæcological cases to observe whether it produced any local soothing effects if applied topically in tampons in glycerin solutions or in vaginal suppositories (a sixth to a quarter of a grain in cacao butter). In all cases the pains were lessened within a quarter to half an hour, and were often completely relieved after an hour to an hour and a half, the effect lasting twenty-four to thirty-six hours. These effects were noted even after the tampon had been retained only six to twelve hours. There were no after-effects except that in about twenty-five per cent. of the cases a moderate languor was observed four to six hours after the application. Constipation was never reported.

Floeckinger (18) reports his experience with heroine, especially in an epidemic of measles, in which respiratory complications were present in sixty-five per cent. of the cases. These were promptly relieved by heroine; in only a few cases vomiting occurred after it. He also used it in several cases of broncho-pneumonia in children, but, as it was in combination with other drugs, it is difficult to infer how much of the effects were due to heroine. In one case of this disease in a child two years and a half old, he noted a general irritating rash after using heroine for a few days, the rash disappearing after the use of the drug was discontinued.

Rosin (19) reports his experience with heroine at Senator's clinic in Berlin. His forty-eight cases included fourteen of emphysema with marked chronic bronchitis and asthma; ten of pulmonary tuberculosis, four of which had complicating pleurisy; four of simple diffuse bronchitis; three of angina pectoris; two of cardiac asthma; five of gastrodynia; one of trigeminal neuralgia; one of sciatica; one of cholelithiasis; two of chronic rheumatism, and one of tabes dorsalis. The majority of them were in dispensary patients who had been under various treatments for a long time. Good results were obtained in only six cases, and even in these the results were not constant, and by no means any better than those obtained with codeine or morphine. In fourteen cases there were unpleasant after-effects, such as vertigo, nausea, and severe headache. The doses ranged from an eighth to a sixth of a grain.

Goldmann (20) published a review of the literature of heroine and heroine hydrochloride up to date, and considered that the claims for heroine as a respiratory stimulant in conditions accompanied by dyspnœa were more than amply fulfilled; that it was a valuable remedy for allaying coughs, especially in pharyngitis, laryngitis, bronchitis, pulmonary tuberculosis, and emphysema. (The editor, Lohenstein, adds a footnote corroborating these statements.) However, there is less agreement as to its value in dyspnœa, which is due to "oxygen hunger," and as a narcotic. Goldmann directs especial attention to its employment in whooping-cough, the individual paroxysms of which are lessened in severity and their frequency diminished. He also presents a number of useful formulæ of its combination with various drugs.

Floret (21) has recently presented a second series of cases treated with heroine. He again directs attention especially to the good results in the relief of cough and the symptoms in acute catarrhs of the respiratory tract. In bronchitis sicca the expectoration is improved on account of the stimulation of the respiratory muscles. In chronic conditions the effects are not so good as in acute, but still better than those from codeine or morphine.

In incipient phthisis Floret obtained good results from the combination of heroine (a twelfth to a sixth of a grain) with duotal (seven grains and a half, three times a day). He details four cases. He also noted a lessening of night sweats.

In asthma good results were again emphasized. In three cases of whooping-cough he obtained good results, but it failed in two cases. In all cases it was well borne. Thirty-two cases of influenza were benefited by it alone or in combination with salophen.

No bad after-effects were seen in any of the cases. The dose was a twelfth to a tenth of a grain, three to four times daily. A sixth to a third of a grain was narcotic. Bad effects resulted from combining it with apomorphine.

North (23) reports very satisfactory results obtained in various forms of cough, pulmonary tuberculosis, and asthma. He especially praises its effect in pneumonia, one severe case being cited in which there was obstinate cough; temperature, 103° F.; respiration, 38; pulse, 120; insomnia. Heroine, a twelfth of a grain, repeated in two hours, stopped the cough; the patient slept well; expectoration became easy; the pulse fell to 90, becoming fuller and stronger; the respiration fell to 24, and the fever to 99° F.

Bloch (24) has presented a careful study of heroine extending over six months, and concludes, after comparing its action with morphine and other substitution products for morphine, that heroine has a sedative action upon the respiratory tract, and that it is especially indicated in all conditions in which it is involved primarily or secondarily when such a sedative action is indicated. In influenza he believes that it not alone shortens the disease but lessens the tendency to complicating broncho-pneumonia. In children, too, its action was very satisfactory. Bloch usually administered it in combination with a mild expectorant, like liquor ammoniæ anisatus. His results were also satisfactory in pulmonary phthisis (alone or with creosote), in cardiac asthma, bronchial asthma, etc. Unpleasant after-effects were never observed.

Wierzbicki (25) used heroine in a small number of cases (only seven) of phthisis, bronchitis, and pulmonary emphysema, but, as these were carefully controlled, his results are worthy of record. He found that it relieved the cough and lessened the quantity of expectoration; the diminution of the latter was in the serous portion, but not in mucopurulent constituents of the sputum. No after-effects were observed, except a little dryness of the throat in one case. No effect was produced upon the circulation, digestion, or the temperature. Dose, a twelfth of a grain three to six times daily. On himself he experimented with larger doses, a third of a grain three to four times daily, but experienced no bad effects, save a certain amount of languor, drowsiness, and dryness in the throat.

(*To be concluded.*)

ECHINACEA ANGUSTIFOLIA:

A NEW AND SUCCESSFUL APHRODISIAC FOR IMPOTENCE, PSEUDO-IMPOTENCE, ETC.

By J. COPLIN STINSON, M. D.,

SAN FRANCISCO.

Echinacea is a comparatively new remedy. It is a mildly stimulating non-toxic antiseptic, an antizymotic, alterative, anodyne, restorative, and aphrodisiac. It has been used internally in malarial disease, typhoid and other fevers, syphilis, diseases of the stomach, diphtheria, septic poisoning, anæmia, erysipelas, cancer, snake and other bites, and impotence; locally, in diseases of the teeth, gums, and throat, wounds, ulcers, sloughing, snake and other bites, hæmorrhoids, cancer, boils, carbuncles, urethritis, elytritis, different forms of erythema, erysipelas, and impotence.

Internally it is used in doses of from five minims to one drachm, well diluted with water.

Locally, on the skin and mucous membrane, it can be used freely in twenty-five-per-cent. solution in water or undiluted. One of the best preparations of echinacea, and the only preparation I have used so far, is put up by Lloyd—echinacea, s. m. (Lloyd's)—which can be used locally or internally as above.

This paper deals mainly with the local action of echinacea used freely and undiluted on the mucous membrane of the glans penis, corona, etc.—*i. e.*, as a local aphrodisiac. The influence of echinacea on the capillary circulation is more satisfactory than that of any other drug. It is a stimulant to the circulation, and appears to endow the vessels, etc., of the glands with a rapid recuperative power, which constitute it a stimulant and tonic to the local circulation, etc., adapting it especially for local conditions of debility. When applied locally in doses of from twenty to sixty drops, it produces a mild, pleasantly tingling, penetrating burning sensation. The glands, etc., become congested by stimulation of the vessels and sensory nerves of the penis. Muscular contraction is excited by reflex action, and in from two to fifteen minutes erection occurs. One application is usually sufficient to produce an erection, but, if necessary, a second should be made in fifteen minutes. Erections are augmented, completed, and maintained by applying echinacea. Reaction after connection occurs quickly by using this drug locally. Usually in an individual who requires one or two or more hours to elapse before he can have a second connection, reaction with erection occurs in about fifteen minutes after its local use.

The thermal stimulus to the peripheral terminations of the sensory nerves, etc., is rapidly transmitted to the central nervous system.

Erections in a normal individual can be increased in frequency and with shorter intervals between them by its use.

The local stimulating action increases the special sensibility by acting on the nerve fibrils and vessels. The effect of local stimulation on the sensory apparatus is really a central one, and the sensation, although referred to the penis, is a cerebral state. It therefore affords a means of arousing the highest centres, and the impression conveyed is not converted into a painful sensation, but while traversing the gray matter of the spinal and medullary centres causes reflex impulses which arouse specially pleasant sensations and erections. In this way the special impressions are readily available means of stimulating, not only consciousness, but the cardiac, vasomotor, and other centres, and through them the viscera themselves. Thus, as well as a local stimulant, it may become a powerful general stimulant.

Echinacea is very mildly rubefacient and stimulant; the local vessels are dilated by the direct action on the vessels and nerves, and the local circulation becomes more free. The irritation of the sensory nerves causes a very pleasant, mild, burning sensation; reflexly, the cardiac centre is accelerated, the blood pressure rises, the temperature is elevated, the highest centres are roused by the pleasantly painful impressions, perception and consciousness are increased, and marked erection occurs.

Impotence, pseudo-impotence, and the other different forms of impotency, sexual nervousness, feeble desire, want of sexual confidence, functional sexual disorders, low sexual capacity, sexual neurasthenia, diminution of the sexual power without assignable cause, sexual weakness, poor powers of reaction, and distaste for the female are all favorably influenced by applications of echinacea s. m. (Lloyd's). In organic and paralytic impotency this drug may be of some value as a local application in promoting erections. Echinacea also acts satisfactorily as an aphrodisiac in the female when applied locally.

The prognostic significance of the different forms of impotence, etc., varies, according to the pathological or pseudo-physiological condition present. In many cases of organic impotence the condition is absolute and permanent from the nature of the physical causes which constitute the obstacles to satisfactory intercourse. Other cases are remedial by medical or surgical means, or by both these means.

The prognosis of the paralytic form of impotence is generally bad. In cases depending upon pathological lesions of the spinal cord and brain there is little hope of cure.

Many cases of impotence, etc., due to abnormities or lesions of the genito-urinary or adjacent organs or structures admit of relief. Hernia, hydrocele, varicocele, etc., can be cured by operation; tumors of the penis can be excised, the excess skin, etc., of elephantiasis can be removed; hypospadias and epispadias can be cured by suitable reconstructive operation, with reestablishment of the lost or impaired genital function. Deformities from wounds of the urethra, indurations, calcification, etc., of the corpora cavernosa are very infrequently cured by operations. Deviations, etc., of the penis from syphilitic infiltrations are favorably influenced by antisyphilitic medications—*e. g.*, by intramuscular injections of the salicylate of mercury and iodide of potassium by the mouth—as under this treatment the indurations may disappear. The reflex impotence due to local lesions—*e. g.*, phimosis, herpes, vegetations, granulations or stricture of the urethra, bladder, and rectal diseases, etc.—very often disappear with the correction of the cause. The impotence which sometimes follows urethritis, prostatitis, spermatocystitis, orchitis, epididymitis, etc., is usually healed by curing the primary diseases.

Irritable and atonic forms of impotence, cases with too rapid ejaculation, persons who have been addicted to masturbation, persons with hyperæsthetic prostatic mucous membranes, or with irritable ejaculatory ducts, etc., can be cured by stripping the vesicles, the passage of sounds, local applications, and tonic remedies—*e. g.*, phosphorus, damiana, strychnine, and echinacea. Psychical impotence is in most cases capable of being cured by gaining the patient's confidence and impressing upon him the strong probability of cure by ordering some tonics and local applications. Tonic remedies and good hygiene should be considered in almost all cases of impotence.

Tobacco and alcohol (whisky, brandy, etc.) should not be used by any impotent or pseudo-impotent patient. In some nervous or hypochondriacal cases and in all sexually depleted patients change of air, tonics, salt-water baths, with complete abstinence for some time from coitus, must be recommended to bring about cure. In all cases, independent of the cause, the local applications of echinacea will be found of much value as an aphrodisiac.

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326 KEARNY STREET.

The Death of Sir James Paget.—The death is announced from London, at the age of eighty-six, of Sir James Paget, F. R. C. S., whose fame as a surgeon was world-wide. For many years Sir James had retired from all but a purely consulting practice. He was a graceful speaker, and earned the title of the medical Chrysostom, and a charming writer, his *Lectures on Surgical Pathology* being a medical classic, while his personality was such as to endear him to all who knew him.

THE LUNG REFLEX.

By ALBERT ABRAMS, A. M., M. D.,
SAN FRANCISCO.

I HAVE referred elsewhere * to the *lung reflex* as an aid in diagnosis. It is especially valuable in pædiatrics, and I hope, by the succinct citation of two clinical cases of broncho-pneumonia in children, to demonstrate its real value. In a contribution by Moccucci † the suggestion was made that when ether was sprayed over the left half of the abdomen, marked reduction in volume of the spleen was observed in twelve cases. In repeating the experiments, I likewise noted a decided reduction in the area of splenic dullness in all individuals on whom the method was tried, irrespective of the fact whether enlargement of the spleen existed or not. Investigations convinced me that this diminution in the area of splenic dullness was not real but only apparent. When the ether spray was directed over the region of the heart, the percussional area of that organ was reduced at once; in fact, the superficial area of cardiac dullness could be obliterated by the manœuvre. Similarly, when the spray was directed over the hepatic region, the superficial area of dullness of that organ could be reduced at once. When the spray was directed over the borders of the lungs posteriorly, the lung borders could be made to descend from two to four inches, dependent on certain conditions. It was further ascertained that dislocation of the lung borders by forced inspiration never approached the dilatation of the lungs produced by the cutaneous application of the ether spray. Further experiments demonstrated in brief the fact that the application of any cutaneous irritant, whether the latter are mechanical, chemical, or electrical, would always induce acute dilatation of the lungs. Even in emphysematous individuals, the application of a cutaneous irritant still further augmented the existing lung dilatation. The question naturally arises, By what means can we establish the fact that the application of any cutaneous irritant will cause acute dilatation of the lungs, a condition which, it may be mentioned parenthetically, is of only a few minutes' duration? Such an hypothesis is made tenable by the aid of the conventional physical signs and the use of the fluoroscope. These aids show that when the skin is irritated by means of cold, by friction, or by a strong faradaic current, lung dilatation will ensue. The degree of lung dilatation is dependent on the character of the irritant and the severity of its application. The response of the lung to dilatation is always greatest in that part of the lung contiguous to the source of cutaneous irritation. Lung dilatation may be recognized by the following physical signs: 1. Diminished respiratory excursions of the lung borders. 2. Extension of the pulmonary percussion note and obliteration of the cardiac and splenic areas of dullness. 3. Hyperresonance of the lungs. 4. Obliteration of the apex beat. Auscultation is of no value as a physical sign inasmuch as the artificial lung dilatation is of very short duration, not lasting, in the majority of instances, longer than three minutes after the source of cutaneous irritation has been done away with. Lung dilatation, it must be observed, does not involve both lungs, nor even an entire lung; it spreads from the source of cutaneous irritation, involving primarily circumscribed parts; then, if the irritation is severe enough, more remote parts may be involved. In lungs showing diminished resonance, the latter can always be increased by rubbing the skin vigorously over the lung percussed. The writer has learned to rely on this sign, which he has called the *lung reflex,* in all doubtful cases of lung dullness and to test the resiliency of the pulmonary structure. The X rays furnish distinctive evidence in the recognition of artificial acute lung dilatation. In the examination of the normal lungs with the Röntgen rays, the fluoroscopic picture presents a uniformly light area. The lungs appear brighter during inspiration than expiration. If, now, we irritate the skin of the thorax by any available means, we note, contiguous to the site of irritation, that the brightness of the lung will become intensified; this augmented brightness is especially manifest in situations corresponding to the complemental spaces. By gradually applying our irritant to different parts of the skin of the thorax, we shall note that eventually the entire lung may be made to yield a more intense luminosity. We will still further observe that this increased brightness is of varying duration, lasting about two minutes and a half in the average individual, after which time the lungs resume their normal appearance. In diagnosis, the lung reflex establishes a clew to the diagnosis of the nature of lung dullness whether due to consolidation or to atelectasis. If the latter is present, vigorous cutaneous irritation will dissipate the dullness; whereas, if the former is present, it will persist. In treatment, the lung reflex suggests many valuable lessons. It teaches us that in the development of the lungs vigorous cutaneous irritation by friction or the use of cold water is invaluable. In broncho-pneumonia, where lung atelectasis deprives the patient of extensive areas of respiration, the application to the chest of cutaneous stimuli is invaluable in maintaining the lung dilatation.

The application of the lung-reflex test in the broncho-pneumonias of children has convinced me that, in the majority of instances, percussional dullness is dependent on the complicating atelectasis.

The following cases are cited:

CASE I.—G. B., aged four years. After an attack of bronchitis of a week's duration, developed a sudden rise of temperature, ranging between 104° and 105° F.

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* *Medical Record*, April 28, 1899; *Transactions of the Medical Society of the State of California*, 1899.

† *Riforma medica*, p. 208, 1898.

in the rectum. Respirations shallow and 80 a minute. Pulse, 150. Over the lower half of right lung the resonance on percussion is decidedly impaired, whereas on the corresponding part of the left lung dullness is decided. It is difficult to ascertain anything by auscultation, owing to the struggles and cries of the patient. The question naturally arose, Is the dullness on both sides of the chest dependent on atelectasis, the result of enfeebled respiration or bronchial obstruction, or is the dullness caused by broncho-pneumonic patches of consolidation? Application of the lung-reflex test, made by vigorous cutaneous friction of the skin of the thorax corresponding to the areas of impaired resonance, demonstrated that, on the right side of the chest, normal resonance on percussion supplanted the cutaneous friction, whereas on the left side dullness persisted. It was manifest, then, that on the right side we were dealing with an area of atelectatic lung and on the right side with consolidation. When the areas could later on be auscultated during the time the child was asleep, the absence of the breath sounds was noted on the right side and bronchial breathing on the left side. On the following day the right side of the chest did not respond, as on the previous day, to the lung-reflex test, and auscultation demonstrated bronchial respiration. It was manifest, then, that a portion of the lower lobe of the right lung had become involved in the broncho-pneumonic infiltration.

Case II.—Aged eight years. Temperature, 105° F. in the rectum. Previous history of a long-standing bronchitis. Dullness over the lower lobes of both lungs. Areas of dullness become resonant upon application of the lung-reflex test. Treatment was conducted with a view of demonstrating what local applications to the thorax were best adapted to maintaining lung dilatation. Friction of the skin of the thorax, and cold and warm water affusions were used in rotation, all with only momentary effect on the collapsed areas of lung. The application of hot poultices gave unequivocal demonstration of the fact that they were best adapted to counteracting lung collapse. This is the usual local treatment I adopt in broncho-pneumonia, and my results certainly justify a continuance of its use. The prognosis in the latter case was regarded as favorable, owing to the persistent positive reaction of the lung-reflex test.

Therapeutical Notes.

A Wash for Baldness following Fevers.—Among a number of formulæ recommended by Brocq (*Archives de thérapeutique; Journal de médecine et de chirurgie pratiques; Gazette hebdomadaire de médecine et de chirurgie*, November 16, 1899) is the following:

℞ Castor oil		20 parts;
Tincture of cinchona, Tincture of rosemary, Tincture of jaborandi,	each	10 "
Rum		100 "

M. To be shaken briskly before being rubbed on.

The Treatment of Furuncles.—M. de Crésantignes (*Gazette hebdomadaire de médecine et de chirurgie*, November 30, 1899) attributes to self-intoxication the leading part in the long duration of neglected or badly treated furuncles. He records the good results obtained by him for many years by varnishing the sound skin around the furuncle to a sufficient extent, thus preserving it from contact with the staphylococci. The varnishing may be done with flexile collodion, steresol, or traumaticin.

Prescriptions for Chordee.—*Progrès médical* for August 19, 1899, attributes the following prescriptions to G. Lyon:

1. ℞ Camphor		45 grains;
Extract of opium		3 "

M. Divide into twenty pills.

S.: Four to be taken, and four more after fifteen minutes if necessary.

2. ℞ Lupulin, Powdered sugar,	each	30 grains.

M. The whole to be taken at once.

3. ℞ Antipyrine	30 to 45 grains.

To be injected into the rectum.

4. ℞ Syrup of orange peel, Syrup of codeine,*	each	3,000 grains;
Potassium bromide		150 "

M. Two tablespoonfuls to be taken at bedtime and repeated during the night.

Mercurial Ointment in Erysipelas. — Dematteis (*Gazzetta degli ospedali e delle cliniche*, October 1st; *British Medical Journal*, December 23, 1899) publishes a short summary of eight cases of erysipelas treated by mercurial ointment either alone or diluted with vaseline. The results were so successful that the author urges a larger trial of this mode of treatment. He found it of value not only in the more or less stationary cases, but in those where the disease had a tendency to spread in other parts; even in gangrenous erysipelas it controls the extension of the disease. Probably these results are due to the bactericidal action of the mercury.

For Inflammatory Rheumatism.—Dr. F. A. Long (*Western Medical Review*, December, 1899) says that nothing has ever given him the satisfactory results in inflammatory rheumatism that has a special tablet with the following formula:

℞ Acetanilide, Salicylate of sodium,	of each	$2\frac{1}{2}$ grains;
Citrate of caffeine		$\frac{1}{4}$ grain;
Podophyllin		$\frac{1}{12}$ "

Ft. tabella. Two tablets may be given hourly till the temperature is reduced and the pain relieved; then two every three hours for several days after the disappearance of the painful manifestations.

Guaiacol in Chronic Tuberculous Disease.—*Progrès médical* for December 2, 1899, gives the following formula:

℞ Sodium glycerophosphate	6 parts;
Crystallized guaiacol	1 part;
Glycerin	15 parts;
Syrup of Tolu	20 "
Arrack	3 "
Malaga wine	60 "

M.

Our contemporary says not a word concerning the dose. We estimate that two teaspoonfuls of the solution would contain a little over a grain of guaiacol.

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* Containing 0.20 per cent. of codeine.

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THE EMERGENCY CALL.

There is a widespread impression in the community that a medical man is morally if not legally bound to respond to any and every call for his professional services in cases that can with any show of reason be called emergency cases. We believe it to be quite true that no reputable physician would decline to render services for which he realized that there was pressing need, but the public is too ready to take upon itself the decision as to the urgency with which medical aid is required in any given case and to extend the "emergency" element to the whole course of the case. Consequently many a physician is blamed unjustly. We can not see that he commits any fault if, after having done what the emergency really calls for, he declines to assume the further conduct of the case, provided he has satisfactory reasons for doing so and states those reasons at the time. Moreover, he is breaking no moral obligation if his declining subsequent attendance is founded on his ascertaining that there is no reasonable prospect of his being paid for his services.

But we can not go quite to the length that a witness did in an instance mentioned in the *British Medical Journal* for December 16th. The case was that of a woman who had broken the neck of her femur. The medical practitioner who was called says that he asked who was to pay for the attendance, and received "some indistinct assurance" that he would be paid, but he found that the injured woman was a pauper, so he recommended her removal to the workhouse hospital and telephoned to the police, who conveyed her to the hospital, where she died of pneumonia after some days. He did, in our opinion, all that could reasonably have been expected of him. Nevertheless, his action was misrepresented on the coroner's inquest; it was stated that he had said he must have security before he examined the woman. For the time being, it seems, this statement was accepted as true, and in the light of it the coroner remarked to a physician who had said on the stand that a doctor need not attend on a case unless he liked: "But you don't go the length of saying that you have a right to stipulate for security of payment before you perform any work, however urgent?" The reply was: "Certainly, you are quite justified to stipulate." It is to this answer that we take exception, and so does the *British Medical Journal.* "We think it was unfortunate," says that journal, "that Dr. M'Kean should have conveyed to the court the impression that the medical profession regards its members as justified in refusing assistance in emergencies unless they are guaranteed payment." "This is a view," it adds, "which it is impossible for the medical profession to indorse."

PROMOTION IN THE ARMY MEDICAL STAFF.

In his annual report the secretary of war made a recommendation in reference to promotion in the army that seems to be of great importance. He advises that the present system of promotion by seniority shall be modified by making a specific proportion of the promotions to each grade by seniority, and a specific proportion on the basis of efficiency records which "exhibit the grounds for promotion." He goes on to say: "Nothing can be more important than that the officers of the army shall feel that their rise in rank depends upon what they do; that ability, intellectual activity, faithful performance of duty, and gallant conduct are more certain claims to preferment than social or political influence. A system of promotions which is divorced from the efficiency record is not merely unjust, but it destroys ambition and checks the efforts of the army. The way to prevent the separation is by a systematic provision to enable every officer to show what there is in him, and to preserve a full record of what he does, by providing a competent and disinterested body to pass judgment on the record, and by a law making the judgment thus reached on this basis the imperative and sole ground of selection for promotion."

The present system of promotion in the army medical corps is by seniority of appointment; in other words, the position a man obtains in his class when he passes the examinations for admission to the medical corps is held by him, barring accidents, during the rest of his military career. It is not the experience of civil life that the man who stood first when he left college maintains that position with reference to his classmates in five years or twenty years or thirty years. And, indeed, it has been the experience of the medical services of the government that the existing system was not infrequently annihilative of ambition, for the man who maintained a fair average could not be superseded by a junior of the same date of commission who maintained the best average, and therefore the first-named rested content with his mediocrity.

Furthermore, the very fact that a low position in a class was the result of his examination has stimulated many a young medical officer to hard mental work that at the end of five years has made him the equal if not the superior of the best of his contemporaries. Again, the attainment of the best intellectual activity is reached after the age fixed for admission to the medical corps of the army, and an officer of fair attainments may develop into one possessed of excellent professional qualifications. Despite these facts the consequence of his early work is made to follow him through life; he receives his promotion not because he is the best, but because he is the senior, officer of his rank.

An instance of the change in the position of the assistant surgeons in their class was shown by a class appointed in November, 1897, in which, at the end of five months' instruction in the Army Medical School, the surgeon who stood last when the class was commissioned stood first in the examinations at the school; and not one of these surgeons held just the position he had obtained in the examination for appointment. Yet this difference in position in a class may result in a difference of months or years in his future promotion. One of the ablest surgeons in the army has criticised the superficial routine work of some young surgeons in these words: "Feeling secure in the possession of a permanent position and income, these young medical officers have early begun to show a disposition to do as little as the regulations will allow." It is not to be believed that this disposition is confined to the younger officers alone.

It would seem, therefore, that it is but just and fair to provide for promotion in the medical corps in accordance with the plan recommended by the secretary of war, or to allow all medical officers of the same date of appointment to compete by examination for promotion to each grade. It is rare that all the members of a class can be promoted in the same year, and either plan proposed would be an incentive to ambition and would do away with the somewhat dispiriting thought associated with the existing system, that, no matter what effort is made, advancement in rank can not be hastened by a day.

THE WATER SUPPLY OF THE CITY OF NEW YORK.

The attempt of a private corporation to secure from the city a contract to furnish an additional supply of water for a period of forty years at $5,000,000 a year has fixed general attention upon the questions connected with the water supply, and early in December the president of the Merchants' Association of New York appointed a committee to inquire into these matters. It is to be presumed that the committee's report will soon be made, for it was the intention that it should be rendered as early as the 1st of February. The following general heads covered the field of the committee's investigation: 1. Is an increased water supply an immediate necessity? 2. What is the best available source? 3. Will the city's present financial condition permit municipal construction? 4. Is a private contract expedient, and is the proposed contract for the public interest? 5. Are amendments to existing statutes regulating the water supply of municipalities, and especially of the city of New York, desirable?

To carry out its work, the committee resolved itself into various subcommittees to deal with specified topics, namely, engineering, municipal finance, and public policy, legislation, and fire protection and insurance. The board of public improvements and the comptroller have offered their assistance in the prosecution of the inquiry, and it is to be hoped that the report will prove satisfactory to the citizens of New York, for the subject is one of vast importance. There are those who believe that Lake George or Lake Champlain will have to be tapped ultimately, but probably this question is not pressing enough to be considered exhaustively in the short time at the committee's disposal. Vitally important as it is that New York should have an abundant and unfailing supply of water, the purity of that supply is a matter of the first necessity. There are three medical men on the committee, and we may hope to see this aspect of the matter duly considered.

ANOTHER OBJECT LESSON IN VACCINATION *VERSUS* SMALL-POX.

In our issue for December 9th we pointed out in a minor editorial the results of vaccination in Puerto Rico as an object lesson on its value in stamping out small-pox. Dr. Lewellys F. Barker (*Maryland Medical Journal* for November 29, 1899) made some remarks before a recent meeting of the Medical and Chirurgical Faculty of Maryland concerning the effects of vaccination in stamping out small-pox in Manila. Dr. Barker says: "When the American army first went to Manila there was a large mortality among American soldiers from small-pox. Among the natives the disease was as common as, and not much more feared than, measles or scarlet fever. A large proportion of the faces one sees in the streets are pitted. Dr. Bourns immediately undertook the vaccination of the whole population of Manila. He had to use at first imported virus, but this being unsatisfactory on account of imperfect communications and the very hot climate, an attempt was made to prepare a virus in the city. Cattle being unattainable, owing to the insurrection, he was forced to institute a *carabao* (water buffalo) vaccine farm. This proved to be very satisfactory, and the lymph produced is as effective as can be desired. Some eighteen Filipino physicians were engaged to vaccinate the native population, and the work was done so thoroughly that when we were in Manila small-pox had been almost entirely stamped out." Will any evidence convince an antivaccinationist?

THE SPECIFICATION OF MAKE IN PRESCRIPTIONS.

The *Lancet* for December 16th closes a very judicious article entitled Proprietary *versus* Official Preparations with the statements that "provided that the drugs supplied by the chemist are of the pharmacopœial standard of purity, the prescriber should be perfectly indifferent as to whether the actual preparation sent to his patient is proprietary or official. A prescription which indicates the name of a maker is necessarily an advertisement." Our London contemporary appears to have in mind preparations that in this country would hardly be denominated proprietary, namely, pharmacopœial preparations made by the wholesale manufacturer. To specify that manufacturer's name in a prescription certainly has the effect of an advertisement, but one with a narrowly limited field; it signifies nothing to anybody but the patient and the apothecary. But, even if it were more potent as an advertisement, we do not see how it is always to be avoided, if we are to have our prescriptions filled most acceptably, for there are other qualities than purity that govern our choice of drug preparations—solubility, for example, and known behavior toward reagents that the preparation will encounter in the alimentary canal.

SOME CURIOUS RESULTS OF A FRACTURE OF THE SKULL.

If Dr. Potel (*Écho médical du Nord*, 1899, No. 10; *Fortschritte der Medicin*, November 29th) is correct in his assumption of a causal relationship between a head injury and a subsequent affection of the elbows in a case reported by him, the case is a curious exemplification of what such an injury may cause. A boy fourteen years old sustained a fracture of the base of the skull. Two months later he had pain in the right elbow, and then in the left, which became so severe that he had to give up work. Potel examined him eight years later, and found impaired mobility of the elbows and crepitus on movement, but without any swelling. Tuberculous disease and syphilis were excluded. Potel thinks that the articular trouble was due to trophic changes taking their rise in the injury to the brain.

ASPHYXIA AS A CARDIAC TONIC.

In its issue for December 18th the *Deutsche Medizinal-Zeitung* chides the *Archiv für experimentelle Pathologie und Pharmakologie* for admitting an article on this subject by Dr. G. N. Durdufi, who maintains that interrupting respiration for a minute or two exerts a tonic effect by giving rise to venosity of the blood, in which condition "epinephrin," the active principle of the suprarenal capsules, performs its physiological function most easily. Some of the author's sentences are called bon mots after the style of Karlchen Miessnick.

THE *KLINISCHE MONATSBLÄTTER FÜR AUGENHEILKUNDE.*

Professor Zehender announces his retirement from the editorship of this well-known ophthalmological journal. He is to be succeeded by Professor Axenfeld, of Rostock, to whom he expresses his indebtedness for material assistance during the past year. Professor Zehender has conducted the *Monatsblätter* for thirty-seven years, and it is hardly to be wondered at that he now resigns it into other hands.

THE PLAGUE MORTALITY.

The virulence of the bubonic plague in India can hardly be overstated, even making all allowance for the wretched physical condition in which it doubtless found thousands of its victims. The Marine-Hospital Service's issue for December 22d of its *Public Health Reports* gives some startling figures of the mortality of the present outbreak up to August 11, 1899, namely, to mention only a few, that there had been in the Belgaum district 29,300 cases, with 22,042 deaths; in the Dharwar district 38,754 cases, with 31,307 deaths; and in the Nassik district 20,162 cases, with 15,480 deaths.

THE *NEW ORLEANS MEDICAL AND SURGICAL JOURNAL.*

In its January issue this excellent journal indulges in some reminiscences, among others that its initial number appeared in 1844 and that it was the first medical journal published south of Louisville, at a time when few physicians in the South had ever offered contributions to medical literature. The journal is one of our highly esteemed exchanges, and it has always seemed to us to bear evidence of that measure of success and influence which comes from strictly following high aims. We believe it is still actuated by such aims, and we look to see it yet more prosperous and influential.

THE CRIME OF FŒTICIDE.

In the course of an otherwise commendable editorial article on Lying-in Hospitals, *Experience* says: "Among Protestants it is held to be no crime to kill the fœtus of an unmarried woman to protect her 'honor,' while all Roman Catholics look upon it as murder." In this our St. Louis contemporary is grievously in error; men of all creeds condemn the crime of fœticide.

A DEFENDER OF THE CORSET.

The *Journal des débats* has recently found a source of amusement in the investigation of a certain Dr. Schlanz concerning the effect of the corset on the shape of the spine. According to a paragraph quoted in the *Écho médical du Nord* for November 26, 1899, it seems that the old painters gave their women crooked backs; Dürer even inflicted one on Eve. Schlanz contends that this was not capricious on the part of the painters; the women who posed for them did not wear corsets. The writer would like to know if Cleopatra had the circumflex back.

NAUSEA AS A HÆMOSTATIC.

The natural defensive powers of the animal organism are manifold. We all recognize the efficacy of fainting as a check to loss of blood, and it seems that even seasickness is sometimes of service. At a recent meeting of the Paris Society of Biology Dr. Onimus mentioned the case of a young man who was subject to frequent attacks of hæmoptysis which nothing but seasickness would control (*Gazette hebdomadaire de médecine et de chirurgie,* October 26, 1899). He is inclined to think that the good effects of ipecac in hæmoptysis are due to the nausea induced by it, and he suggests its employment in other forms of hæmorrhage.

THE LATE REMOVAL OF A BULLET FROM THE BRAIN.

The length of time that a foreign body may remain in the brain without giving rise to grave symptoms is surprising. A notable illustration of the fact was brought to the attention of the recent French Congress of Surgery by Dr. Mondot (*Gazette hebdomadaire de médecine et de chirurgie,* November 2, 1899). A man had been shot in the head three times with a revolver three years and seven months before a trephining was undertaken to remove one of the balls. The man declared that only two of them had been removed at the time of the injury. The ball was found at the depth of about an inch and a half beneath the surface of the brain, and its removal completely relieved the man of his troubles, which were mental disturbances and loss of memory.

ITEMS.

Competition for the American Medical Association Medal.—At the meeting of the American Medical Association, held June 4, 1897, it was resolved to restore the former policy of the association in favor of offering annually a gold medal for meritorious scientific work. The committee for this year, consisting of Dr. George M. Gould, of Philadelphia, Dr. E. Fletcher Ingals, of Chicago, and Dr. T. W. Huntington, of Sacramento, California, desires to direct attention to the following rules governing the competition:

1. The medal shall contain the seal of the United States or a seal of the association, to be hereafter designed, on one side and an Æsculapian staff on the other, together with the name of the recipient of the medal and suitable inscriptions.

2. The commercial value of the medal shall be one hundred dollars.

3. A standing committee on prize medals, consisting of three members of the association, shall be elected by the business committee as follows: One for one year, one for two years, and one for three years, and thereafter one to be elected yearly to hold office until in either case his successor has been duly elected. In no case shall a member of the business committee hold a place on the committee on prize medals.

4. The competing essays shall be typewritten or printed and shall bear no mark revealing their authorship; but, instead of the name of the author, there shall appear on each essay a motto, and accompanying each essay shall be a sealed envelope containing the name of the author and bearing on its outer surface the motto of identification. No envelope is to be opened by the committee until a decision has been reached as to the most deserving essay, and the other essays have been returned to their respective owners. The committee shall have authority to reject and return all essays in case none have been found worthy of the association medal. Competing essays must be in the hands of the committee not later than March 1, 1900. For further information address any member thereof.

Marine-Hospital Service Health Reports.—The following cases of small-pox, yellow fever, cholera, and plague were reported to the surgeon-general during the week ending January 5, 1900:

Small-pox—United States.

Washington, D. C.	Dec. 28	5 cases.	
Cairo, Ill	Dec. 23–30	12 “	
Choctaw Nation, Indian Territory	Dec. 10	80 “ in mining camps.	
New Orleans, La	Dec. 16–30	21 cases.	
Shreveport, La	Dec. 16–30	9 “	
Chelsea, Mass	Dec. 16–30		1 death.
Lowell, Mass	Dec. 23–30	1 case,	1 “
Omaha, Neb	Dec. 23–30	1 “	
Amsterdam, N. Y	Dec. 16–31	1 “	
New York, N. Y	Dec. 16–23	1 “	
Cincinnati, Ohio	Dec. 22–29	1 “	
Cleveland, Ohio	Dec. 16–30	4 cases.	
Allegheny, Pa	Dec. 16–23	3 “	
Pittsburgh, Pa	Dec. 16–30	2 “	
Greenville, S. C	Dec. 7–30	4 “	
Nashville, Tenn	Dec. 23–30	2 “	
Salt Lake City, Utah	Dec. 16–23	1 case.	
Portsmouth, Va	Dec. 23–30	10 cases,	2 deaths.

Small-pox—Foreign.

Antwerp, Belgium	Dec. 2–9	5 cases,	3 deaths.
Rio de Janeiro, Brazil	Nov. 3–17		111 “
Gibraltar	Dec. 2–17	3 “	1 death.
Athens, Greece	Dec. 2–9	5 “	1 “
Bombay, India	Nov. 21–28		14 deaths.
Moscow, Russia	Nov. 25–Dec. 2	1 case.	
Odessa, Russia	Dec. 2–9	3 cases,	1 death.
Warsaw, Russia	Nov. 25–Dec. 2		8 deaths.
Madrid, Spain	Dec. 2–9		7 “
Smyrna, Turkey	Dec. 3–10		1 death.

Yellow Fever—Foreign.

Rio de Janeiro, Brazil	Nov. 3–17		6 deaths.
Panama, Colombia	Dec. 19–26	1 case.	
Matanzas, Cuba	Dec. 29		1 death (soldier).

Cholera.

Bombay, India	Nov. 21–28		4 deaths.
Calcutta, India	Nov. 4–18		25 “

Plague—United States.

Honolulu, Hawaii	Dec. 11–18	2 cases,	2 deaths.

Plague—Foreign.

Bombay, India	Nov. 21–28		137 deaths.
Calcutta, India	Nov. 4–18		77 “
Kurrachee, India	Nov. 18–25	3 cases,	1 death.

Honors for Dr. Thomas Lauder Brunton.—According to the *Boston Medical and Surgical Journal,* January 4th, Dr. Thomas Lauder Brunton, physician to St. Bartholomew's Hospital, London, has been knighted.

The Buffalo Academy of Medicine.—At the last meeting of the Section in Ophthalmology, Otology, Rhinology, and Laryngology, on Monday evening, the 8th inst., the following papers were presented for discussion: Old Facts and New Theories concerning Eye Strain, by Dr. Lucien Howe; and A Case of Tuberculous Tumor of the Nasal Sæptum, by Dr. J. C. Clemesha.

At the last meeting of the Section in Medicine, on Tuesday evening, the 9th inst., the following papers were read: Typhlitis and Scolecitis, by Dr. A. L. Benedict; and The Treatment of Acute Appendicitis, by Dr. De Lancy Rochester.

The Eastern Medical Society of the City of New York.—At the last regular meeting, on Friday evening, the 12th inst., the programme included the presentation of patients and the exhibition of new instruments and specimens as follows: Interesting skin cases and genito-urinary instruments, by Dr. Ludwig Weiss; an interesting case of chorea and a case of abnormal growth of a nail following amputation of the second phalanx, by Dr. George I. Miller; a case of general *Staphylococcus aureus* infection, by Dr. A. A. Berg; fibroid of the uterus, and blood mole, by Dr. Louis J. Ladinski; imperforate uterus with large hæmatoma of the ovary, by Dr. H. J. Garrigues; and a combined uterine endoscope and cystoscope, by Dr. Augustin H. Goelet. Dr. Henry Levien read a paper on Modern Medical Journalism.

The St. Louis Medical Society.—At the last regular meeting, on Saturday evening, the 6th inst., Dr. J. Ellis Jennings read a paper entitled Torpor of the Retina from Exposure in the Klondike.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 30, 1899, to January 6, 1900:*

Carr, L. C., Major and Surgeon, United States Volunteers, will proceed to Songo, Cuba, and make a medical inspection of the camp at that place, and return to Santiago.

Darnall, Carl R., First Lieutenant and Assistant Surgeon, United States Army. The leave of absence granted him is extended fifteen days.

Hartnett, E. E., Acting Assistant Surgeon, United States Army, will proceed to Imus, Luzon, for duty.

McLean, Allen D., Acting Assistant Surgeon, United States Army, will proceed from Fort Wayne, Indiana, to San Francisco, for duty.

Russell, Frederick F., First Lieutenant and Assistant Surgeon, United States Army, will relieve Swift, Eben, Major, Puerto Rico Battalion, from his duties as acting alcalde of Humacao, Puerto Rico, and will conduct the business thereof until after the election and installation of an alcalde.

Summerall, William B., Acting Assistant Surgeon, United States Army, will report at Hamilton Barracks, Matanzas, Cuba, for temporary duty.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the United States Marine Hospital Service for the Seven Days ending January 4, 1900:*

McIntosh, W. P., Surgeon. To proceed to Columbia, Tennessee, for special temporary duty.

Perry, J. C., Passed Assistant Surgeon. To proceed to Manila, Philippine Islands, for temporary duty.

Fricks, L. D., Assistant Surgeon. Assigned to duty as assistant to the director of the Hygienic Laboratory, Washington.

Moore, Dunlop, Assistant Surgeon. Relieved from duty at San Francisco and directed to proceed to Portland, Oregon, and assume command of the service.

Currie, D. H., Assistant Surgeon. Relieved from duty at Louisville and directed to proceed to Washington and report to the director of the Hygienic Laboratory for temporary duty.

Society Meetings for the Coming Week:

Monday, *January 15th:* New York Academy of Medicine (Section in Ophthalomology and Otology); New York County Medical Association; Hartford, Connecticut, Medical Society; Chicago Medical Society.

Tuesday, *January 16th:* New York Academy of Medicine (Section in General Medicine); Buffalo Academy of Medicine (Section in Pathology); Ogdensburgh, New York, Medical Association; Syracuse, New York, Academy of Medicine; Medical Societies of the Counties of Kings (annual) and Otsego (semiannual—Cooperstown), New York; Connecticut River Valley Medical Association, Vermont, (Bellows Falls); Baltimore Academy of Medicine.

Wednesday, *January 17th:* Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark); Philadelphia County Medical Society.

Thursday, *January 18th:* New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Massachusetts, Society for Medical Improvement (private); Medical Society of City Hospital Alumni, St. Louis; Atlanta Society of Medicine.

Friday, *January 19th:* New York Academy of Medicine (Section in Orthopædic Surgery); Clinical Society of the New York Post-graduate Medical School and Hospital; Baltimore Clinical Society; Chicago Gynæcological Society.

Births, Marriages, and Deaths.

Married.

Barnesby—Campbell.—In New York, on Thursday, January 4th, Dr. Percy Norman Barnesby, United States Marine-Hospital Service, and Miss Mae Pauline Campbell.

Delaup—Roux.—In New Orleans, on Tuesday, January 9th, Dr. Sidney P. Delaup and Miss Gabrielle Roux.

Fuller—Muir.—In New York, on Thursday, January 4th, Dr. David J. Fuller, of Brooklyn, and Miss Olive Beatrice Muir.

McAneny—Jacobi.—In New York, on Thursday, January 4th, Mr. George McAneny and Miss Marjorie Jacobi, daughter of Dr. Abraham Jacobi.

Newberry—Speers.—In Jersey City, on Wednesday, January 3d, Dr. Nelson Edwards Newberry and Miss Elizabeth Hamilton Speers.

Stewart—Hutchins.—In Brooklyn, on Tuesday, January 2d, Mr. Frederick Stewart and Miss Gertrude Hutchins, daughter of Dr. Alexander Hutchins.

Died.

Arrowsmith.—In Keyport, New Jersey, on Wednesday, January 3d, Dr. Joseph Edgar Arrowsmith, in the seventy-seventh year of his age.

Coker.—In New Orleans, on Wednesday, January 3d, Dr. John H. Coker, in the fifty-fourth year of his age.

Hammond.—In Washington, on Friday, January 5th, Dr. William A. Hammond, in the seventy-second year of his age.

Sullivan.—In Gadsden, Tennessee, on Sunday, December 31, 1899, Dr. Charles L. Sullivan.

Obituaries.

WILLIAM A. HAMMOND, M. D., LL. D.

On Friday, January 5th, Dr. Hammond died suddenly at his home, in Washington, in the seventy-second year of his age. His splendid physical endowments endured to the last, and a stranger might readily have taken him for a much younger man. He was born in Annapolis, and took his degree in medicine at the Medical Department of the University of the City of New York. Soon after his graduation he entered the medical corps of the army and served until the autumn of 1860, when he resigned and took the chair of anatomy and physiology in the University of Maryland. On the outbreak of the civil war he again joined the medical corps of the army. In the course of a few months he was appointed surgeon-general. While he held that office he did much to improve the service and to turn the experience of the war to the advantage of medicine. At length, however, accusations were brought against him which led to his dismissal. Several years later he was reinstated by a special act of Congress and put upon the retired list, without pay. His original appointment as surgeon-general was owing in great measure to his earnest recommendation by members of the United States Sanitary Commission, an organization of citizens, including several eminent members of the medical profession, which did a great deal to facilitate the satisfactory conduct of the work of relieving the sick and wounded and acquired considerable influence with the government. It is thought to have been owing to the persuasion of one of the medical members of the commission that Surgeon-General Hammond issued his famous order prohibiting the use of certain drugs in the army, except under conditions specified in the order. This order gave rise to much acrimonious comment at the time, and it did not long remain in force. About a year ago Dr. Hammond informed us that he was about to write an account of the causes which led him to issue the order, and expressed the wish that it should be published in this journal, but we have never received the manuscript.

On leaving the army, Dr. Hammond came to New York and began practice as a specialist in neurology. He had before that done some creditable work in physiology, and perhaps that naturally led him into neurology. Among other investigations was one, carried on in conjunction with Dr. S. Weir Mitchell, concerning the properties of erythrophlœine, an alkaloid obtained from the bark of *Erythrophlœum guineense*, or "sassy-bark," said to be used by the natives of Sierra Leone in the preparation of an ordeal poison. Dr. Hammond at once took a prominent position in the New York profession. He turned his abilities as a writer to good account. He founded two medical journals, the *Quarterly Journal of Psychological Medicine and Medical Jurisprudence* and the *New York Medical Journal.* The contents of the quarterly consisted largely of his own writing, and it was of a character to gain for him a great reputation. Before long he was made professor of diseases of the mind and nervous system in Bellevue Hospital Medical College and subsequently in the Medical Department of the University of the City of New York. A few years later he took part in founding the New York State Hospital for Diseases of the Nervous System, and afterward became a member of the faculty of the New York Post-graduate Medical School. In the course of his career in New York he wrote a treatise on diseases of the nervous system and one on insanity. Both books were received with favor by the profession and added largely to Dr. Hammond's reputation. Perhaps his most important service to neurology was his recognition and admirable description of a morbid condition known by the name he gave it, athetosis. He did not long keep up his connection with medical journals, medical schools, and hospitals, and after a time he was no longer a frequent contributor to medical literature. At length he took to amusing himself with writing fiction. The first of his stories, entitled *Lal*, met with considerable commendation; the four or five others were not so well received. A few years ago Dr. Hammond conceived a great liking for the city of Washington. He bought property in that city, built a handsome residence and a private hospital, and changed the scene of his career. After he left New York he frequently came back for brief visits, and on such occasions he was almost sure to put in an appearance at the office of this journal, where, no matter what the perplexities of the "make-up," he was always welcomed.

Since Dr. Hammond died the remark has more than once been made that he came very near being a great man. He committed errors, errors that a man of narrower intellect but greater worldly wisdom would be tolerably sure to avoid, and some of them led to cruel aspersions of his moral character. It has always seemed to us that he lacked inflexibility of purpose; scheme after scheme, all laudable and promising (as he pictured them), would arise in his mind, for he was optimistic almost to the verge of the visionary, but some defect that a more prudent man would have guarded against too often barred their fruition. His enthusiasm in these schemes was so manifestly the dominator of his thoughts that it was useless for his friends to argue against it. At the same time Dr. Hammond was an exceptionally fair man in argument, always ready to concede gracefully any point scored by an opponent. He was a charming companion, faulty, but, it is our conviction, guileless.

Pith of Current Literature.

Dog's Tongue (Cynoglossum officinale) in the Treatment of Cancer.—M. Sokrate Tzakona and M. Poulopoulos, of Athens (*Archives orientales de médecine et de chirurgie*, October, 1899; *Nouveau Montpellier médical*, November 12, 1899), have successfully employed powdered cynoglossum in the treatment of cancer and of certain tuberculous ulcerations. The wound is washed with borated sterilized water and the powder freely applied twice daily and covered with a sterilized bandage. M. Poulopoulos says that the powder given internally in doses of from thirty to seventy-five grains daily has, according to seven observations made by him, a favorable action in neoplasms of the stomach. In one case of phagedenic ulcer of the groin the results were not so satisfactory. It is certain, however, says M. Poulopoulos, that cynoglossum can be advantageously used in cancerous ulcerations in which curettage or free incision are contraindicated.

Recurrent Insanity. — Dr. Hugh Kerr, assistant medical officer to Bucks County Asylum (*Glasgow Medical Journal*, December, 1899), from an exhaustive analysis of cases, formulates the following conclusions: "1. That recurrent cases form a large proportion of the curable cases admitted into asylums. 2. That in these cases hereditary predisposition to insanity is present in a greater number than in primary cases. 3. That alcoholic or other excess is a frequent factor in the causation of relapses. 4. That in cases in early life, menstrual irregularities in the female and masturbation in the male are frequently present. 5. That the puerperal period and the periods of gestation and lactation account for a large proportion of female recurrent attacks. 6. That the climacteric period in both sexes is a potent predisposing or exciting cause. 7. That the majority of the attacks occur in middle life; the first attack, however, is most frequent in the adolescent period, and is later in males than females. 8. That the prevailing forms of insanity are maniacal, melancholic forms being almost restricted to the middle period of life. 9. That the tendency is toward recovery, minor relapses being frequent before complete convalescence. 10. That the largest proportion of chronic cases is found in second attacks. 11. That in many of the cases a certain periodicity is established, the tendency, however, being toward chronic insanity. 12. That this class of patients furnishes many who are dangerous to themselves and others, a danger which is increased by the impulsive character of their acts, and the frequent absence of marked premonitory symptoms before the onset of the attack."

An Ovarian (?) Abscess Opening through Sinuses and Healing without Operation.—Dr. Louise C. Drouillard (*Woman's Medical Journal*, December, 1899) records the case of a colored widow, aged sixty-six, whose first labor occurred at the age of eighteen, lasted seventy-two hours, and terminated spontaneously. The patient had fever following the labor for a week, but made a good recovery. The following year she gave birth to a second child; labor lasted five days, when the child was delivered with forceps, the parturient canal being badly lacerated and bruised. Her condition was grave; her physicians believed her dying and left her. She rallied, however, to pass through a long attack of puerperal septicæmia, complicated by bedsores and a vesico-vaginal fistula, resulting from the long and continued pressure upon the soft parts. It was a year before recovery took place. The year following recovery she was operated upon for the vesico-vaginal fistula without success. Menstruation returned about a year after the birth of her second child; was regular, but very painful. She suffered with pain in the back and a profuse leucorrhœa. In 1870 the patient began to suffer with pain in her right side, which extended down the limb. This pain grew gradually worse, first with each returning menstruation, then between periods, soon becoming continuous. In 1880, a tumor, which was ovarian in all probability, had reached the size of a five-months' pregnancy. About this time an external sinus appeared in the right side of the gluteal fold. Three years later a second sinus made its appearance in the median line, halfway between the umbilicus and the pubes. Five or six months elapsed when a third sinus appeared in the right groin; in two or three years more the last and fourth external sinus appeared at the umbilicus. The sinus which was the first to appear subsequently opened into the bladder, discharging its pus with the urine. Pain was constant and quite severe. Opium was given for its relief with increasing doses. She went to bed some time in 1880, and in that year menstruation stopped. The author first saw her in February, 1892. She had been in bed eleven years; the tumor on her right side was the size of a man's head, and was discharging a pint of pus a day. She had a temperature of 102° F., cough and night sweats, and the muscles had undergone degeneration. She had not been out of bed for the eleven years except to be lifted out occasionally for change of bedding. The author advised that the opium be discontinued, which was promptly done, and has not been again resumed. Dr. Drouillard examined the tumor as best she could, being impressed with the idea that if a tube could be introduced into the sinus at the umbilicus it might be possible to wash out the abscess. A No. 3 catheter was introduced without trouble, and when attached to a fountain syringe water flowed freely through all of the sinuses. After three months' washing with peroxide of hydrogen and a saturated solution of salicylic acid, the tumor was reduced to the size of an orange; the abdomen, which had been distended, was flaccid and retracted. In six months the patient had learned to walk again by means of manipulation and rubbing of the muscles by friends who visited her from time to time. The following summer she served the author as cook. She is now well and able to work at whatever she pleases. The sinuses have all healed. A varicose ulcer upon one of her limbs, now yielding to treatment, is the only evidence of disease she bears. To account for the hard labors the patient had had, Dr. Drouillard found, on examination of the pelvis, a conjugate diameter of three inches.

The Management of the Third Stage of Labor.—Dr. George Cole-Baker (*Dublin Medical Journal*, December, 1899), formerly examiner in midwifery at the University of Dublin, concludes a paper on this subject by directing attention to the following points: 1. The great importance of the careful treatment of the third stage of labor, and unceasing control of the uterus from just before the commencement of this stage of labor till it is concluded, and afterward if necessary. 2. The binder in many cases is a luxury, and superfluous. 3. The advantages of three ligatures on the umbilical cord, with some precautions to be observed in their application. 4. That Credé's method of expression relates only to the first step of the third stage. 5. That traction (*vis a fronte*) is equally good, if not preferable, treatment to "detrusion" in the second step of the third stage. 6. That an ideal and perfectly satisfactory treatment for the third and last step of the third stage has yet to be described.

Agorophobia Caused by Aural Lesions.—Lannois and Tournier (*Annales des maladies de l'oreille*, October, 1898; *American Journal of the Medical Sciences*, January, 1900) have formulated the following conclusions regarding agorophobia (used here to mean fear of crossing an open space, like a wide street or square) in an ætiological relation to ear diseases, based on the observation of ten cases: 1. Agorophobia is not a primary affection; it is a syndrome, making its appearance only in a special neuropathic soil. 2. A cause of agorophobia, rather than any other phobia, is, in a very large number of cases, the production by an aural lesion of subjective noises and vertigo. 3. When the determining cause has been a fright not connected with a vertigo, aural lesions are very frequently the reason for the continuance of the agorophobia.

Upon this the editor of the *American Journal* comments as follows: "From reading the notes of the cases presented by the authors we are forced to conclude that the agorophobia they describe was in reality ear vertigo. The latter disease always brings with it an unwillingness to leave the house alone or to cross the street or an open space, because if alone the patient is deprived of the support of posts, walls, etc., obtainable on the sidewalk."

Endocarditis Consequent upon Amygdalitis. — Dr. Frederick A. Packard (*American Journal of the Medical Sciences,* January, 1900) reports five cases of endocarditis occurring in the course of amygdalitis. The evidence of the cases being actually endocarditis is fully considered, and subsequently the probability of the amygdalitis being rheumatic; or, in other words, of both endocarditis and amygdalitis being examples of larval, latent, or abarticular rheumatism. The literature of the subject is fully noted, and the author says: "I believe these cases to have been plain cases of acute tonsillitis and pharyngitis, having no connection with rheumatism, and that the endocarditis arose as a direct consequence either of infection of the endocardium by micro-organisms, which gained entrance by way of the tonsils, or of structural change in the mitral leaflets, brought about by coagulation necrosis or other result of the chemico-vital action of toxines produced by micro-organisms present in the throat and absorbed from the inflamed tissues. In support of the former theory of their causation, I would here refer only to the fatal case of tonsillitis reported by Charrin in *La Semaine médicale* for 1897, p. 105, where, at autopsy, the *Staphylococcus aureus* was found both in the tonsil and in the vegetations upon the valves of the pulmonary artery. The only connection that I can see between these cases and rheumatism is in the fact that the tonsillitis and pharyngitis in any of them *might* have been followed by arthritis."

The Stigmata of Hysteria.—Dr. Byron Robinson (*Western Medical Review,* December 15, 1899) describes the stigmata of degeneration as follows:

1. Hyperæsthesia of the skin, which consists in exaltation of the sensory periphery. These areas, hysterogenetic zones, are especially found on the skin of the abdomen. They are painful or oversensitive to touch. The patient is often deceived by thinking that the pain in the skin of the groin refers to the ovary. Hysterogenetic zones, or hyperæsthetic areas, occur all over the body, but in the sexual region they are apt to be more typical on account of the patient's attention being directed to them. The skin over the kidney may be so hyperæsthetic and tender that grave kidney disease may be suspected. The skin over any abdominal viscus may be so tender that touching it induces the patient to scream, while the viscus itself is quite healthy. Hyperæsthesia exists chiefly on the right side; pinching or pricking the skin enables one to discern its zones. Hyperæsthesia of the skin on the abdomen may exist with or without healthy genitals. Of course it is more liable to exist with diseased genitals, as the genitals may be the debilitating agent inducing the hysteria. The patients who are disturbed by crawling sensations on the skin, as of snakes or ants, have hyperæsthesia, and hence have hysteria. Hyperæsthetic spots anywhere on the body are stigmata of hysteria. The hyperæsthesia of the skin may change its location. The frequency of skin hyperæsthesia in the clinic induces the author to believe in the wide distribution of hysteria independently of gynæcology.

2. Anæsthesia of the skin is also another stigma of hysteria. This is not so frequent in the clinic. The patient complains of the skin being numb and without feeling. It is found perhaps most frequently on the skin of the abdomen. Anæsthesia exists chiefly on the left side of the body.

3. Anæsthesia of the mucosa is one of the stigmata of hysteria seldom absent. The test is easily made by taking a pin with a small glass head and rubbing it over the eyeball. If the conjunctiva bulbi is anæsthetic, one can rub the pinhead over the eyeball without a wink or flinch from the patient. Normally the conjunctiva is very sensitive, and to touch it produces reflex actions, tears, and pain. Rarely in hysteria does the rubbing of the pinhead on the eyeball produce reflexes, tears, or pain. Of course there are many grades of anæsthesia of the conjunctiva bulbi. Corneal anæsthesia is the least frequent. Anæsthesia of the throat is tested by a lead pencil or sound. On rubbing the mucosa of the throat no reflexes or pain arise. As Windscheid remarks, however, the diagnosis of hysteria should not be made from anæsthesia of the throat alone, as in healthy subjects the mucosa of the throat may show various degrees of anæsthesia.

4. Hyperæsthesia of the mucosa must be remembered among the stigmata of hysteria, though it is infrequent. The persistent feeling of animals crawling in the tractus intestinalis is no doubt a symptom of an overtender mucous membrane. The sudden expulsion of unchanged foods from some stomachs immediately after eating is no doubt due to hyperæsthesia of the gastric mucosa.

5. Hyperæsthesia of the viscera is one of the known stigmata of hysteria. Perhaps visceral hyperæsthesia exists most frequently in the ovary. In such cases the ovary is hypersensitive to touch, yet normal in size and position, perfectly mobile, with no peritoneal adhesions or fever. Castration does not affect the pain, unless to exacerbate it. The irritable uterus of the old doctors is undoubtedly of hysteric nature. To show that such cases are hysteric, the uterus, oviducts, ovaries, and spleen have been removed, but the pain has persisted just as before the operation. Hyperæsthesia of the cord and testicle frequently exists. Vaginismus is perhaps as typically hysterical as any example of the viscera. It may be called up by the thought of touching the vulva. It is chiefly of psychical origin and occurs in neuropathic individuals.

The *hymen* has been extirpated in vaginismus, but without good effect. There can be little doubt that hysteric bladders frequently arise in practice. The author once treated a patient during two years for an hysteric bladder. Drugs had little or no effect. Rest in bed made no change. Suggestion proved the best treatment. The urine was normal. It was the so-called irritable bladder hysteria. The patient with irritable or hysteric uterus is the one who prepares for her child's advent by making the clothing, sending for the midwife, and suffering from lower pains, finally calling the obstetrician when labor does not complete itself, only to find that she is not even pregnant. She is misled by her irritable, hyperæsthetic, hysteric uterus. The abdominal cramps, colic, etc., of certain neuropathic patients are doubtless due to visceral hyperæsthesia or hysteria.

6. The muscular stigmata of hysteria are quite common and consist of paresis or paralysis or of exaggerated contraction of one or more muscles. When the tongue temporarily ceases to act with subsequent normal action the complaint is quite sure to be hysterical in nature. Globus hystericus is simply exaggerated activity of the œsophageal and gastric muscles. Hysteric knee is spasmodic contraction of the muscles supplying it. The lost voice is frequently of an hysterical nature, due to disturbances of laryngeal muscles. The "lumps" or tumors in the abdomen of many patients are simply the contractions of certain abdominal muscles, and are frequently accompanied by hyperæsthesia of the skin over them. The patient complains of a tender tumor. The diaphragm or groups of muscles become spasmodic. Another stigma of hysteria is perverted mental action. Hysteria as chiefly manifest to the gynæcologist is a psychical disease. It is a part of a neurosis, very changeable, and ever presenting new pictures. It doubtless rests on a psychopathic condition; the psychosis rests also, no doubt, on a defective system. An irritable weakness exists in the nervous system. The central or peripheral nervous system is defective. The hysteric condition is especially susceptible to influence or suggestibility.

7. Exaltation of special senses. (*a*) *The olfactory nerve* is exalted. The patient smells intense or unaccountable odors. (*b*) *The sight organ* is exalted and the curtains must be all drawn down. Light is not tolerated. (*c*) *Hearing* becomes so exalted and sensitive that one must not walk across the floor or jar the bed; even some distant ticking clock must be stopped. (*d*) *Organs of taste* are disordered, exalted, or vicious. These special exaltations persist in definite periods.

Hereditary or congenital defect is a large factor. Whatever debilitates the nervous system, local or general, invites hysteria as a provocative agent. It should be remembered that genital disease of infectious nature is debilitating, and hence is followed frequently by hysteria. Sexual disease in man or woman no doubt plays a vast rôle therein. Of special interest are the hyperæsthetic zones of the abdomen—*i. e.*, the periphery of its sensory nerves.

Hysterical pain is the irritation caused by disturbances in the cerebro-spinal system. This pain is limited to no organ or nerve zone. It exists perhaps equally among men, women, and children. Hysteria has no more to do with the uterus that with the liver or testicle. It is not a gynæcologic disease. It exists independently of nerve distribution. It is not influenced by rest and scarcely perhaps drugs. The fundamental cause of hysteria is heredity, the transmission of defects or of a neuropathic condition. The provocative agent of hysteria is some debilitating effect, mental or physical. The two chief therapeutic agents for hysteria are (*a*) suggestion and (*b*) limited galvanic electricity. Hyperæsthesia may perhaps exist in any viscus, and the typical characteristic of hysteria being hyperæsthesia of the abdominal skin, may be one of its common attributes which could be found anywhere on the skin if sought. When a rational treatment is systematically carried on against a painful local disturbance without effect, the probability is that it is an hysteric hyperæsthesia. The excessive vomiting of pregnancy often has an hysteric base—hyperæsthesia of the gastric mucosa. In the same hysterical category must often be numbered coccygodynia, coxalgia, irritable bladder, breast, and uterus, vaginismus, pruritus, dysmenorrhœa, and lumbo-sacral symptoms. A knowledge of the above factors is particularly valuable to the operator, as the sweeping removal of organs for neurosis or hyperæsthesia is criminal. Remember that morbid sensibility lies chiefly in the skin, and the patient will complain more of a skin pinch than a deep-seated injury. What the hysteric coxalgia or hysteric knee is to the surgeon so is the hyperæsthesia of the abdomen to the gynæcologist.

Proceedings of Societies.

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Meeting of October 4, 1899.

The President, Charles E. Quimby, M. D., in the Chair.

Dr. Samuel Alexander, the retiring president, in relinquishing the chair, said: When a year ago you paid me the compliment of electing me president of this society I expressed my thanks to you for the honor conferred upon me. I desire now to reiterate those thanks, to thank you for the great courtesy and kindness with which I have been treated during my term of office. I appreciate fully the honor that has been done me, and it now gives me very great pleasure to have the opportunity to present to you my successor in the presidential chair—Dr. Quimby. I feel sure that under his guidance the society will continue to prosper and to grow as we all wish it to.

Inaugural Address of the President.—Dr. Charles E. Quimby (see page 37).

Salivary Calculus.—Dr. J. H. Woodward presented a salivary calculus, weighing a gramme and a half, that he had recently removed from the substance of the right submaxillary gland. The patient was fifty-five years of age and had had attacks of swelling in the floor of the mouth at intervals for a period of fifteen years. These attacks would subside in a few minutes, or sometimes not for a few hours. The last one had been last May, and had been associated with pain darting into the tongue. This had led her to examine the mouth with the finger, with the result that she had discovered the hard mass. She had then been referred to the speaker, and examination had shown the mass to be situated in the gland. The introduction of a needle detected the presence of a hard substance like a calculus. It had been necessary to press firmly from the outside in order to bring the mass within reach. Wharton's duct had not been at all implicated. The calculus had been very firmly adherent, so that it had been necessary to dissect the gland entirely away before the calculus could be removed. Dr. Woodward said that he had previously seen the patient's brother because of accumulations of fluid in his right submaxillary gland, but not associated with a calculus.

Book Notices.

Anæmia and Some of the Diseases of the Blood-forming Organs and Ductless Glands. By BYROM BRAMWELL, M. D., F. R. C. P. Ed., F. R. S. Ed., Physician to the Royal Infirmary, Edinburgh, etc. Edinburgh: Oliver and Boyd. London: Simpkin, Marshall, and Co., Limited, 1899. Pp. 450. [Price, 12*s.* 6*d.*]

THE work before us is one of those finished and scholarly productions that are all too uncommon in medicine, and it certainly is unnecessary for the preface to describe it as representing "a great deal of clinical observation and hard work," for very obviously that is the fact. The work is essentially a clinical one; by this it is not implied that completeness is thereby sacrificed, but rather that the quality is intensely practical. Historical notes are included and pathological matters are sufficiently discussed, but the production is that of a clinician and is addressed to clinicians. If this class of readers take no interest in the book, it will reflect only upon themselves.

The diseases presented are anæmia, chlorosis, pernicious anæmia, leucocythæmia, Hodgkin's disease, Addison's disease, myxœdema, exophthalmic goître, and acromegaly. A feature of their presentation is the separate and analytical discussion of symptoms, the condensed histories of cases, and the very graphic tabulations designed to make prominent the various symptoms encountered. The work, as the author informs us, is essentially based upon his own clinical and pathological experience, and from that fact we are the gainers. The references to the work of others are, however, frequent, and a recent American author is quoted extensively.

The book is delightful reading, full of most important information, and characterized by that scholarliness that we have come to regard as an essential attribute of that class of English writers which Dr. Bramwell represents.

Lectures upon the Principles of Surgery. Delivered at the University of Michigan by CHARLES B. NANCREDE, A. M., M. D., LL. D., Emeritus Professor of General and Orthopædic Surgery, Philadelphia Polyclinic, etc. With an Appendix containing a *Résumé* of the Principal Views held concerning Inflammation by WILLIAM A. SPITZLEY, A. B., M. D., Senior Assistant in Surgery, University of Michigan. Illustrated. Philadelphia: W. B. Saunders, 1899. Pp. 11 to 398. [Price, $2.50.]

As indicated by the title, this work consists of a number of lectures delivered by the author at the University of Michigan, arranged in book form. The introductory chapter calls our attention to the student's urgent need of a proper understanding of the underlying principles of surgery, to enable him to cope successfully with the problems which he will meet with in the practice of the art. Lectures two to nine are devoted to the subjects of hyperæmia and inflammation. The author in these pages has justly laid special stress on the importance of distinguishing hyperæmia (congestion) from inflammation. The former, he says, is due to disturbances of the vasomotor system, while the latter is to be accounted for by the presence of some microorganism acting as the exciting cause. The writer furthermore carefully takes us through the pathological conditions found in both affections, not concluding the subject before he has brought his reader to a clear comprehension of it. The treatment of inflammation is next considered, and the author's exposition of it leaves nothing to be desired.

The topics treated of under the head of changes in the blood include leucocytosis, the diminution of hæmoglobin, thrombosis, thrombophlebitis, thromboarteritis, embolism, metastatic processes, and fat and air embolism. We are pleased with the author's succinct yet lucid handling of these interesting conditions. As concerns the lectures on the subjects of surgical fevers and intoxication, we find nothing which does not meet with our approbation, though we might perhaps suggest the value of cultures in the diagnosis of erysipelas, for we think they are a great aid in cases in which we are confronted with the signs of infection before the characteristic cutaneous manifestations become apparent. The subject of tuberculosis, although handled in the same masterly manner which characterizes the author's previous efforts, suffers somewhat from its consideration being rather too curtailed for so important a condition. The concluding lectures on the treatment of shock, the proper sterilization of instruments and dressings, the use of anæsthesia, both local and general, differ but little from the reading matter of other good contemporary works. The laws governing aseptic and antiseptic surgery have been so generally followed in the past few years as to leave no room for dissension.

The volume concludes with an appended *résumé*, by Dr. William Spitzley, of the principal views held concerning inflammation. The writer makes no comment on those gathered from the various writers, but allows the reader to draw his own conclusions. The print and paper are excellent and the bookmakers' work leaves little to be desired.

A Contribution to the Surgery of Fractures and Dislocations of the Upper Extremity. Based upon an Analysis of about Seven Hundred Consecutive Cases observed at the Manchester Royal Infirmary. By J. E. PLATT, M. S. (Lond.), F. R. C. S., Honorary Surgeon to the Hulme Dispensary, etc. Illustrated by Twenty-three Drawings and Skiagrams. London: H. K. Lewis, 1899. Pp. x–225. [Price, 10*s.*]

THIS little work is almost entirely a reprint of a series of articles which the author contributed to the *Medical Chronicle* during the eighteen months preceding its appearance. The material on which they were founded includes six hundred and eleven fractures and one hundred and twenty-nine dislocations of the upper extremities, occurring during his service as resident surgical officer of the Manchester Royal Infirmary.

The writer, although not presenting us with any new facts, has succeeded in giving us a number of interesting cases for study, and furthermore, by a complete tabulation of all injuries cited, has rendered them more accessible for comparison, including as they do all the conditions found at the time of accident, together with the treatment followed and the final results.

The author's remarks on fractures of the clavicle are perhaps rather too discouraging. He prefers Sayre's method of treatment with adhesive strapping, but concludes that few cases escape deformity; he has omitted, however, to make mention of the advantages of enforced rest in cases in which we are anxious to obtain the best cosmetic effects. As regards the humerus, he makes no provision against the occurrence of shortening in oblique fractures, but treats them in the same manner as the transverse.

The work is well illustrated both with diagrams and with Röntgen-ray pictures, the latter being chiefly drawn from the collection of Mr. G. A. Wright.

A Text-book of Physiology. By Winfield S. Hall, Ph. D. (Leipsic), M. D. (Leipsic), Professor of Physiology, Northwestern University Medical School, Chicago, etc. Illustrated with Three Hundred and Forty-three Engravings and Six Colored Plates. Philadelphia and New York: Lea Brothers & Co., 1899. Pp. 671.

To one familiar with the text-books of physiology of the last few years Professor Hall's work comes as something new, and perhaps its most striking characteristic is its richness in the details which are usually given over to the physiological chemist. This alone serves to make it an especially valuable book for the student whose work lies in both fields. Fullness, conciseness, and happy arrangement of subject-matter and headings are met with throughout. Much space is devoted to the discussion of questions of the physiology of the cell and to problems in general physiology, and in many places useful historical matter has been inserted in a way that lends interest to the subject. Of the figures, several represent physiological apparatus, and almost all are excellent.

Physiology. A Manual for Students and Practitioners. By Howard D. Collins, M. D., Assistant to the Attending Surgeon of the Roosevelt Hospital, etc., and William H. Rockwell, Jr., M. D., Assistant Demonstrator of Anatomy, College of Physicians and Surgeons (Columbia University), etc. Series edited by Bern B. Gallaudet, M. D., Demonstrator of Anatomy and Instructor in Surgery, College of Physicians and Surgeons (Columbia University), etc. Illustrated with One Hundred and Fifty-three Engravings. Philadelphia and New York: Lea Brothers & Co., 1899. Pp. 323. [Price, $1.50.]

The authors state in their preface that no claim is to be made for original research in the preparation of the volume, but that the material for their work has been drawn from the standard text-books of the day and from notes of lectures delivered at the School of Medicine of Columbia University, New York. The book is not intended to be used as a text-book solely, but rather to help the student in preparing for his lectures in advance. The volume is larger than the familiar quiz compend, not only as it does including purely physiological problems, but giving considerable space to histology and to the physiological consideration of certain pathological conditions as well, thus directly calling the attention of the student to the close relationship existing between these cognate subjects.

The book is freely illustrated with drawings which are quite in keeping with the rest of its attractive matter.

Handbook of Optics for Students of Ophthalmology. By William Norwood Suter, B. A., M. D., Professor of Ophthalmology, National University, Washington, etc. New York: The Macmillan Company, 1899. Pp. viii–209. [Price, $1.]

This brochure presents the simplest principles of the science of optics applied to the needs of ophthalmic practice which are met with in the daily routine of office or dispensary work. It is divided into fourteen chapters and an appendix, the latter containing some geometrical and trigonometrical formulæ. The author assists the student in understanding the methods of demonstration employed by a uniform system of notation. The chapter on the eye as an optical system is probably the best in the volume, though scarcely full enough for the special student. There is a little too much algebra for the man who has been long out of school, but the work is intended more for the use of the special student in ophthalmology than for the general practitioner. The book is exceedingly well printed and sufficiently illustrated by diagrams.

A Laboratory Manual of Physiological Chemistry. By Elbert W. Rockwood, B. S., M. D., Professor of Chemistry and Toxicology in the University of Iowa. With One Colored Plate and Three Plates of Microscopic Preparations. Philadelphia, New York, and Chicago: The F. A. Davis Company, 1899. Pp. vii–204. [Price, $1.]

Three hundred and forty definite experiments accompanied by ample explanations, are carefully selected to cover the whole subject as fully as possible within the limits of a laboratory course for students. A very successful attempt has been made to arrange the work in such a way that the experiments shall be valuable also for use as systematic tests when needed.

A Compend of the Diseases of the Eye and Refraction; including Treatment and Surgery. By George M. Gould, A. M., M. D., formerly Ophthalmologist to the Philadelphia Hospital, etc., and Walter L. Pyle, A. M., M. D., Assistant Surgeon to the Wills Eye Hospital, Philadelphia, etc. Second Edition, revised and enlarged. One Hundred and Nine Illustrations, Several of which are in Colors. Philadelphia: P. Blakiston's Son & Co., 1899. Pp. xii–13 to 295. [Price, 80 cents.]

This is one of the useful little quiz compends which have found a place in the student library. It is divided into two parts. The first considers the examination and refraction of the eye, and the second treats of the diseases of the eye. The second edition is larger and better printed than the first edition. A very useful table embodies the important points in the distinctive diagnosis of ocular inflammations. In the section on diseases of the optic nerve there is a good colored scheme of the optic tracts, taken from von Monakow. The book is a decided improvement on the first edition.

Essentials of Medical Chemistry, Organic and Inorganic. Containing also Questions of Medical Physics, Chemical Philosophy, Analytical Processes, Toxicology, etc., prepared especially for Students of Medicine. By Lawrence Wolff, M. D., Demonstrator of Chemistry, Jefferson Medical College, Philadelphia, etc. Fifth Edition, thoroughly revised by Smith Ely Jelliffe, M. D., Ph. D., Professor of Pharmacognosy, College of Pharmacy of the City of New York, etc. Philadelphia: W. B. Saunders, 1899. Pp. 11 to 222. [Price, $1.]

This little quiz compend admirably suits the purpose for which it is intended. The author's careful and well-studied selection of the necessary requirements of the student has enabled him to furnish a valuable aid to the student who is preparing for examination.

BOOKS, ETC., RECEIVED.

The Diseases of Children, Medical and Surgical. By Henry Ashby, M. D. Lond., F. R. C. P., Physician to the General Hospital for Sick Children, Manchester, etc., and G. A. Wright, B. A., M. B. Oxon., F. R. C. S. Eng., Assistant Surgeon to the Manchester Royal Infirmary, etc. Fourth Edition. Edited for American Students by William Perry Northrup, A. M., M. D., Professor of Pædiatrics, The University and Bellevue Hospital Medical College, etc. New York, London, and Bombay: Longmans, Green, & Co., 1900. Pp. xxvi–894.

A Manual of Surgical Treatment. By W. Watson Cheyne, M. B., F. R. C. S., F. R. S., Professor of Surgery in King's College, London, etc., and F. F. Burghard, M. D. and M. S. Lond., F. R. C. S., Teacher of Practical Surgery in King's College, London, etc. In Six Volumes. Volume II. The Treatment of the Surgical Affections of the Tissues, including the Skin and Subcutaneous Tissues, the Nails, the Lymphatic Vessels and Glands, the Fasciæ, Bursæ, Muscles, Tendons and Tendon Sheaths, Nerves, Veins, and Arteries. Deformities. Philadelphia and New York: Lea Brothers & Co., 1900. Pp. xix–382. [Price, $4.]

Water and Water Supplies. By John C. Thresh, D. Sc. (London); M. D. (Victoria); D. P. H. (Cambridge); Medical Officer of Health to the Essex County Council, etc. Second Revised Edition. Philadelphia: P. Blakiston's Son & Co., 1900. Pp. xv–438. [Price, $2.]

Prescribers' Pharmacopœia. A Synopsis of the More Recent Remedies, Official and Unofficial, with a Therapeutic Index. Fourth Edition. Bombay: Kemp & Co., 1900. Pp. x–421.

A New System of Field Hospitals and Ambulance for Hill Warfare. By C. J. McCartie, M. A., M. D. (M. Ch.), Lieutenant-Colonel, I. M. S. London: W. Thacker & Co., 1899.

Thirty-third Annual Report of the Home for Incurables. For the Year ending June 10, 1899.

On the Resuscitation of Apparently Dead Newborn by Laborde's Method. By Francis Eustace Fronczak, M. D., of Buffalo. [Reprinted from the *Buffalo Medical Journal.*]

Observations and Reflections on Abdominal Surgery. By A. C. Bernays, M. D., of St. Louis. [Reprinted from the *Red Cross Notes.*]

Some Practical Remarks on the Anatomy of the Temporal Bone, with Demonstrations. By Emil Amberg, M. D., of Detroit. [Reprinted from the *Physician and Surgeon.*]

Lessons from Two Hundred and Twenty-four Consecutive Abdominal Sections. By J. H. Carstens, M. D., of Detroit. [Reprinted from the *American Journal of Obstetrics and Diseases of Women and Children.*]

On the Development of Disturbances of Sensation in Diseases of the Spinal Cord. By L. J. J. Muskens, M. D., of Utrecht, Holland. [Reprinted from the *British Medical Journal.*]

Early Recognition of Pulmonary Tuberculosis. By S. A. Knopf, M. D. [Reprinted from the *Journal of the American Medical Association.*]

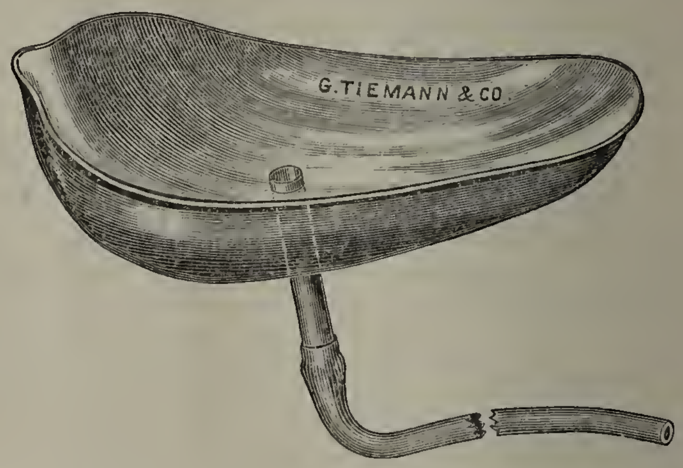
A Review of the History and Literature of Appendicitis. By George M. Edebohls, M. D. [Reprinted from the *Medical Record.*]

New Inventions, etc.

NEW EAR BASIN.

By E. L. Oatman, M. D.,
Brooklyn, N. Y.

This ear basin is modeled from one I designed several years ago and have found very satisfactory in office practice. The hollow handle projects above the bottom, and, acting as a trap, retains in the basin any solid matter syringed from the ear, while the overflow passes through it and the attached rubber tubing into a wash bowl or other convenient receptacle.


G. TIEMANN & CO.

The slight bulge at the top should fit the depression between the ramus of the jaw and the mastoid.

The basin is manufactured by George Tiemann & Co., New York.

82 Remsen Street.

Miscellany.

Tempora Mutantur.—Dr. Gwilym G. Davis (*Pennsylvania Medical Journal*, December, 1899), in a paper entitled Personal Observations on the Development of Modern Surgery, tells the following anecdote:

"While a resident in the Pennsylvania Hospital I was practically the only champion of Listerism and had to combat the attacks of all its enemies. The most formidable one was Dr. Hunt. Those of you who may have had the pleasure of meeting him may recall a sober, sedate Quaker with an inexhaustible fund of humor, good scientific knowledge, a logical mind, and a most brilliant wit. He claimed that micrococci were caused by putrefaction and not putrefaction by micrococci. Keep your animal matter from putrefying and you will not have any micrococci, was the ground that he took. I very well remember one day there were four or five of us in the apothecary shop, as was often the case, arguing over Listerism. Dr. Hunt was holding forth, and to illustrate his argument he told the following parable. He said: 'One day a certain young surgeon entered his wards and, coming to a patient whose wound had done badly, instead of examining it and finding the source of the trouble, he lifted his eyes and gazing wildly around said, "My God, micrococci are about."' With this he laughed and looked at me. It is needless to say that the rest joined in, as did I myself, for his humor, while rich, was never malicious, and one could not help being amused, even though not agreeing with his logic.

I lived to see the day a few years later when a new surgeon only entered on the performance of his duties with the understanding that his patients were to be given the benefits of the antiseptic method."

Deaths from Headache Powders and Other Quack Nostrums.—The *Pennsylvania Medical Journal* for December, 1899, says editorially that a number of instances of fatal results following the use of headache powders have during the past few months been noted in the lay press. While these cases have not all been verified, some deaths at least were undoubtedly due to the cause assigned. About a year ago a young woman of Philadelphia died a few hours after taking one of these powders, which, on subsequent examination, were found to consist of five grains of acetanilide, and the coroner's jury rendered a verdict to the effect that death was due to the poisonous action of this drug. In time a suit for damages was entered against the druggist from whom the headache powder had been purchased and came to trial during the past month. The testimony of the prosecution as to the cause of death was not controverted by the defense, though it was shown that contributory influences were not wanting.

The defense rested on the fact that the preparation was a secret one, the nature of the contents unknown and liable to be changed by the manufacturer at any time, and that consequently the retail druggist could not be held responsible for selling the article without precaution as to its dangerous nature. The court, after hearing the testimony of the witnesses of the prosecution and that of the defendant, granted a non-suit on the ground that no negligence had been proved.

Upon this the *Journal* remarks, and we quite agree with it:

"We believe this ruling to have been a just one under the circumstances, but that no redress is possible in the case does not appear so clearly. The manufacturers of proprietary, secret remedies, the ingredients of which are supposedly innocuous, should be held responsible for such disaster and made to bear the consequences."

The Japanese Government Measures in Regard to Plague.—Dr. Stuart Eldridge, of the United States Marine-Hospital Service, sanitary inspector at Yokohama (*Public Health Reports*, December 22, 1899), says that the Japanese government has taken very active measures, briefly as follows: 1. Professor Kitasato, with several expert assistants, was sent to Kobe at the news of the first case. He, intrusted with full powers, has called to him from various parts of the country a large number of physicians more or less trained by himself, and forty or fifty of these have already arrived in the epidemic district. 2. A thorough examination of all persons well or ill who can possibly be supposed to have been exposed to infection is being made in Kobe and its neighborhood, as well as at Osaka. 3. A careful examination is made of all passengers leaving Kobe or Osaka, either by steamer or railway, before embarkation, and, at Kobe, a locally prominent English medical man is employed for this work in association with the Japanese doctors. 4. Thorough examination of passengers by rail is also made at several points on each of the different railways connecting with both Kobe and Osaka, north and south of these cities. 5. A general cleaning and disinfecting of all cities and towns, not only inside of but beyond the present area of the epidemic, is being carried out under the superintendence of the police, and an energetic campaign against the pathogenic rat has been inaugurated in compliance with the published advice of Professor Kitasato and other experts. 6. The laws of marine quarantine are being applied with almost excessive stringency, or what would seem excessive were the *personnel* of the quarantine force of higher and more experienced character.

Dr. Eldridge remarks: "At present it looks as though the efforts for the suppression of the epidemic may be successful, though it must not be forgotten that cold weather is just beginning and is probably most unfavorable to the development of the disease. It is to be hoped that the measures taken may be so thorough as not only to stamp out the present outbreak but to afford security against its renewal next spring.

"In connection with the apparent origin of the disease from old cotton imported from a plague centre, I would add that all materials of this class are now destroyed wherever found, if of Chinese origin, in connection with the cleansing operations now being carried out."

The Early Recognition and Reporting of Yellow Fever.—*Public Health Reports* for December 22, 1899, referring to the epidemic of yellow fever last July in the National Soldiers' Home, Hampton, Virginia, after referring to the surgeon-general's report, says that "the epidemic excited unusual attention because of the peril to which some thirty-five hundred veterans of the civil war were exposed, and because of the terrible ravages of this disease in Norfolk and vicinity in previous years. As usual in all epidemics, endeavor was made by irresponsible parties to throw doubt upon the character of the disease, but the opinion of the physicians, twelve or more in number, who saw the cases, among them experts of national reputation and one sent by the State of Louisiana, leaves no question as to the diagnosis.

"The surgeon-general gives credit to the physicians of the home and its governor for their prompt and intelligent action, and calls attention to the lesson to be derived from this epidemic—namely, the necessity of promptly recognizing and announcing the disease. The incident is encouraging as demonstrating that when this is done the spread of the disease may be checked."

The Medical Association of the Greater City of New York.—At the annual meeting, on Monday evening, the 8th inst., the order of exercises included the election of officers, the reports of the executive committee, the statistical secretary, and the treasurer, and discussions of the following papers: A Case of Properitoneal (Interstitial) Hernia, by Dr. L. Grant Baldwin; and The Ætiology and Treatment of Acne Vulgaris, by Dr. Robert A. Sands.

The Viceroy of India's Remarks on Haffkine's Plague Inoculation and the Antivaccinationists.—The following words of Lord Curzon, Viceroy of India, in a speech at Poona, might be with advantage taken to heart by the antivaccinationists and pondered over without prejudice. According to the *Indian Medical Record* for November 29, 1899, Lord Curzon is reported to have said:

"I say frankly on this occasion, and I do not care how widely my words may be spread, that in my judgment inoculation is by far the wisest system of prophylactics that you can adopt. I do not say so because I have medical or chemical knowledge which would enable me to pronounce with authority upon the constituent proportions or upon the scientific results of the serum. But I say so because, as a thinking human being with the power of using my eyes and ears, I can not fail to be conscious of its demonstrable effects. If I find, as I do, that out of a hundred plague seizures among uninoculated persons the average of those who die is something about seventy to eighty per cent., and if I find that in a corresponding number of seizures among the inoculated persons the proportions are entirely reversed, and that it is seventy to eighty per cent., if not more, who are saved—and these are calculations which have been furnished to me from more than one very responsible quarter—then I say that figures of that kind can not but carry conviction to my mind, and I altogether fail to see how, in the face of them, it is possible for any one to argue that inoculation is not a wise and necessary precaution. It is all very well to say that it is not infallible. No one, so far as I know, claims that it is. Its effects are apt to be obliterated in the passage of time. It acts differently in different cases. There are some physical constitutions to which it is apparently entirely unsuited. Unless the serum is most carefully administered, and as scrupulously prepared, there is some danger arising from contamination. These are the risks, but I think small risks, attendant upon the introduction of the system for which no one that I know of claims absolute faultlessness. But that inoculation has saved thousands of lives that would otherwise have been lost, and that it gives to the patient more than a reasonable chance of recovery, that in spite of its theoretical conflict with the conservatism of Indian feeling and with the traditions of native medicine, the majority of the most distinguished native medical practitioners in this country are already in its favor, and that more converts are being made from the remainder each day—these are propositions which I believe it to be impossible to dispute. If you have any doubt about it, take the case which was mentioned by his Excellency in his speech just now. Take the cantonment which lies within the sight and the knowledge of most of you in this room, and ask General Burnett, whose unfaltering devotion you know so well, what inoculation has done for him in Poona cantonment."

The Foot and the Forearm.—In an editorial note the *Indian Medical Record* for December 29, 1899, discussing the mischievous practice of the shoemaker's devices for making the woman's foot appear smaller than it really is, says that "the foot should be as long as the ulna, or chief bone of the forearm—that is, from the small head of the bone to be seen at the wrist to the point of the elbow should be the length of the foot. Where the forearm is too short the foot will be found to be also too short; where this is too long the foot will be too long. Most people are surprised that the foot should be as long as the forearm, and are inclined to dispute the fact till they prove it by experiment; but an experiment will easily show that a straight line drawn from one point to another will appear a great deal longer than the same space filled by a line divided into curves."

The Antiquity of the Belief in Rats as Plague Carriers.—Sambon (*Journal of Tropical Medicine*, December, 1899) says that "Manson has very justly and clearly explained that the plague is not a water-borne disease, but a rat-borne disease, and that to prevent the plague we should destroy rats. In every single epidemic it has been observed that the rats die by hundreds, that the disease among them precedes the outbreak among men, and that it constantly follows along the lines of their migration. This all-important fact in the ætiology of plague was so well known to the ancient Greeks that in Asia Minor, at the very door of plague, they worshiped Apollo σμίνθος, that is to say, Apollo the rat, as 'the god whose arrows spread the plague'—and, at the same time, as 'the destroyer of rats.' This awful divinity was represented on monuments treading on a rat. In Roman times, when Æsculapius replaced the more ancient god of medicine, we again find the same fact recorded on a coin of Lucius Verus struck at Pergamum. It represents Æsculapius with a rat at his feet, and a small naked figure standing by with arms outstretched."

[The epithet of Apollo was Σμινθεύς, the derivation being somewhat uncertain. Its source is held by some to be Σμίνθος or Σμίνθη, a city in the Troad; by others σμίνθος, a mouse.]

The International Status of Hospital Ships.—According to the *Army and Navy Journal* for December 30, 1899, hospital ships are now regulated by a convention recently adopted by the plenipotentiaries of a number of the great powers at the Hague conference. They are to have an official commission; are to afford relief and assistance to all wounded belligerents, irrespective of nationality; are in no way to hamper the movements of belligerents; and during and after an engagement they run their own risk, though as a matter of international law they are absolutely neutralized. The belligerents have the right to visit them and control their movements; any instructions given on such visits are, if possible, to be entered in the ship's sailing papers. The hospital ships are to have distinctive painting, and to carry, as required by the Geneva convention, the white flag with a red cross.

Another Civilian Surgeon for the British Troops in South Africa.—Another prominent surgeon, Sir William Thomson, has been sent out by the British government to the seat of war in South Africa.

The New York Neurological Society.—At the annual meeting, held on January 2d, officers for the ensuing year were elected as follows: President, Dr. Frederick Peterson; vice-presidents, Dr. Joseph Collins and Dr. L. Stieglitz; recording secretary, Dr. Pearce Bailey; corresponding secretary, Dr. Lewis A. Conner; treasurer, Dr. Graeme M. Hammond; councillors, Dr. Charles L. Dana, Dr. M. Allen Starr, Dr. B. Sachs, Dr. E. D. Fisher, and Dr. J. Arthur Booth.

The Paris Medical Club, we learn from the *Presse médicale*, was inaugurated a few days before Christmas. Its establishment is said to have been largely due to the efforts of Dr. Doléris.

The New York County Medical Association.—At the next meeting, on Monday evening, January 15th, Dr. Thomas H. Manley will present specimens, Dr. L. F. Garrigues will read a paper on A New Method for Retroperitoneal Drainage of Pyosalpinx, with a Report of Five Cases, and Dr. Parker Syms, Dr. H. M. Silver, Dr. John F. Erdmann, Dr. Irving Haynes, Dr. William B. De Garmo, Dr. William B. Coley, Dr. William T. Bull, Dr. Charles N. Dowd, and others will discuss the subject of strangulated hernia.

Original Communications.

ON THE DETECTION OF CALCULI IN THE LIVER AND GALL BLADDER.*

By CARL BECK, M. D.,
NEW YORK.

In a paper on the Röntgen Rays in Surgery, read at the Second Pan-American Medical Congress, November 17, 1896, I called attention to the great difficulty of representing biliary calculi on account of their great permeability to the rays, and expressed the hope that "the future would give us better means of recognition in the way of improved tubes." The skiagraphs I have the pleasure of presenting to you to-night, which show the distinct outlines of biliary calculi in two patients, prove that I did not hope in vain.

As is well known, renal and vesical calculi can easily be skiagraphed in the living subject if they consist of a hard and firm layer like the oxalates.† The more penetrable urates leave an indistinct shade, while the translucent phosphates show hardly any shade at all. Thus it can be seen that the success of skiagraphy in calculi of the urinary tract depends entirely upon their different chemical composition, and consequently upon their greater or lesser opacity. *The same law applies to the representation of biliary calculi.*

It has been stated that Cattell ‡ had been successful in skiagraphing a gallstone, but it was a calculus enveloped in a portion of the small intestine, and after its removal from a cadaver. In spite of the thin covering, the shade of the calculus could hardly be distinguished. Later reports showed the same results.

Gocht, of Würzburg, the cradle of the Röntgen discovery, who has written the latest and best text-book on the use of the Röntgen rays in medicine and surgery, states that "neither he nor any other experimenter had been able to represent biliary calculi in a living subject." Oberst, who is one of the eminent authorities in this new field, says: "As is well known, biliary calculi, on account of being completely permeated by the Röntgen rays, can not be represented." # Rumpf, of Hamburg, maintains: "Biliary calculi could not be demonstrated so far." || Dumstrey and Metzger are responsible for this bold assertion: "Nobody will any longer maintain, nowadays, that biliary calculi can be represented; all experiments in this direction have proved to be failures and it appears hopeless that such experiments will give any other result in the future." *

It has been my privilege to try experiments in this direction ever since February, 1896, by making ninety-seven skiagraphs in twenty-eight cases of suspected cholelithiasis. In several of the cases I have made from six to ten exposures in different positions, and during a different length of time. Among them were nineteen cases in which the presence of biliary calculi was ascertained by subsequent cholecystotomy. In only two of them was I able to obtain slight shades on the plates, and they were so indistinct that I should not have relied upon them as a diagnostic means.

Fig. 1.

After all these many disappointments I finally succeeded in skiagraphing the cholelithiasis of this lady of seventy-two years for the first time. I had first

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[*] Cases and photographs presented before the New York County Medical Association, October 16, 1899.

[†] Compare my previous publications on this subject, viz., The Röntgen Rays in Surgery, *International Medical Magazine*, May, 1897, and the *American Journal of Cutaneous and Genito-urinary Diseases*, January, 1899.

[‡] *Medical News*, February 15, 1896.

[#] *Fortschritte auf dem Gebiete der Röntgenstrahlen*, 1898, p. 68.

[||] *Ibid.*, p. 87.

[*] *Fortschritte auf dem Gebiete des Röntgenstrahlen*, 1898, p. 129.

employed four different photographic plates at the same time. The upper plate, situated directly below the region of the gall bladder, showed well the outlines of the liver, while in the fourth and remotest it appeared only faintly, but the calculi were clearly represented.

FIG. 2.

The next exposure was made with a quick-penetrating focus tube on a single plate, and lasted ten minutes. After I found, now, how long it took with this tube to represent the liver (Fig. 1), I exposed a second plate, this time for six minutes. The result was as shown in Fig. 2. An exposure lasting seven minutes, one for eight minutes, and one for nine minutes were also made, all showing that the longer the time of exposure the clearer the liver and the obscurer the calculi appeared. It is thus evident that one exposure is not sufficient to determine the length of time required by each *individual* tube for the representation of biliary calculi. A test should therefore be made first by making a short as well as a long exposure in a case of suspected cholelithiasis—*i. e.*, to expose for about five minutes as well as for ten. The most powerful focus tubes at present attainable should invariably be chosen for that purpose. By comparing the results the proper length of exposure for the best results may be determined. For better identification the contours of the organs, especially of the liver, should be outlined by thin wire attached to the plate before the final skiagram is taken.

A point which seems to be of great importance is that the patient should lie on his abdomen with a pillow underneath his symphysis as well as underneath his clavicles. The elevation produced by these pillows permits the protrusion of the region of the gall bladder, thus bringing the calculi nearer to the photographic plate. The approximation is still increased by turning the body slightly to the right and raising the left side.

A third and most important point is that the rays should not penetrate the abdomen in a vertical direction, but from the side, so that the thick and less transparent tissue of the liver is not permeated in its whole diameter. The direction of the rays should be such that they form an angle of about forty-five degrees with the plate.

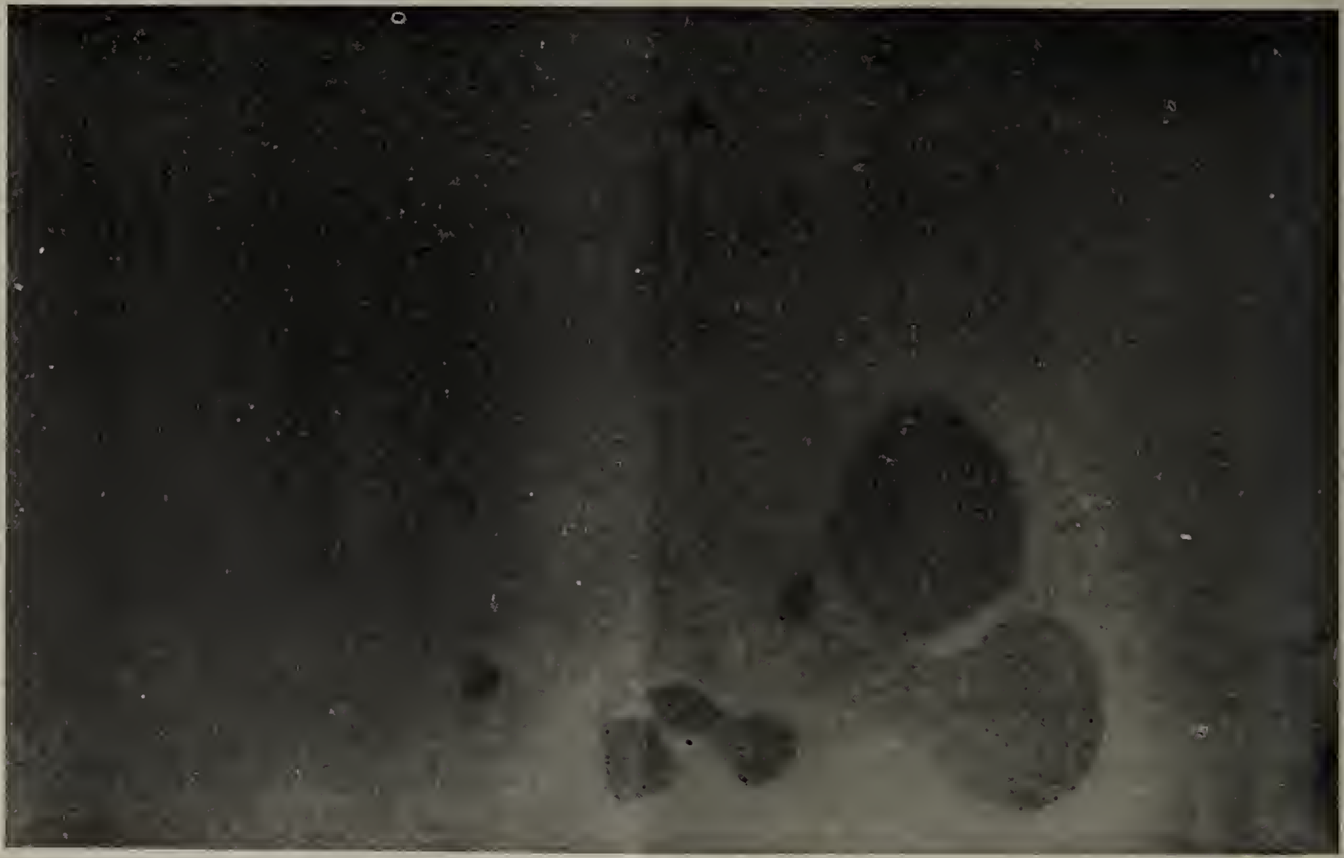

FIG. 3.

By carefully employing these methods, I was able to obtain a still more distinct representation of biliary calculi in the son of this patient. In this skiagram (Fig. 3), taken by an exposure of six minutes, two large calculi are shown in the gall bladder, one in the cystic duct, and three in the liver, their elliptic shape, their size, and diameter being well marked. It is certainly of great importance to know whether there are calculi in the liver besides those present in the gall bladder. In my article, When shall we Operate for Cholelithiasis? published May 8, 1897, in this *Journal*, I advocated cholecystostomy "in view of the fact that, no matter how carefully the gall bladder may have been exposed at the time of the operation, still, small stones are often retained. *The reasons for this well-proved occurrence are not known.* These stones are brought to light only if an opening is left in the gall bladder for a reasonable length of time; while, if the bladder is sewed up (the so-called ideal cholecystotomy), subsequent manipulations are rendered impossible."

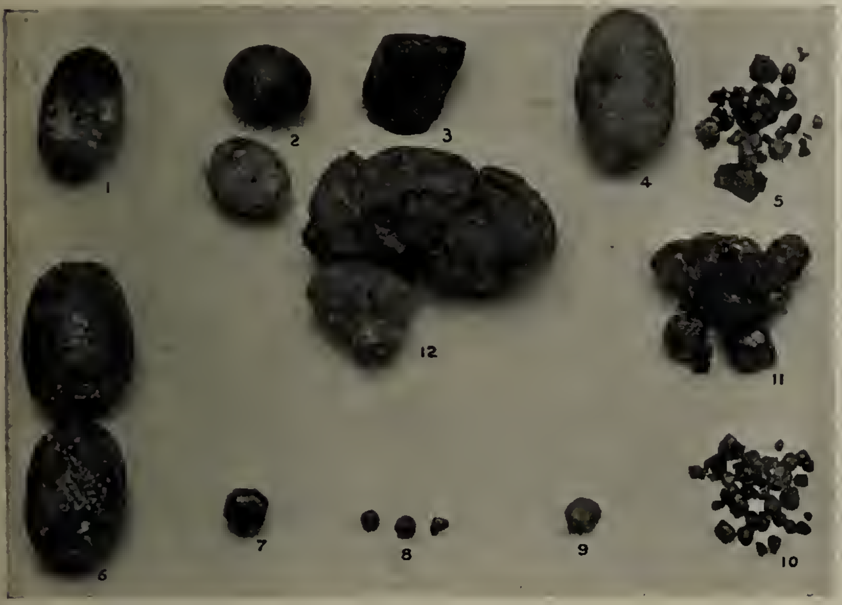

Fig. 4.

In this skiagram we may see the "reasons for this well-proved occurrence." The irritation set up by the cholecystotomy gives the impetus for their leaving their shelter in the intrahepatic ducts and making their postoperative appearance in the gall bladder. How important to know before operation whether there are any calculi in the common duct! It will furthermore be indisputable that in all cases in which the calculi can be represented by the Röntgen rays exploratory laparotomy can be dispensed with.

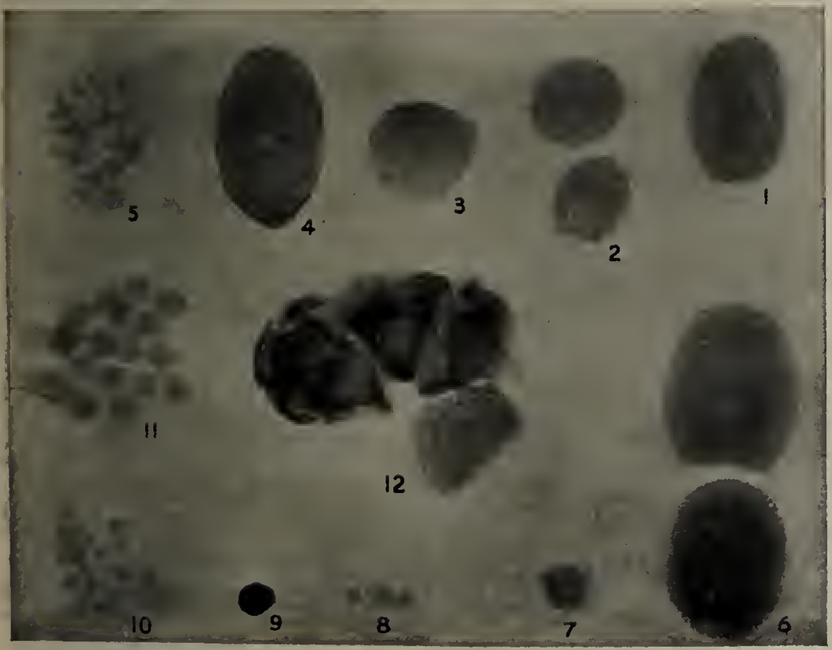

Fig. 5.

The point most needful to be considered in skiagraphing biliary calculi is their chemical composition, which is far more complex than that of calculi in the urinary tract. Various experiments have shown me that calculi consisting of pure cholesterin give but an indistinct shade, while those containing quantities of calcium are well appreciable. I have skiagraphed all the different types of calculus, as shown by the simple photographs (Fig. 4), on a photographic plate, in order to obtain a visual comparison of their permeability (Fig. 5). The same calculi were then irradiated through the living body (Fig. 6), thus practically demonstrating the difference of translucency. While the solid nuclei of Fig. 6—No. 12, for instance—still appeared distinctly, but a faint trace of No. 10, which is still well marked in Fig. 5, is left in Fig. 6.

Thus it can be seen that in classifying the various degrees of translucency we should be guided by the different types of composition. We distinguish common biliary, pure cholesterin, stratified cholesterin, pure bilirubin-calcium, and mixed bilirubin-calcium calculi. Besides, there are some uncommon forms, as, for instance, the small amorphous, the calcium carbonate, and the combination calculi.

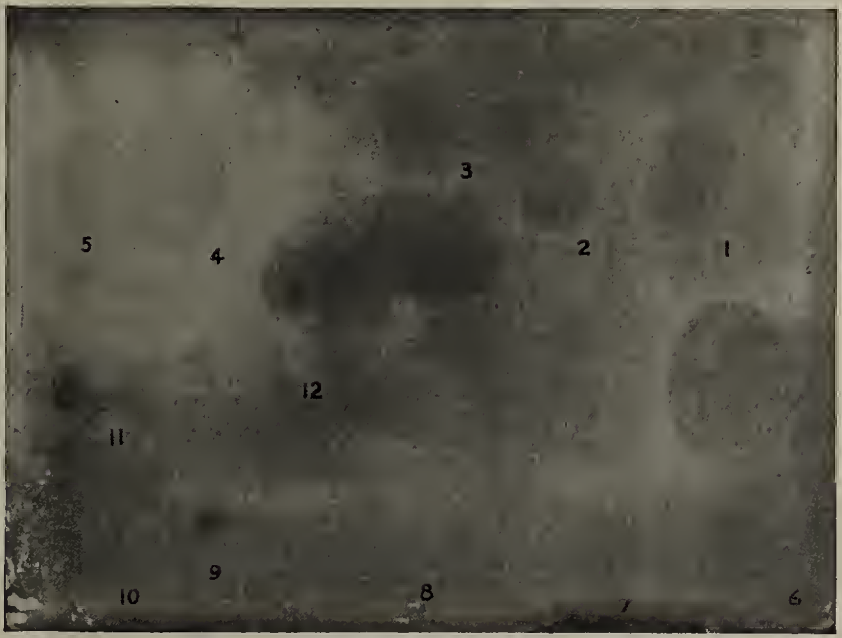

Fig. 6.

The first type, the *common biliary calculi*, are the most frequent, and show great varieties in number, size, shape, and color. Their size is from that of the head of a pin to that of a cherry. Their shape never shows any crystalline structures. The outer surface is hard and stratified, while the inner portion is so soft that it sometimes appears like pulp. These calculi are naturally permeable to the rays, and therefore produce a slight shade only (No. 5). If present in large numbers, the shade is somewhat more conspicuous.

The calculi composed of *pure cholesterin* (No. 2) are of globular shape, and but rarely faceted. Their size varies from that of a cherry to that of a walnut;

their color is pearly white, resembling asbestos. Sometimes there is a tint of green or brown. The surface is either smooth or verrucous, and the diameter shows a non-stratified crystalline appearance. They are less permeable to the rays than the former type, and show a slightly more distinct shade.

The *stratified cholesterin calculi* (Nos. 1 and 12) show the same size, shape, and coloration as the pure cholesterinates, but their cross-section is characterized by the presence of a well-marked stratum. They are often faceted. The outer strata, also, do not appear crystalline, but show a hyaline or an earthy structure. The crystalline portion (Fig. 7) consists of pure cholesterin, while the calcium and colored portions contain a compound of bilirubin and biliverdin. In the green strata traces of carbonate of calcium are also detected. It is evident that the admixture of calcium renders this variety less permeable to the rays, wherefore a distinct skiagraph can be counted upon.

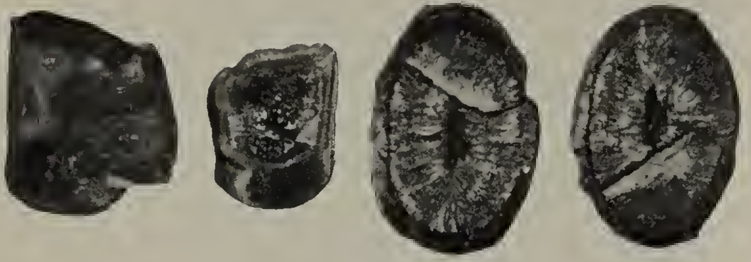
FIG. 7.

The *mixed bilirubin-calcium calculi* (No. 6) consist of red-brown or dark-brown strata of considerable thickness, which easily crumble away when dried. In the majority of cases a small nucleus consisting of pure crystalline cholesterin is present. A large portion of the outer strata is always composed of cholesterin. The balance consists of bilirubin-calcium and traces of copper and iron. They are never found in large numbers, three being the maximum. If there is more than one calculus, the faceted form predominates. They are naturally less permeable than the former varieties, and consequently give a more distinct shade. (The calculi of Figs. 1 to 3 are probably also of this type.)

The *pure bilirubin-calcium calculi* (No. 7) are rare. They consist of a combination of calcium—especially bilirubin-calcium—with the various biliary compounds. Sometimes as much as seventy per cent. of bilihumin-calcium is found in this variety. Cholesterin is either absent or only found in traces. Their sizes vary from that of a grain of sand to that of a pea, and show either a gray or black color, gleaming like metal, and are solid and hard (No. 9). There is another form of a dark-brownish color, which shows an irregular tuberous surface, and generally remains small like the other. This variety is as soft as wax, and if dried crumbles into dust (No. 8). Both forms show a shade, but the solid type (No. 9) gives very much more distinct outlines.

The small *amorphous* or *imperfectly crystallized cholesterin calculi*, the surface as well as the cross-section of which resembles a pearl, are very rare. Their size varies from that of a grain of sand to that of a pea. They always contain a black nucleus consisting of a combination of calcium and bilirubin. There is no stratum or crystalline construction. They give a very faint shade.

Those calculi which consist of a *compound of calcium and bilirubin or carbonic acid* are very hard, and are therefore easily represented by the rays.

The *combination calculi* are also rare. Their nucleus is different in composition from the cortex, the latter, for instance, consisting of mixed bilirubin-calcium and the former of pure cholesterin. Their translucency depends upon the proportion of their constituents.

Histories.—The first patient, Mrs. I., a lady of seventy-two years, had suffered from colicky pains in the region of the gall bladder for forty years. The attacks were sometimes of great severity. Jaundice had never been present.

In the region of the gall bladder a well-defined tumor of the size of an apple could be felt. According to the principles emphasized above, I exposed her to the Röntgen rays for ten minutes, and obtained illustration Fig. 1, which shows the outlines of the liver and iliac bone, as well as the indistinct shades of seven small calculi in the liver. Another exposure, lasting six minutes only, showed six large calculi arranged in a bunch (Fig. 2). The walls of the gall bladder were well defined, which was due to their fibrous condition. Regarding the long standing of the irritation caused by the calculi, and especially by the repeated inflammatory processes, thickening of the walls appears to be a natural consequence.

The light, elliptic area around the gallstones must be attributed to their thin outer strata, which probably consist of pure translucent cholesterin. There are also light intervening spaces between the elliptic surfaces of the calculi. The ribs as well as the contents of the intestine are fairly visible on this illustration also, while the ilium is but faintly indicated.

The second case, that of the son of this patient, a manufacturer, thirty-seven years of age, has been personally known to me for seventeen years. His general condition has always been good with the exception of slight dyspeptic attacks. Occasionally, during the last few months, he has noticed a slight painful sensation in the region of his gall bladder. Jaundice has never been present. On two of the sisters of the patient (presented to-night) cholecystostomy for cholelithiasis had been performed by me recently. The case of one of the sisters—Mrs. P., thirty-nine years of age—is of greater interest on account of the cholecystostomy having been carried out on the left side, as the patient suffers from total transposition of the viscera.* Three large quadrangular calculi attached to a fourth one of triangular shape were extracted. No. 12 is an exact representation of the situation of the calculi in the gall bladder, and two thirds of their natural size. The three quadrangular calculi consist of a solid black nucleus, a thick middle layer of bilirubin-calcium, and a thin, soapy outer layer of cholesterin.

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* Case published in the *Annals of Surgery*, May, 1899.

The other sister, Mrs. G., twenty-nine years of age, gave a history of repeated colicky pains extending from the right iliac fossa upward for fifteen years. Jaundice was never present. Recurrent appendicitis was thought of, and after the last attack the patient was referred to me for appendectomy. An examination under ether revealed the presence of a bandlike tumor reaching from the lower margin of the liver down to the iliac fossa. Cholecystostomy was therefore performed, disclosing the presence of two large elliptic calculi (No. 6), which were of the mixed bilirubin-calcium type, and were arranged in such a manner, one below the other, as shown in the illustration, that they could easily be taken for a thickened appendix which had undergone inflammatory changes.

The daughter of the third patient, Mrs. P., is fifteen years of age, and has suffered from "stomach cramps" for two years. She shows a marked resistance in the region of the gall bladder, and has twice been slightly icteric. The skiagraph revealed nothing definite.

A sixth member of the family, Mr. I., Jr., son of the old lady, and brother of Mrs. P., Mrs. G., and Mr. I., Jr., has suffered from colicky pains in the region of the gall bladder for five years. He is thirty-five years old. The diagnosis had been confirmed by reputable physicians.

The mother of Mrs. I., the old lady of seventy-two years, died from "jaundice" when sixty-seven years of age. She was in charge of an eminent New York physician, Dr. Bopp, who had treated her for cholelithiasis.

Mr. I., Sr., the husband of the old lady presented to-night, strange to say, had suffered from "stomach cramps" for fourteen years, and died after a sickness of three days. He was seized suddenly with intense pains in the region of the gall bladder, and became yellow two days before he died. An autopsy revealed the presence of a large gallstone and empyema of the gall bladder.

His brother died when forty-five years old, from dropsy, apparently due to cirrhosis of the liver; but the autopsy showed cholelithiasis as the cause of death.

Another brother of Mr. I., Sr., who is still alive, has repeatedly suffered intense attacks of colicky pains in the region of the gall bladder. From the report of his physician I learn that there is a well-defined tumor in the region of his gall bladder, and that he has been advised to submit to cholecystostomy.

The history of this gallstone family seems to prove the heredity of predisposition.

CHRONIC ABSCESS OF THE FRONTAL, ETHMOIDAL, AND SPHENOIDAL SINUSES, FOLLOWED BY MENINGITIS AND DEATH.*

By J. H. BRYAN, M. D.,
WASHINGTON, D. C.

Believing that as much can frequently be learned from our failures as from our successes, I desire to call your attention to the following unfortunate but instructive case of suppurative disease of the frontal, ethmoidal, and sphenoidal cavities, hoping it will be an object lesson for us all not to allow these cases to go too far before resorting to operative interference.

While a great deal has been done in the way of unraveling the mysteries of this dangerous region, there still remains a great deal to be worked out before our diagnosis and therapeutics can be said to be precise.

Mrs. ——, aged forty years, consulted me February 28th, complaining of intense frontal neuralgia, limited to the left frontal and temporal regions, occlusion of the left nostril, and a profuse purulent discharge from the left side of the nose. This condition had been going on for a number of years, but increasing in intensity of late, especially since an attack of influenza from which she suffered in the early part of January of the present year.

The patient was a well-nourished woman, with rather an unhealthy appearance of the skin, and with an anxious facial expression, so characteristic of these cases when at all well advanced.

Examination of the nose showed the left side completely blocked with polypi of considerable size, and also containing a large quantity of thick green pus, which was discharged principally from the anterior naris. The right side was in a comparatively fair state of health, the mucous membrane over the middle and inferior turbinates being somewhat hypertrophied; but there was no noticeable secretion coming from that side. A post-rhinoscopic examination showed a small quantity of pus in the middle meatus coming down over the posterior extremity of the middle turbinate; but the quantity was so small that it was considered to be a part of the secretion from the ethmoid cells—otherwise nothing abnormal in the postnasal space was observed.

The polypi, several quite large, were removed with the snare, and when the nose was freed of these tumors the whole middle meatus was observed to be completely obliterated by the swollen ethmoid cells. The middle turbinate was very large, and on the use of the probe it, together with the greater portion of the ethmoid bone as far back as its middle, was found to be in an advanced state of caries. The probe could readily be passed into the left frontal sinus. Irrigation of the nose brought away large quantities of thick, fœtid pus, and gave the patient temporary relief.

An examination of the eye by Dr. W. H. Wilmer before the removal of the polypi showed the fundus normal, and there was no contraction in the visual field, a fact which surprised me somewhat in view of the extensive disease of the ethmoidal cells.

The electric light showed the left frontal sinus opaque, while the right as well as both maxillary sinuses were translucent.

The patient was informed of her serious condition and advised to submit to an operation, already too long delayed, as the only hope of saving her life.

She left for her home to make her final preparations for coming into the hospital, and it was while at home that she contracted a severe cold, which developed into a slight bronchitis, and increased to a considerable degree the quantity of secretion from the nose.

On March 26th she returned to Washington and was admitted to the Episcopal Eye, Ear, and Throat Hospital, where she was kept under observation until her cold was better. While her bronchial inflammation rapidly subsided, her head trouble seemed to increase in severity, and it was decided unsafe to postpone the operation; so, on April 1st, she was etherized. The left brow having been shaved, an incision, commencing at a point just within the left supraorbital notch, was made through the brow down to the bone, and continued over on the nasal bone; the flap, composed of skin and periosteum, elevated, and a button of bone a centimetre in diameter was removed by means of a crown trephine from the anterior wall of the frontal sinus. The cavity was found filled with thick pus and granulation tissue. The probe revealed extensive caries of its anterior wall, and the whole ethmoid bone, as far as the probe could reach, seemed to be in a carious state. The sinus was freely curetted and all diseased tissue removed; then, with the little finger in the nose as a guide, I removed all the anterior ethmoid cells by means of the curette passed through the frontal-sinus opening. Operating from before backward, I removed as much as half the ethmoid cells. When this had been done, the probe not revealing any further diseased bone, the cavity was thoroughly irrigated with a solution of bichloride of mercury (1 to 3,000). Pus continued to come after each irrigation for some little time, and this puzzled me considerably at the time; but in the light of the autopsy, I now believe that some of this pus was coming from the posterior ethmoid cells and the sphenoidal sinus, which during the examination gave no evidence of being diseased.

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* Read before the American Laryngological Association at its twenty-first annual congress.

After thoroughly cleansing the parts the cavity was packed with iodoform gauze, one end being passed into the nose, the periosteum and external wound closed with catgut sutures, and the whole sealed with iodoform and collodion.

The patient passed a fairly good night, vomiting blood several times during the night. Evening temperature, 98.4° F. Complained of some pain in the region of the operation, but this passed off during the night.

April 2d, 8 A. M.—Temperature, 99° F.; pulse, 76. A sero-sanguinolent secretion discharging through the gauze drain. At noon she complained of pain in the head, principally in the suboccipital region. Temperature, 99.2° F.; pulse, 80. Toward evening the pains in the head increased in severity.

8 P. M.—Temperature, 101° F.; pulse, 88; suffering from nausea. No chill.

3d, 8 A. M.—Temperature, 101° F.; pulse, 84. During the night she complained of feeling cold, but there was no decided chill. Removed the gauze drain, which came away perfectly clean, and irrigated the frontal sinus through the nose; but no pus was brought away, and no pus was found in the nasal cavity after irrigation.

12 M.—Temperature, 102° F.; pulse, 92. The general condition of the patient seems much worse; the sensorium considerably duller; pupils normal, and react to light.

4 P. M.—Temperature, 102° F.; pulse, 80. The frontal wound was opened and the cavity thoroughly irrigated with a boric-acid solution, but no secretion was brought away. After a consultation with Dr. Wilmer and Dr. Bowen, ten cubic centimetres of antistreptococcus serum were given by injection. In two hours the temperature fell one degree.

8 P. M.—Temperature, 102° F.; pulse, 120; very restless, and does not respond readily to questions. Examination of the eyes by Dr. Wilmer showed the fundus normal. Frontal sinus and nose irrigated, but no pus was brought away. At 9 P. M. she had a second injection of ten cubic centimetres of serum, but without any appreciable effect on the temperature.

4th.—Patient in a semicomatose state; temperature, 103.2° F.; pulse, 148. Urine voided involuntarily. At 10 A. M. she received a third injection of antistreptococcus serum. At 1.30 P. M. the patient died.

The following is a report of the autopsy by Dr. D. S. Lamb, of the Army Medical Museum:

Head alone examined. Scalp normal but pale. Bones normal except left side of cribriform plate of ethmoid bone, which had been destroyed apparently by ulceration, and the opening was occupied by a blood clot; left olfactory ganglion softened.

Dura mater firmly adherent to calvaria in places. Sinuses of dura mater contained recent soft dark clots except in anterior part of superior longitudinal sinus, where was a firmer, paler clot; no purulent fluid in sinuses. Vessels of pia mater engorged.

Both Gasserian ganglia were softened, and there was a little pale, thin, puslike fluid in the subgangliar depression. Purulent fluid in left nasal fossa up to the roof, and in the left posterior ethmoidal and in both sphenoidal sinuses.

Brain showed fibrino-purulent deposit along the vessels, especially of the convexity; also at base and on cerebellar hemispheres; very scanty, however, in the cisternæ magnum and pontis; apparently none on the medulla.

The arteries at the base of the brain appeared to be normal.

Cause of death, *acute leptomeningitis,* apparently secondary to caries of the ethmoid bone. The secondary infection was most probably through the lymphatics, since that route seems to explain better the involvement of the subgasserian fossæ, and there was no purulent fluid in the dural sinuses. It is just possible that infection may have also come by way of the ethmoidal veins to the cavernous sinus, but there was no purulent liquid in these sinuses.

As will be seen by the clinical record and the report of the autopsy, this case presents many interesting features.

The meningitis following so soon after the operation, one naturally looks to this region for the source of the infection; but the frontal sinus can be excluded, for there was no pus found in this cavity upon frequent irrigations, and I do not believe it took place from the region of the anterior ethmoid cells, for they were completely removed, and no pus was found in the nasal chamber on frequent examinations made after the operation. The purulent secretion found in the nose at the time of the autopsy was probably the result of an emptying of the posterior ethmoidal cells and sphenoidal sinuses a short time before death, and we are forced to the view that these cavities were the source of the infection through either the ethmoidal veins or the lymph channels, as suggested by Dr. Lamb as being the most probable course. It is possible that there was a slight caries of the walls of the sphenoidal roof, which was not discovered at the autopsy, for this region along both sphenoidal fissures seemed to be the seat of the intensest inflammation.

An odd feature of this case is that there should have been such decided destruction in the sphenoidal sinuses and in the left posterior ethmoidal cells without any evidence, either local or general, being given to direct my attention to these cavities, for, as I have previously mentioned, there was only a small quantity of pus observed flowing into the postnasal space over the posterior end of the middle turbinate. The headaches were entirely referred to the frontal and temporal regions.

Abscess of the sphenoidal sinus and the adjoining posterior ethmoid cells, for they are generally one cavity in well-advanced cases, is a most difficult affection to diagnosticate when its symptoms are well defined, and next to impossible when the symptoms are obscure. The only positive evidence is a choking of the optic disc, when associated with a postnasal secretion and occipital headache. Had the sphenoidal disease been discovered in time, I feel this patient's life might have been spared.

A SECOND REPORT ON
THE THERAPEUTICS OF HEROINE.

By MORRIS MANGES, M. D.,
VISITING PHYSICIAN TO MT. SINAI HOSPITAL, NEW YORK;
PROFESSOR OF GENERAL MEDICINE, NEW YORK POLYCLINIC.

(*Concluded from page 55.*)

Medea (26) has very carefully studied the action of heroine hydrochloride administered subcutaneously upon about fifty cases at Conti's clinic, especial attention being directed to the effects upon the blood pressure (with the Riva-Rocci sphygmomanometer) and temperature. The initial dose used was a seventh to an eighth of a grain, and was increased to a sixth of a grain. The diseases treated included pulmonary phthisis, emphysema, chronic bronchitis, bronchial asthma, pneumonia, pleurisy, whooping-cough, sciatica, and insomnia. No symptoms of excitation were noted; on the contrary, after an average period of from ten to fifteen minutes, the patients felt a distinct sense of well-being, often due to the alleviation of the pleurodynia or cough; very often they manifested a little drowsiness, which finally brought about a quiet and refreshing sleep of a few hours, which never left any after-effects. In about a third of the cases, ten minutes after the injection there was a very slight vertigo and a little tinnitus aurium. These symptoms lasted only about half an hour; in only one case did it last six hours, was accompanied with a slight headache, but finally disappeared without any sequelæ. In another case there was a slight tendency to syncope; in another, a little nausea. "The great majority of the patients, including those who were very feeble or very short of breath, stood the remedy so well that after having experienced the relief it gave them they always asked for it, with the greatest confidence in its good effects."

Medea's experiments demonstrated the following:

1. The diminution in the frequency of the respiratory movements was noted in the great majority of the cases; in healthy people the number of respirations sometimes came down from twenty-four to sixteen, from twenty-two to fourteen, etc.; in those suffering from dyspnœa the breathing was reduced from thirty-six to twenty-eight, from forty to twenty-four, the rate of breathing, six hours after the injection, remaining between twenty-two and twenty-four. It may be stated that in general the diminution varied in a minute between six and eight respirations. It was in a very few cases only that this action of heroine failed to appear, and quite exceptionally (in two cases) a very slight increase in the number of respirations was observed.

2. Contrary to the experience of most observers, I have been able to note a diminution in the number of the arterial pulsations, which commonly averages about seven or eight pulsations to the minute, and which is especially marked about forty minutes after the injection. In a few instances the diminution amounted to nine (70 to 61 in twenty minutes), to twelve (94 to 82 in twenty minutes), and to fourteen (100 to 86 in forty minutes) beats to the minute. The cases in which a diminution was not observed were exceedingly few; in three cases only was there an increase in the number of pulsations.

I have not been able to establish a constant relation between the diminution of the arterial pulsations and the lessened frequency of the number of respirations.

3. Somewhat less constant, yet sufficient to allow of formulating an opinion, were the results obtained in regard to the behavior of the blood pressure.

In most of the cases a diminution of the pressure * was observed, which often was manifested within twenty minutes after the injection, but which usually reached its maximum about fifty minutes after the administration. The lowering was in a few cases very marked (in one case from two hundred and thirty to a hundred and eighty-five millimetres in fifty minutes; in others from one hundred and twenty-four to one hundred and eighteen, from a hundred and seventy to one hundred and fifty, etc.); in general it averaged from ten to fifteen millimetres; in several cases the difference was even less, so that we could only call it a tendency toward a diminution of the pressure.

In a few cases (about one seventh of the observations) the pressure was, on the contrary, increased after the injection. This fact was constantly verified in an old tuberculous patient, but this increase was invariably associated with a diminution of the respirations and the pulse.

In the other cases also in which no diminution of the arterial pressure was observed the heroine always exercised its customary action in lessening the number of respirations and of pulse beats. In exceedingly few cases (not more than three) there occurred no variations in the pressure.

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* We must here remember the fact that there are great difficulties in the exact valuation of the numbers given by the sphygmomanometer, and that the average pressure, according to v. Basch, is in man from one hundred and twenty to one hundred and fifty millimetres.

In these cases also there was no constant relation between the diminution of the pressure and the number of the pulse beats.

4. In regard to the temperature, I have generally been able to observe a slight fall, which was often noticeable within twenty minutes after the injection, and still more frequently after the lapse of thirty or forty minutes. This fall was occasionally preceded by a slight rise, which occurred about ten to fifteen minutes after the injection.

I have never been able to observe very marked falls in the temperature; it has been quite seldom that it amounted to as much as one degree centigrade; on an average it usually was about three tenths of a degree centigrade. Instances in which there was no modification of the temperature occurred but very seldom.

Therapeutically Medea obtained very satisfactory results in pulmonary phthisis and pulmonary emphysema with bronchitis. No habituation was formed, and no increase in dose was needed. In bronchial asthma the results were poor. In acute pleuro-pneumonia, bronchopneumonia, and acute pleurisy it acted very efficiently. Whooping-cough was benefited to a less degree. In painful affections, like neuralgia, lumbago, lead colic, etc., its action was very soothing. Quieting effects were obtained in some delirious and febrile patients.

In order to ascertain the general opinion of the profession upon heroine, a circular letter was sent out, and a hundred and forty-one replies were received. Of these, only four were outspoken against the drug. Of the remainder, fifty-five were couched in general terms in favor of it, without, however, going into details beyond saying that good results had been obtained in the relief of cough of various kinds. The other eighty-two replies represented a large experience of the most varied kind, since the letters came from all parts of the United States, and were based upon three hundred and forty-one cases. I have also added seventy-five cases of my own from my service at the Mount Sinai Hospital and private practice, and in the table are given the results of the analysis of the four hundred and sixteen cases of coughs from various causes, and of other conditions which were treated with heroine.

	Successes.	Failures.	Total.
Chronic pharyngitis	1	0	1
Acute laryngitis	5	2	7
Acute bronchitis	47	7	54
Chronic bronchitis	68	16	84
Bronchiectasis	4	2	4
Pleurisy	3	2	5
Acute pneumonia (lobular and lobar)	8	4	12
Acute pulmonary phthisis	10	4	14
Chronic pulmonary phthisis	34	14	48
Pulmonary emphysema (bronchial asthma)	40	14	54
Pyopneumothorax	0	1	1
"Irritable coughs"	21	4	25
Influenza	38	5	43
Abscess of liver, ruptured into lung	1	0	1
Whooping-cough	25	8	33
Rose cold and hay fever	1	0	1
Cardiac asthma	4	2	6
Renal asthma	1	1	2
Diabetes mellitus	0	6	6
Morphine habit	2	0	2
Insomnia	1	0	1
Neuralgia	4	6	10
	318	98	416

Thus the percentage of failures in this varied list of cases is twenty-one per cent., which is a very fair result if one considers the wide range of the conditions in which the drug was employed. If the cases were eliminated in which the indications are other than the simple relief of cough, the results would be even better. Still, even as the list stands the results must be considered a very good showing for heroine, when it is borne in mind that these results are not those of one observer, but represent a large and varied experience of all kinds of patients under the most varied conditions.

As an example of the results which are obtained from heroine where the indication is purely the relief of cough, I quote the report sent by Dr. Stubbert, director of the Loomis Sanitarium at Liberty, New York:

Number of cases treated, 37. Percentage of results as regards (1) good, 89; (2) none, 0; (3) bad, 11. Bad after-effects—*i. e.*, constipation, 5; somnolence, 11; nausea, 3; habituation to drug, 8.

Taking fifty cases of my own in which cough alone was the indication, the results agree quite closely with those reported by Stubbert: Number of cases treated for cough, 50. Percentage of results as regards (1) good, 84; (2) none, 4; (3) bad, 12. After-effects—*i. e.*, constipation, 12; somnolence, 8; nausea, 4; habituation, 0.

No special analysis of the results presented in the table of four hundred and sixteen cases will be attempted, nor will any special reference be made to any special cases, although I am indebted to the physicians who so kindly sent their reports for some very striking instances of the value of heroine. Instead I shall give the general results of the experience embodied therein.

In the relief of the cough of acute bronchitis heroine acted very promptly as a rule, and not alone was the cough relieved in a very short time, but also the whole general condition of the patient was rapidly improved.

The cough of chronic bronchitis reacted favorably, as a rule, to heroine, but the results were not constant. This difference depended in a large measure upon the effect upon the bronchial secretion. Where this was diminished the patients complained of the drug. This effect, however, was corrected by combining it with potassium iodide or terpene hydrate. Others preferred combinations with squills, ipecac, etc.

In bronchiectasis the results corresponded in a degree with those observed in chronic bronchitis. If the proper precautions were observed as regards lowering the head and upper part of the body, so that the patient could get rid of much of the accumulated secretions by gravity, a few small doses of heroine during the day and a large dose at bedtime made the patients very comfortable.

In pleurisy the number of cases is too small to justify any opinion. The indication is one which ought to be well filled by hypodermic injections of the hydrochloride.

In acute pneumonia the results were very gratifying, since in most of the cases the harassing cough was speedily controlled, and the patients' comfort was increased as well by the stimulation of the respiration, the dyspnœa becoming much less marked. That the temperature may also fall after the use of heroine I demonstrated by a case in my first paper; similar observations were made by North, Medea, and others.

In pulmonary phthisis, acute and chronic, heroine found its largest field for usefulness, and but few correspondents reported results which did not substantiate the contention that, taken all in all, heroine is distinctly superior to codeine in most cases, and to morphine in many. It fulfills more indications than either of them, since it does more than to simply allay the cough; it stimulates respiration, removes the oppressive sensation of dyspnœa, promotes sleep, frequently lessens or prevents night sweats, and even at times reduces the evening rises of temperature. Moreover, it is less constipating, and the tendency to habituation or increasing dose is far less than with all other opiates.

In the summary of the literature already given the indications for its use have been sufficiently detailed.

In pulmonary emphysema and bronchial asthma it may safely be asserted that heroine, and especially the hydrochloride, is distinctly superior to any other drug thus far used. This is proved by the results—fourteen failures in fifty-four cases—and still more emphatically is it demonstrated in the statement made by many of my correspondents. Leo has especially emphasized its usefulness in this condition, and, as already quoted, he aptly says that what digitalis does for the heart heroine does for respiration. The fact that in numerous instances these patients would come, often from long distances for a fresh supply demonstrates most clearly the great value of this drug. During the attack of asthma the drug may be used freely, since the somnolence which follows the larger doses is gladly welcomed by the patients, and at the same time they frequently feel the coincident respiratory stimulation. Many observers are agreed that in some cases not only are the individual paroxysms shortened in duration, but the interval between the attacks is distinctly lengthened.

I prefer to use the hydrochloride subcutaneously in a twelfth to a sixth of a grain, repeated in an hour, if necessary. After that, it or heroine may be given by mouth in smaller doses every four to six hours to insure sleep. The largest doses should be reserved for bedtime.

In influenza, heroine, as was to be expected, was very valuable in allaying the respiratory symptoms. Many correspondents report excellent results with it alone, or in combination with phenacetine, salipyrine, antipyrine, etc. It was also observed that the duration of the disease was shortened, and the complicating pneumonias were less frequent.

Whooping-cough, as had already been shown in the summary of the literature given above, has been very favorably influenced by heroine. The doses are very well borne and the paroxysms were shortened in twenty-five out of thirty-three cases.

The single case of abscess of the liver, which ruptured into the lung, is so remarkable that I shall make an exception with regard to it and quote from the letter of Dr. B. J. Wetherby, of Wilkesbarre, Pennsylvania:

"The patient was a married man, forty years old, who had looked upon wine when it was red rather frequently for several years. He was suffering from an abscess of the liver, which had ruptured through the lung, and was discharging its contents in that way. There was abundant expectoration of pus, broken-down blood-corpuscles, and tissue *débris*, and the case was slowly going to a fatal termination. His cough, which was of an irritative character, became very harassing and almost constant, preventing his sleep for more than twenty minutes or half an hour at a time. I tried everything to stop the cough without also stopping the expectoration, but nothing was satisfactory. With all the preparations with which I was familiar, when they stopped the cough they also stopped the expectoration, and up went the fever, and all the symptoms would become worse. Codeine seemed to do better than anything else, until I used heroine, and even the codeine was not at all satisfactory.

"After several weeks I happened to run across some literature on heroine, and it read very nicely; so I wrote the Elberfeld folks, and they sent me some of their twelfth-grain tablets. It proved to be exactly what we were looking for, and the effect was apparent from the first dose. It eliminated entirely the irritative element, and, to my surprise, did not stagnate the secretions at all. The patient would sleep for hours at a time, rousing himself now and then to give two or three coughs, which were attended with abundant expectoration, after which he could go quietly to sleep again, and sleep until there was another accumulation. The cough required almost no effort, and the expectoration was really easier when taking the heroine. From this time to the time of his death, which occurred several weeks later, he took the heroine every day, and we had no further trouble with the cough. He and his wife spoke of it often, and said it was a godsend.

"I have spoken of this case rather at length, because I look upon it as being marvelous. The case had bothered me not a little, and I was at my wits' end. It was perfectly and positively satisfactory when all of the usual means had failed. The only opium symptom I observed was a little itching, especially of the nose, but the patient did not notice it. I had to gradually increase the dose to a sixth of a grain, and we gave it at three- and four-hour intervals."

Any drug which will add to one's resources in the distressing cases of cardiac and renal asthma is worthy of a trial, especially if the relief is obtained without any too great general depression. The few cases in which I have tried heroine have shown that, while heroine is distinctly inferior to morphine in these conditions, yet the soothing effects obtained were sufficient for mild attacks; and, moreover, the drug could be used in the same dose for a long time. Cardiac patients tolerated it very well. In a personal communication Dr. L. S. Rau told me of the excellent results which he obtained in cardiac asthma from a combination of heroine, strychnine, and powdered digitalis. That the effect was not due to the latter drugs was shown by the fact that it was only when heroine was added that his striking results were observed. Bloch also reports that he obtained good effects from the combination of infusion of digitalis and heroine hydrochloride in uncompensated cardiac lesions.

In diabetes mellitus my results have not been satisfactory. The close relation of heroine to morphine and codeine, and the fact that Dreser had shown such a decided slowing effect of heroine upon the metabolism, led me to hope that it would be singularly useful in this disorder. Prolonged and careful use of it in six cases failed to show any reduction in the amount of sugar in the urine, or in the amount of urine passed daily. It was also without any effect upon the other symptoms. These results do not agree with those of Tauszk, who states that it was useful in this disease.

Eulenburg's statement of the great value of heroine in breaking off the morphine habit was substantiated in two cases. The results were most gratifying, and justify the belief that it is worthy of a more extended trial for this purpose.

As to the determination of the value of heroine for the relief of pain in neuralgias, etc., my own cases are not well adapted, since the hydrochloride of heroine was used in such a small percentage. This much can be stated, that for this purpose heroine itself is distinctly inferior to morphine. The future must determine the correctness of Eulenburg's contention of the value of the subcutaneous injection of the hydrochloride. My personal experience is at present too limited to warrant the expression of any opinion. That the local anodyne effects are considerable, I would refer to the results obtained with tampons and suppositories by Mirtl in his gynæcological practice.

As regards after-effects, Floret, Strube, Weiss, Medea, and others have never observed any beyond slight transient vertigo and a little somnolence; and they also assert that it was never necessary to increase the dose. The results which I have gathered in the four hundred and sixteen cases do not quite agree with this. I have already referred to the statistics of Stubbert and to fifty cases of my own (*vide supra*). Freudenthal and others have shown that constipation occurs in about ten per cent. of the cases. Leo reports two cases (out of twenty-five) in which one-sixth-grain doses produced nausea and vertigo, and in one of the cases fainting occurred. Even with a twelfth of a grain the patients not infrequently complained of some stupor and nausea. Turnauer had a patient in whom a twelfth of a grain produced slight collapse. Rosin observed such effects as dizziness, nausea, vomiting, or headache in fourteen of his forty-eight cases (thirty per cent.). I regret that I am unable to present exact statistics as regards these after-effects as presented in my series; yet this is impossible, since the reports do not present any uniformity in referring to this point. The general conclusion, however, is that these effects have occurred in a surprisingly small percentage of cases, when it is borne in mind that in so many instances the larger doses (a sixth of a grain) have been employed. Even the effects which have been recorded are only relatively simple, like those already mentioned above, and in no case was any serious effect noticed. These after-effects are decidedly of less frequent occurrence and of milder degree after heroine than those from morphine or codeine. As in every other morphine preparation, idiosyncrasies will be encountered, and the dose must be regulated according to the individual patient and to the effects which are desired in the particular condition under treatment. Heroine may safely be employed in all ages if the doses advised above are not exceeded. It is always wise to begin with the smaller doses and to increase to the maximum, if necessary.

No special notice need be taken of the controversy which has been waged between Harnack (27) and Dreser (28) on the toxicity of heroine. The statements made by Harnack, based as they are upon intravenous injections of large doses into two dogs, are so manifestly exaggerated, are based on such few facts, and are opposed to the collective experience of so many observers who have already reported nearly a thousand cases in which it has been safely used, that they may be dismissed with this mere mention. Still, it is well that the subject was discussed, since the fact is emphasized that after all heroine is a derivative of morphine, and that it is to be dispensed with the discrimination and judgment which are essential to all sedative drugs.

Habituation has been noted in a small percentage (six to eight) of the cases. Tauszk and Turnauer also noted this. All observers are agreed, however, that none of the patients suffer in any way from this habituation, and that none of the symptoms which are so characteristic of chronic morphinism have ever been observed. On the other hand, a large number of the reports refer to the fact that the same dose may be used for a long time without any habituation.

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CHOLELITHIASIS.*

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CHOLELITHIASIS is a disease of great antiquity, having been observed at a very early date in certain of the domestic animals by the Egyptian priests, and first mentioned as occurring in man some time in the fifth century, since which time many careful observers of each century have worked diligently and written copiously on the subject, and yet there remain many mooted questions to be settled and much labor to be performed.

Gallstones are found to vary greatly in size, form, color, structure, and number. Some are small as grains of sand, others are as large as goose eggs, and may completely fill the cavity of the gall bladder. Dr. Lessdorf reports the case of a woman whose gall bladder contained a stone weighing sixty grammes. Meckel describes one five inches long and four inches in circumference. While uniformity in size is the rule, they may be found in various stages of development, some being large and others small. In form they may be spherical, ovoid, or polygonal, having from four to six or even a dozen facets, by which they articulate one with the other.

Rough, warty (mulberry) calculi are not uncommon, while rare forms are sometimes seen, such as cylindrical, flattened plates, leaflike masses, round-pointed stars, and rhomboid plates. There is a great variation in color, from almost white, yellow, red, green, and blue to almost black. The number also varies greatly. In some cases there may be but a single stone, while in others there may be thousands. Otto reports the case of a woman whose bladder contained seven thousand eight hundred and two. When a single stone is present, it is usually smooth, spherical, ovoid, or egg-shaped, while if large it will take the shape of the gall bladder. Usually they are multiple and of about the size of a peapod. This latter variety is probably produced in many cases by cleavage or breaking up of the larger stones, and by contact with others.

Some stones in the fresh state are soft and puttylike, and easily crumbled or mashed between the fingers; others are hard and brittle. As to specific gravity, stones in the fresh state are heavier than water, their specific gravity ranging from 1.020 to 1.090, while in the dried state they are much lighter and will float, probably on account of the air contained in the interstices.

In structure they may be laminated or striated, crystalline or amorphous. One feature which they all have in common is a nucleus, a cortical layer or shell, and an intermediary substance or body. The nucleus, having a darker color than the rest of the stone, may be composed of pigment, cholesterin, epithelium held together by mucus, foreign bodies, smaller calculi, blood, a distoma, or the cholate of calcium. In some instances more than one nucleus has been found. The cortical layer may be thick, and composed of more than one layer, or thin, and usually more fragile than the rest of the stone. It is commonly composed of cholesterin, cholesterin and bile pigment, or the carbonate of calcium, the latter forming a rough white crust. The intermediary substance may be homogeneous, striated and laminated, or only striated, the laminæ being composed of concentric layers similar to those of an onion, and may be composed of bile pigment alternating with cholesterin or other constituents of the bile. The striations radiate from the central nuclei. It may also have a waxy, soapy, earthy, or crystalline appearance.

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Most stones are composed of from seventy to eighty per cent. cholesterin, some being composed entirely of it, in which case they are white or yellow, having a smooth surface. In some the bile pigment predominates or is composed wholly of it, of bilirubin, biliverdin, cholepyrrhin, the cholate of calcium, etc., being dark green, red, brown, or black, non-crystalline, and easily pulverized. Stones having a preponderance of biliary acids, fatty acids, and calcium carbonate range from dark green to almost white. Other constituents are sodium chloride, iron, copper, earthy phosphates, and rarely manganese and mercury.

Gallstones may be found at any point where they were originally formed, or may have become arrested in their passage—the smallest radicle in the liver, in the glandular follicles of the mucous membrane of the biliary passages, in the gall bladder, or any of the ducts leading into or from it. The gall bladder is by far the most common location; next, the cystic duct, where they may have become impacted; then the common duct, and more rarely in the hepatic duct, it being in the latter case the result of occlusion of the common duct, the stones thereby being unable to pass and being forced into the hepatic duct.

They have also been found in other organs of the body, such as the bowels, stomach, pelvis of the kidney, ureter, bladder, uterus, the vagina, pleura, liver, portal vein, and the abdominal wall. They are no infrequent cause of fatal obstruction of the bowel. One authority stated that in over two hundred and fifty cases of obstruction of the bowel, twenty-three were caused by impaction of gallstones. They have also been known to be vomited from the stomach, coughed from the lung, passed from the bladder, and passed from the uterus during childbirth. They have gained entrance to these various organs by adhesive inflammation and ulceration through the gall bladder.

Ætiology.—There are many factors involved in the production of biliary calculi. Age is one of the most prominent ætiological factors in their production. It is more common after the age of forty, but has been known to exist in childhood, and even in the newborn. The formation may extend over many years and may not be detected until late in life, if ever. One authority stated that in many thousand post-mortems gallstones were found to exist in about seven per cent.

This affection is much more common in females than in males, some giving the proportion of three to two, while others give as high as five to one. Osler states that twenty-five per cent. of women over sixty years of age, as shown by post-mortems, have gallstones. This circumstance is largely the result of their more sedentary habits and the constriction of the abdomen by tight-fitting clothing and corsets. Many claim that it is more common in women who have borne children, while others disclaim this as an ætiological factor, as most women between the age of forty and sixty have borne children. It is also found frequently in men leading inactive lives, such as those who have been bedridden for long periods, and those who have been confined in hospitals and prisons.

Diet. — Infrequent meals, leading to infrequent emptying of the gall bladder, are claimed to be a common cause, as is also the eating of food in excess, especially fats, sweets, starches, and spirits in excess. This disease is rarely found in the hot tropical countries, where the amount of fat eaten is very small.

Diathesis.—Notwithstanding the weight of authority is against diathesis or heredity as playing any rôle in the causation of this disease, it is unquestionably proved that it is more frequently found in the gouty, lithæmic, and obese.

With the exception of epithelium, mucus, and foreign bodies, every substance composing gallstone is found in normal bile. No change takes place in healthy bile, excreted from a healthy liver and contained in healthy biliary passages, but if prevented from escaping for a considerable period of time, as from a catarrhal condition of the gall bladder, occlusion of the ducts from preexisting stone, adhesions, or pressure from without—such as from tumors of neighboring organs, constriction of the abdomen producing pressure on the bladder or ducts—the bile becomes altered, decomposition then ensues, and the bile elements are deposited. Morbid changes in the mucous membrane of the gall bladder take place; also, any morbid changes in the liver altering the composition of the bile may cause a separation of its salts. Some observers point to a bacterial factor in this disease, claiming that certain forms of micro-organisms, particularly the *Bacillus coli communis*, gain entrance to the gall bladder, setting up inflammation, and in some cases, where pyogenic forms are present, suppuration. Other diseases, such as cancer of the bladder or ducts, are held by some as being an ætiological factor, but whether they are the cause or the result of the irritation set up by the presence of gallstones is a matter which has as yet been undecided. A diminution of the sodium salts in the bile is considered by many as one of the causes leading to a separation of its elements making stone formation possible.

Some authorities state that the formation of calculi is not the result of the separation of the biliary salts from the bile, but that it is due to an increased excretion of cholesterin and the cholate of calcium from the mucous membrane of the gall bladder, both substances being found in the mucus thus secreted in much larger quantities than occurs in the bile.

Pathology.—The gall bladder may be normal, dilated, sacculated, or atrophied. Its walls may be very thick or very thin, may be soft and friable or dense from inflammatory thickening, or may have undergone calcareous degeneration. It has been known to almost fill the abdominal cavity, while it may be degenerated to a body no larger than a pea or a fibrous cord. It may be adherent to any of the adjacent organs or the abdominal wall. Its walls may be the seat of general or local catarrh. Ulceration may occur at any point in its walls or in the ducts. The ducts may be enormously enlarged and sacculated. Calculi may cause abscess of the liver, local fatty degeneration of the liver, inflammation of its ducts, pylephlebitis, ulceration or empyema of the gall bladder. Peritonitis may follow rupture of the gall bladder or duct or by the extension of inflammation. When the hepatic duct becomes occluded we find the biliary tubules throughout the liver dilated, and in pronounced cases the liver substance surrounding them may be infiltrated with bile or undergoing fatty degeneration; or the ducts may be the seat of catarrhal inflammation, suppuration, and abscess. Jaundice is more or less marked, and, if long standing, a condition of cholæmia may be induced. When the cystic duct is occluded the changes are purely local: enlargement or dilatation of the gall bladder, catarrhal inflammation or suppuration, the contents becoming clear, mucoid, or filled with pus (empyema). When the common duct becomes occluded we may have dilatation of the common and hepatic ducts, sometimes to an enormous degree, with the damming back of the bile into the liver associated with jaundice, and the same changes take place in the secretion as occur in the gall bladder, the latter not necessarily being enlarged. We may have also ulceration, gangrene, or perforation of the gall bladder or ducts, setting up a fatal peritonitis.

Symptoms.—In the absence of complications, and when the stone remains quiescent in the gall bladder, symptoms may be entirely wanting, and the condition unsuspected during life and only found by post-mortem. When gravel is formed in the smaller radicles of the hepatic duct the liver may be congested, but only slightly if any enlarged. A continuous dull pain, weight, and constriction in the right hypochondriac region will be experienced, accompanied by nausea, other gastric disturbances, and rarely jaundice; these symptoms may sometimes be accompanied by chills, fever, and sweats resembling intermittent fever, in which case the most expert clinicians have been deceived. When the hepatic and larger ducts become occluded the liver is found enlarged; jaundice is present, accompanied by colic, rigors, sweats, and fever. The gall bladder may be normal in size. When the stone is large or the gall bladder contains large numbers, they excite inflammation, occlude the duct, and excite pain, which is increased by violent physical exercise and becomes more or less relieved during repose.

Biliary Colic.—The onset of pain may be gradual, epigastric or located in the region of the liver, and is often preceded by malaise, bitter taste in the mouth, constipation, a heaviness in the hypochondriac region, icterus, migraine, etc. In most cases attacks come on suddenly, two or three hours after eating, or about the time the gall bladder is normally emptied. The pain may be preceded or accompanied by rigors, and is most intense in the right hypochondriac region, radiating to the umbilicus, chest, under the shoulder blade, and stomach, and in some instances to the testicles, and is analogous to renal colic; it is often attended by a sensation of pulling or tearing, and remittent in character, acute exacerbations being followed by intervals of relief. The patient rolls and tosses, the face is pale, the body covered by profuse perspiration, the pulse slow and feeble, the temperature during the attack being elevated to 102° to 103° F. The pain may subside suddenly when the stone is expelled into the duodenum or falls back into the gall bladder, or the attack may end in delirium, fainting convulsions, and on rare occasions death; the abdomen being tympanitic, the muscles rigid, marked tenderness and meteorism throughout the abdomen, vomiting, and hiccough often being present throughout the attack.

Icterus may be wholly absent; if present, it usually does not come off for twenty-four hours after the beginning of the attack and is commonly transient. The stools are chalky, the urine dark in color, an analysis showing the presence of bile pigment. When it occurs periodically it is evident that more than one stone is being passed, or that a stone has become lodged and is acting as a valve in the common or hepatic duct, occluding it completely at longer or shorter intervals. When jaundice assumes a chronic form it is due to a permanent obstruction of the choledochus, but when the transient form exists the diagnosis can be made with some degree of certainty. Inflammation of the gall bladder and ducts following hepatic colic, especially if you find a tumor of the gall bladder, icterus, and an intermittent fever, points strongly to calculi as the exciting cause. The presence of a tumor of the gall bladder, together with the passage of gallstones per rectum or through a fistulous opening, are symptoms which confirm the diagnosis.

Diagnosis.—An early diagnosis is not always possible, but, fortunately, a positive diagnosis is not absolutely essential, so far as treatment of the attack is concerned. In making a diagnosis we have to aid us the history, palpation, percussion, auscultation, thermometry, urinary analysis, and the exploring needle. The only positive diagnosis is to discover the stone, either in the stool or escaping through an external fistula; even here mistakes may be made, as concretions may occur in the stomach or in the intestinal tract and pass per rectum or be vomited. Seeds may be mistaken for stones, as has frequently happened. The saponifying action of bile or undigested fat forms masses somewhat resembling calculi. Tumors may be present in the region of the gall bladder and may be detected on palpation. It is possible in some cases with thin abdominal walls to feel the concretion within, and in some instances it has been possible by the aid of the stethoscope during palpation to hear the stones grating together. The exploring needle has been used to make a diagnosis, puncturing the gall bladder through the abdominal walls, and if a stone is encountered the diagnosis is positive. An enlarged gall bladder must not be mistaken for a hydatid cyst or cancer of the stomach. The history and a careful analysis of the symptoms will usually prevent error.

Pain, intense, paroxysmal, tearing, located in the right hypochondriac region, extending to the umbilicus, stomach, chest, and under the right shoulder blade.

Jaundice, coming on twenty-four hours or later after the beginning of the attack, disappearing after pain subsides, but not always present, and may be so slight as to escape detection. When present, it is more easily seen in the conjunctiva, under the tongue, vault of the palate, and also of the nose, while the urine will often show the presence of bile when icterus is not noticeable. The pulse in the absence of complications is slow and feeble.

The temperature is usually elevated to 102° or 103° F. during the attack, followed by profuse perspiration, and again dropping to normal between the attacks. Nausea and vomiting may be present, after which the pain frequently subsides.

Differential Diagnosis.—This is often quite difficult, and in some instances can not be made with any degree of certainty without an exploratory incision. Of the many conditions which have one or more symptoms analogous to those of the disease in question and from which a differential diagnosis must be made might be mentioned:

Cancer of the biliary passages or neighboring organs.

Gastralgia and other neuralgias.

Lead, intestinal, and renal colic.

Tumors of the right kidney, of the right side of the omentum, and head of the pancreas.

Floating kidney, hydronephrosis, ovarian, hydatid, and other cysts.

Intestinal obstructions, strangulated hernia, and appendicitis.

Gastric ulcer, peritonitis, poisoning, and catarrh of the biliary passages.

Any of which may simulate gallstones, but a careful analysis of the symptoms will usually prevent error.

Complications are numerous and varied; those most frequently met with are cancer of biliary or neighboring organs, intestinal obstruction, fistula—cutaneous or into adjacent organs—abscess of the liver, pericystic or extraperitoneal abscess; rupture, ulceration, and gangrene of the biliary organs; empyema of the gall bladder or thorax, pylephlebitis, cholecystitis, and adhesions around the gall bladder; obstructions of the cystic duct with dilatation or atrophy of the gall bladder; obstruction of the common duct with catarrhal or suppurative cholangeitis; infiltration of the liver, if accompanying changes in the liver tissue (cholæmia).

The *prognosis* should be guarded, but in uncomplicated cases it is usually good. Recurring attacks are always to be looked for as long as concretions remain or a tendency to their formation exists. Death may take place suddenly, from pain and shock alone, from rupture of the bladder or duct, or from many of the various complications which may arise.

The *treatment* must be considered from two standpoints—medical and surgical. Under the medical treatment we have the prophylactic, palliative, and curative. For the relief of pain, opium in some form must be resorted to, preferably hypodermically. Extreme caution should be exercised in the use of this drug, as death has resulted from the administration of the large doses sometimes necessary to relieve the pain, the stone being suddenly passed and the lethal effect of the drug overpowering the patient and causing death. Chloroform, atropine, hot applications, hot baths, and emetics have sometimes been given with apparent benefit, but the latter must be used with caution, as they may produce rupture of the gall bladder, terminating in peritonitis and death. After the pain has subsided purgatives should be given.

Prophylactic. — The diet should be free from starches, sweets, and meats in excess, especially fats. Active outdoor exercise should be insisted upon. Drugs which increase the secretion of bile, as calomel and the phosphate, sulphate, salicylate, and bicarbonate of sodium, by rendering the bile more watery and increasing its flow, thus preventing stagnation in the gall bladder and ducts, have proved of value in many cases, and are thought by some to have a solvent action on stones already formed.

Without disease of the biliary passages stone formation can not take place; therefore remedies, such as turpentine, the alkaline mineral waters, especially the alkaline sulphur springs, Carlsbad, Vichy, or Ems, which have a curative action upon the mucous lining of these organs, are useful in preventing stone formation. Again, the diminution of the sodium salts in the bile being one of the causative factors in this disease, the sodium salts, particularly the carbonates of sodium, are especially valuable.

Curative Treatment.—Attempts are rarely made at present to dissolve stones already formed or to resort to methods to cause their expulsion other than surgically, Ether, chloroform, turpentine, the cholate of sodium, the alkalies, palpation, the elastic bandage, and olive oil have all been tried only to be discarded.

Complications are to be treated as they arise by the means most suitable to the condition present.

The *surgical treatment* of biliary calculi and diseases of the biliary passages is of comparatively recent origin, so far as the performance of the various operative procedures is concerned. A number of different surgical procedures have been devised for the relief of biliary calculi, and when such procedures are carried out in time, under modern aseptic surgical methods, and by skillful operators, the mortality is surprisingly low. The more prominent ones are:

Cholecystotomy, or the incision of the gall bladder and the evacuation of its contents.

Two methods have been devised: Cholecystendysis, or incision of the gall bladder, evacuating its contents, suturing the incision, and returning the viscus to the abdomen.

Cholecystostomy, or incision of the gall bladder, stitching the edges of the incision to the margin of the incision through the abdominal peritonæum, leaving an external fistula.

Cholecystectomy, or the removal of the gall bladder in its entirety.

Cholecystenterostomy, or forming an anastomosis between the gall bladder and some portion of the intestinal tract, the most desirable point being the duodenum—cholecystduodenostomy.

Choledochotomy, or incision of the bile ducts and removing the stone, suturing the incision, or draining through the external incision.

Cholecystotomy, or incision of the gall bladder, was first suggested by Petit in 1733, since which time little was done until June, 1867, when Dr. Bobbs, of Indianapolis, performed the first cholocystotomy and removed fifty small calculi from the gall bladder of a woman, his patient making a perfect recovery; since which time many operators have performed this operation with very gratifying results. Greig Smith gives the mortality at not over five per cent., if operated upon before cholæmia supervenes, in which latter case it is much higher. The indications for the operation are:

Frequent recurring biliary colic, without jaundice, with or without enlargement of the gall bladder.

Enlargement of the gall bladder without jaundice, even if unaccompanied by great pain.

Persistent jaundice, ushered in with pain, where other symptoms render it probably due to gallstones.

Empyema of the gall bladder.

Peritonitis starting in the right hypochondrium.

In abscess around the gall bladder, whether over or under the liver.

Adhesions around the gall bladder causing persistent pains and discomfort.

Cholecystectomy, or removal of the gall bladder, was first advocated and performed by Langenbeck in 1882. The mortality of this operation is said to be about twelve per cent. The indications for the operation are somewhat limited, and in cholelithiasis are:

Where the gall bladder is so atrophied that its walls can not be sutured to the abdomen without tearing.

Where there has been perforation after ulceration and empyema, its walls being so thin or so much inflamed and friable that they will not bear suturing.

Where a mucous fistula remains, the cystic duct being impervious.

Gangrene of the gall bladder.

Cholecystenterostomy, or the formation of a fistulous opening from the gall bladder, was first performed in 1881, by Winiwarter, he connecting the gall bladder to the colon.

In June, 1887, Monastryski united the gall bladder to the jejunum.

In July, 1887, Kappeler formed the anastomosis of the gall bladder to the ileum, while to Dr. Gaston, of Atlanta, Georgia, belongs the credit of first suggesting the possibility and the advisability of forming the anastomosis of the gall bladder with the duodenum, which operation was first performed on the human subject in 1889 by Terrier.

In 1892 Dr. J. B. Murphy, of Chicago, introduced his anastomotic button to the profession, which has done much to simplify and reduce the mortality of this operation; the mortality being about thirty-six per cent. from all other methods, while in a series of fifty-one cases operated upon, using the Murphy button, only two deaths ensued.

Choledochotomy, or the removal of stones from the bile ducts by incision and closing the opening thus made by sutures, was first proposed, and the operation performed by Courvoisier, in 1890. The indications for the operation are impaction of stone in one of the bile ducts, which can not be delivered into the bowel or the gall bladder and removed by cholecystotomy, or the stone can not be crushed with a padded forceps or with the fingers and the fragments passed into the duodenum. Many surgeons object to the crushing operation (cholelithotrity), there being danger of bruising the walls of the duct, thereby causing rupture, ulceration, or gangrene. The difficulties encountered are in locating the duct when the common duct is involved, and in suturing the duct after delivering the stone. Dr. W. S. Halsted, in 1898, introduced a series of small hammers of different sizes, one of which he introduced into the incision in the duct. He is thereby enabled to pass a series of Lembert sutures over it, and after its removal the sutures are tied, thereby securing more easily than by any other method accurate approximation of the edges of the incision.

Case.—I wish to report an interesting case upon which I operated in Lafayette, November, 1898.

The patient was a young woman twenty-five years of age, unmarried, well nourished, appetite and digestion good, complexion clear, the pelvic organs and urine being normal. Upon examining the patient I found a tumor in the abdominal cavity, on the right side, and below the level of the umbilicus. On palpation, I found this tumor to be about four or five inches in length and about an inch and a half in diameter, with its long axis vertical, it being freely movable within the abdomen, I being able to move it about the level of the umbilicus and toward the median line. At times it seemed to almost entirely disappear, and could be found with difficulty. Palpation caused a sickening pain, which radiated to the back in the region of the kidney, which pain became much more severe during her menstrual periods, often requiring morphine to control it. Menstruation was normal, and I could discover no connection between the pelvic organs and the tumor. Patient had never suffered from colicky pains or pain of any kind in the region of the liver, gall bladder, stomach, or under the shoulder blade, and had never suffered from jaundice. My diagnosis lay between floating kidney, ovarian cyst, a tumor of the omentum or bowel, and intestinal obstruction. After treating the case I felt justified in excluding all the foregoing conditions, except floating kidney, and upon this hypothesis I decided to operate and, if on opening the abdomen my diagnosis was verified, to suture the kidney into place either through the abdominal opening or, if I found that I could not do this, then to close the abdomen, make a lumbar incision, and stitch it in place from the rear. On November 5, 1898, assisted by Dr. Wetherell and Dr. Throckmorton, I opened the abdomen in the median line, and on introducing my finger I encountered a sausage-shaped tumor containing fluid, which was probably an inch in diameter and six or seven inches in length. Following it up to its origin, which I found to be the liver, I felt a hard nodule in the upper constricted portion or neck. Enlarging my opening, I was enabled to bring it to view and found it to be soft and of a pale pink color, very much like that of the intestine. Making a diagnosis of enlarged gall bladder with impaction of the cystic duct, I abandoned my central incision and made a second one in the right linea semilunaris, about three inches long, extending up to the margin of the rib. Being enabled thereby to extract the tumor through the incision, I passed a couple of anchoring sutures and incised the gall bladder. The contents I found to consist of thick black mucus, and introducing my finger I delivered one large gallstone weighing a hundred and twenty-three grains when dry, and eight smaller ones weighing from ten to thirty grains each. Disinfecting my hands, I again introduced my fingers through the central incision and, grasping the cystic duct, I was able to force the calculus there impacted into the gall bladder and thence extract it. It weighed when dry one hundred and thirty-two grains. After washing out the gall bladder thoroughly and stitching its edges to the incision in the abdominal wall, I closed the central incision and introduced a drainage tube through the fistulous opening into the gall bladder. The patient suffered but little from shock, the operation taking less than an hour, and made a speedy and uncomplicated recovery. I removed the stitches on the tenth day. Bile flowed freely through the fistulous opening, averaging about twenty ounces a day. The bowels moved on the third day after the operation, the stools containing considerable bile, and for two or three days following the amount of bile discharged through the fistula was greatly diminished, but again came up to the normal amount, after which the stools were clay-colored, showing no trace of bile. This condition continued until the following February, the patient beginning to show signs of weakness, and was easily fatigued, which I believed to be on account of the lack of bile, thus depriving her system of the benefit of her fats. Feeling satisfied that the common duct had from some cause unknown to me become permanently occluded, I decided to perform a choledudodenostomy. Accordingly, on February 21, 1899, I again placed the patient on the table and, dissecting the gall bladder away from the abdominal wall and enlarging the incision in the right semilunaris to about five inches, I took up the duodenum, passed a purse-string suture, incised between the same, introduced the male half of a small Murphy button into the incision, drawing up the purse string tightly around the neck of the button, and tied, thereby drawing the edges of the bowel around the neck of the button. I introduced the other half of the button into the opening in the gall bladder, fastening in like manner; then, by inserting the neck of the one into that of the other, and firmly pressing the two halves together, they locked themselves and held the peritoneal covering of the bowels in firm and even contact with the peritoneal covering of the gall bladder. I closed the abdominal wound and the patient made an uninterrupted recovery, the bowels moving spontaneously two days after the operation, the stool containing bile in large quantity. The button was passed per rectum on the eighteenth day, the patient being able on the nineteenth day to dress and walk about her room and follow her usual vocation, that of a nurse, in a week or ten days thereafter. The patient has since regained her strength completely, improved greatly in flesh, and has continued in perfect health up to the present time.

SUPPURATIVE ETHMOIDITIS AND ITS TREATMENT.*

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In disease of the accessory sinuses of the nose it is doubtful, in the opinion of rhinologists and otologists to-day, which is the most frequently involved, the maxillary sinus or the ethmoid; but I think the consensus of opinion will favor the latter, as recent critical research in pathological conditions of the nose has shown trouble much oftener in this region than was ever suspected. The condition may be either acute or chronic catarrhal inflammation. The acute is not of serious import, generally subsiding quickly without much treatment, whereas the chronic form may end in suppurative ethmoiditis, which usually occurs in the course of a catarrhal rhinitis in either its acute or chronic form; but the radical view taken by Bosworth and Woakes that "the tendency in all cases, and the result in the large majority of instances, of a suppurative inflammation of the ethmoid cells is necrosis of bone," and that "all ethmoiditis tends toward and usually develops, sooner or later, into necrosis," is an observation I think not experienced by rhinologists generally in their clinical work. When cases due to syphilis, tuberculosis, mercury, phosphorus, or trauma are eliminated, it is not often that necrosis or caries is found.

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Occasionally, suppuration has been observed in conjunction with facial paralysis, and it is an undecided question whether the suppuration is due to the paralysis or the paralysis to the suppuration. Weichselbaum believes in the first, and quotes several cases to prove his theory, whereas Zuckerkandl is inclined to the latter.

Bosworth classifies ethmoiditis into three divisions: 1. Extracellular myxomatous degeneration, the disease being limited to the middle turbinated body. 2. Intracellular myxomatous degeneration, in which not only the middle turbinated body but also the ethmoid cells have undergone myxomatous degeneration. 3. Purulent ethmoiditis, which may or may not be associated with myxomatous degeneration of the ethmoid, but which usually is associated with nasal polypi.

The inflammation may extend to the cells from the nose, the orbit, or any of the accessory cavities, or it may occur by a closure of the ostium ethmoidale by pressure of a turgescent or hypertrophied middle turbinated body, deflection of sæptum, nasal polypi, etc.

There is much difference of opinion as to whether ethmoiditis causes polypi or polypi produce ethmoiditis. I believe that clinical experience teaches us that in a measure both opinions are correct.

A severe inflammation is often followed by necrosis. Syphilis, no doubt, is one of the most frequent causes of necrosing ethmoiditis. Any or all parts of the ethmoid may be affected by an inflammatory process, which is bad enough at any stage, but when it reaches the suppurative type becomes a most difficult affection to handle successfully. This disease may, and often does, extend to the frontal, maxillary, and sphenoidal sinuses. Bosworth, in thirteen cases of ethmoidal disease, found the antrum implicated in seven—over fifty per cent. Many cases of exophthalmia, narrowing of the field of vision, and blindness have been reported, caused by the pressure of empyema of the ethmoidal and sphenoidal sinuses.

I have found suppuration of the ethmoid quite frequent, but necrosis rather rare, excepting that due to syphilis, phosphorus, mercury, etc. If pain is experienced, it may be at the base of the nose, infraorbital, at the back of the eye or in the eyeball, or a very general pain over the whole head, but oftener there is no pain whatever. Muco-pus will be seen to ooze from under the anterior extremity of the middle turbinated body, or the turbinated may be greatly distended and blanched in appearance with no flow of pus, as I have seen in several of my cases. Again, it may empty into the orbit and the pus be discharged from the inner canthus of the eye. It is generally attended with some fœtor, but not so pronounced as is the case of empyema of the antrum. If only the ethmoid is involved, the fœtor is not perceived by the sufferer, owing to the impairment of the sense of smell. The health is usually much impaired; asthma, hay fever, and other forms of neuroses often exist, also loss of appetite, and nausea from the mucopurulent secretion passing through the postnasal space into the stomach. It is sometimes difficult to tell which cavity is the seat of the disease. As before stated, a simple inflammation generally subsides spontaneously as soon as the acute nasal difficulty passes away, but a suppurative process may be most difficult to conquer, often lasting for months and years, occasionally never responding to the most skillful treatment.

It may happen that the whole intracellular structure is broken down and carried into the nose, thereby giving a good drainage and effecting a rapid and complete cure.

The treatment consists in thoroughly cleansing the nasal cavities with some antiseptic solution, removing all obstructions to free drainage. Among such are found deflected sæpta, hypertrophies, spurs, polypi, etc. By good care a few will get well, but by far the large majority will require surgical interference. This is accomplished by the removal of the anterior portion, or, in some cases, the entire middle turbinated. This is quite readily done by the scissors, drill, or various nasal cutting forceps, preferably those devised by myself, which I have found to work better than any others, and if used once by rhinologists I believe will be continued in use until something better is invented. However, their merit or demerit will be demonstrated. After this is done, curetting or drilling with a bar to break up the intracellular structure is necessary in order to give free exit to pus and access to the parts for proper cleansing. The wholesale removal of the turbinates, as practised by Woakes, is absolutely uncalled for, as is proved by most of the leading rhinologists of the world. Recent cases respond rather quickly to treatment, but those of two or more years' standing are extremely obstinate, and I am doubtful if they ever get entirely well, no matter how cautiously handled. This seems to have been the experience of most men.

On referring to my history records, I find that during the last eight years there have come under my treatment thirty-nine cases of suppurative ethmoiditis, a few of which I should now like to report.

Case I.—Mrs. J., forty-three years of age, consulted me on April 3, 1895, complaining of severe headaches, particularly on the left side, and great pressure at the root of the nose and in the left eye. For eight years she has suffered intensely with asthma. An oculist had corrected a high degree of astigmatism, giving her some relief when reading or doing fine work. A surgeon had divided and exsected a portion of the left supraorbital nerve with negative results. She was advised to leave the seacoast and go inland in hope of relief, which she did, spending some time in Colorado, New Mexico, California, and Honolulu, with no benefit, excepting diverting her mind in a measure from her trouble. Eventually she returned to Brooklyn, thoroughly discouraged. She was advised, for the first time, to consult a nose and throat specialist, and referred to me by her family physician.

Examination showed great enlargement of the left middle turbinated body, pressing on the sæptum and outer wall of nose, which was broadened unilaterally. A small swelling appeared in inner canthus of eye. Some exophthalmia and contraction of the field of vision of recent date. The turbinated had a blanched appearance and was pultaceous to the touch, indicative of a cystic or suppurative condition, although no pus was visible. Otherwise, both nares were about normal. The general health was miserable.

With the cutting forceps I removed the anterior extremity of the middle turbinated body, resulting in a free exit of fœtid pus; curetted with a sharp instrument, easily breaking down all possible intracellular structure which was carious; opened from the eye into the ethmoid cells; cleansed thoroughly with 1-to-10,000 bichloride, followed by an insufflation of aristol.

Treatment was continued with more or less regularity over a year, but pus formation has not entirely ceased. However, the asthma, headaches, and all eye symptoms have absolutely subsided, and the lady is now in robust health.

The history of the cause of this case is obscure, but it probably resulted from a neglected intranasal affection.

CASE II.—Charles B., aged twenty-four years, referred to me by Dr. Barker October 9, 1897, complains of constant occlusion of nose, being compelled to breathe through the mouth both day and night. Is a sufferer from hay fever and asthma, going to the White Mountains every summer to obtain relief. Has had on neck within six months thirty-two boils and one carbuncle of large dimensions. General cachexia; specific history at eighteen years of age. Examination shows very large sæptal spurs right and left, and greatly hypertrophied inferior turbinates on both sides pressing on sæptum, almost wholly filling vestibule. Could not see middle turbinates even under what contraction could be produced by cocaine, which was but slight. Constant oozing of pus into nasopharynx. With saw removed spurs, and later a portion of each inferior turbinated. In a few days I was able to make a proper examination of the middle turbinals, finding the right much enlarged and pus coming from beneath the anterior portion. Excepting the prophylactic measures necessary, I did nothing else for several weeks, to give time for at least a partial recovery from the operations, at which time pus was discovered flowing into the nose from the maxillary sinus. The question arose whether the ethmoiditis was caused by a backing up of the pus into the ethmoid from the antrum through the ducts, or the reverse.

However, I at once cut into the ethmoid and removed a large quantity of carious bone. The discharge from the antrum soon ceased, proving that the antral trouble originated in the ethmoid. The boils promptly disappeared and no more have formed; also, no hay fever or asthma has manifested itself. Health excellent, and the patient has gained thirty pounds.

CASE III.—Mr. M., fifty-four years of age, consulted me on May 10, 1898, complaining that for about seven years he had suffered severely with neuralgia; the pain starting from the inner angle of the right eye and extending first over the corresponding side of the head, and eventually over the whole head. If his nose became occluded, the pain was more severe. For many years a flow of pus came from the right nostril, and the sufferer noticed that the pain was much greater when the pus ceased altogether, or nearly so, than when there was free discharge. He has been treated by his family physician by local applications, internal medication, and nasal spray. A resection of the supraorbital nerve had been advised, but had not been carried out.

Rhinoscopic examination discloses a much-enlarged right middle turbinated body from around which a purulent secretion was coming. The ethmoid cells were opened by the forceps and curetted, and, although filled with pus, no dead bone could be detected. The pain subsided immediately, and in two months' time the cure was apparently complete. In this case only the anterior cells were involved.

In my thirty-nine cases the maxillary sinus was implicated in sixteen. Eight were carious, there was suppuration of the whole cellular structure in eleven, and anterior involvement was found in twenty-eight.

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DIARRHŒA.

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A VAST amount of confusion exists to-day, not only among general practitioners but among specialists as well, in regard to intestinal diseases. Lines have been drawn by some, and duodenitis, jejunitis, ileitis, typhlitis, colitis, and proctitis have been recognized, though in the majority of cases the entire intestinal tract is involved to a greater or less extent—sometimes the small more intensely and sometimes the large—but during life it is often quite impossible to say which portion is specially affected, for many times when the physician is called the abdomen is so tympanitic, or again so tender, that nothing but a limited examination can be made. And again, no hard-and-fast lines can be drawn anatomically, for what may seem to us an extreme tenderness of the small intestine may be of the larger, and *vice versa*.

The term diarrhœa is used when we wish to designate all frequent loose evacuations from the bowels, and is always attended with one of two conditions—either an increased peristalsis of the muscular coat of the intestine or an increase of the intestinal secretions; and, while the term diarrhœa is used so frequently, it can not, in my opinion, be anything more than the designation of a symptom, though, I am sorry to say in this enlightened age of medicine, it is used as if a disease itself, and no doubt allows us all a loophole of escape when we can not determine the abnormal conditions that exist.

The pathological conditions, when diarrhœa is present, are many and varied, and the post-mortem may or may not show any anatomical changes whatever.

In those cases in which, during life, all the symptoms of an intestinal catarrh were present, neither redness, swelling, nor increased secretion may be found post mortem. It is rare to find the mucous membrane injected; more often it is pale and covered with mucus.

In those cases due to impaired circulation it is rare to find any hyperæmia.

The mucous membrane may be swollen, softened, and infiltrated, and portions detached and found among the intestinal contents; these changes, though, are thought to be post-mortem ones.

In acute catarrhal enteritis there is, no doubt, an engorgement of the vessels of the intestine, the lymph follicles are swollen, particularly in children, and the solitary and Peyer's glands stand out prominently and present in many instances small erosions, the so-called follicular ulcers. And many pathologists stand boldly to the statement that diarrhœa can not be without a catarrhal condition of some part of the intestinal mucous membrane.

The causes of the conditions in which diarrhœa may be a symptom may be classified as primary, secondary, and predisposing.

Among the primary, the first and most important is that of—

1. *Food.*—It is a statistical fact that bottle-fed children suffer more with diarrhœal conditions than those fed from the breast; and among 1,943 cases collected by Holt, only three per cent. were breast fed.

Many children, when changed from breast to cows' milk, are immediate sufferers with a diarrhœal condition.

The harmful habit of immediately putting the child to breast or bottle when crying or fretful is to-day one of the most frequent causes of this symptom. Irregular feeding is a curse to helpless children, and one of the first things a physician should learn to correct.

Unripe fruit and improperly cooked food play a prominent rôle in causation, though in all persons there are certain articles of diet that as soon as eaten are productive of a profuse diarrhœa, due, no doubt, to irritation and increased peristalsis.

2. *Toxic Materials.*—From decomposed food or milk.

Arsenic and mercury act in the same way.

3. *Weather.*—Sudden changes in temperature produce in some a diarrhœa. With children diarrhœa is associated in the summer months, and July shows the greatest mortality, though the mean temperature may not vary much from that of June or August. The temperatural condition is, no doubt, a predisposing one.

4. *Changes in the Succus Entericus.*—Physiologists do not enlighten us much upon the composition of this secretion. It is said that an increased secretion of bile favors a diarrhœa, and again its diminution allows a fermentative process which is a much more frequent cause.

Some designate a fatty diarrhœa from absence of the pancreatic juice.

5. *Nervous Influences.*—Fright, emotion, and worry are productive of a diarrhœa, and many interesting cases are mentioned in literature due to these causes.

Melancholia and general paresis are frequently accompanied with a diarrhœal condition.

An interesting study is the diarrhœa that follows an infant's nursing the breast of an angry mother.

6. *Tuberculosis.*—Tuberculosis may be a primary, a secondary, or a predisposing cause.

7. *Bacteria.*—Much has been learned in late years of bacterial causes. The bacteria most commonly found in the intestinal tract, particularly in children and those who use milk, are the *Bacterium lactis aerogenes* and the ever-present *Bacterium coli communis*, though in most diarrhœal conditions many forms are present, especially prevalent being the proteus group.

Bacterial action was determined by Booker to cause changes in the food and intestinal contents, and not themselves acting as irritants to the intestinal walls.

8. *Drugs.*—In susceptible cases any of the ordinary cathartics may cause an attack of diarrhœa because of the exaggeration or prolongation of their physiological effects.

Among secondary causes are:

1. *Infectious Diseases.*—Dysentery, typhoid fever, cholera, pyæmia, septicæmia, and tuberculosis. In dysentery and typhoid fever the diarrhœa is due to the ulceration, while in cholera it is the direct influence of the bacteria and their products that produces it.

2. *Extension of Inflammation.*—In peritonitis, and also in invaginations, hernias, etc.

3. *Mechanical Causes.*—Not due to food but to impeded circulation in heart, lung, and liver diseases.

4. *In Cachectic Conditions.*—Such as follow cancers, anæmias, and nephritis.

5. *Dentition.*—In children diarrhœa may be present during dentition, and the bowels become normal as soon as the tooth has pierced the gum.

Among the predisposing are:

1. *Age.*—Children are susceptible to diarrhœa, the age of greatest susceptibility being between six and eighteen months.

2. *Surroundings.*—While most prevalent among the poor and in cities, it is a condition found among all classes; and yet poverty, filth, and bad surroundings predispose to diarrhœa as they do to other acute diseases in various seasons.

3. *Constitution.*—Everything that lowers vitality predisposes, such as rickets, marasmus, syphilis, tuberculosis, etc.

The macroscopical and microscopical as well as the chemical examination of a diarrhœal dejection presents an interesting study, and most of the causes can be determined by these examinations, and by these examinations alone.

The dejection may be serous, bloody, or mucous.

It may be acid or alkaline.

It may vary in consistence from semisolid to watery.

It may be foul and offensive, or may be sour but not fœtid.

Bacteria may be plentiful or may be only few in amount.

It may be full of undigested material or may be free.

It may contain a few epithelial cells or entire tubal casts of the intestine.

In color it may be clear, may be light yellow, dark, or blackish brown or greenish.

Diarrhœa may be the only symptom, or may be accompanied with other symptoms, which may aid materially in making the proper diagnosis, but it is not the purpose of this paper to enter into them.

In regard to treatment much could be said, but, as the treatment depends upon the causes, which must first be determined, and as the causes are so many and varied, time will not permit me entering upon that important subject.

In closing my paper, I will say that in the majority of cases three indications are to be met:

First and most important is a thorough cleansing of the intestinal tract, which I have always obtained by either small doses of calomel frequently repeated, by castor oil, or by enteroclysis, if the cause was determined to be in the lower bowel.

Second, rest, by abstaining from food for at least twenty-four hours or allowing only the easily digestible and non-irritable substances, such as albumin water, peptonized milk, etc.

Opium is a harmful drug in a majority of these cases.

Third comes correction of improper food, which in children is found to be the most frequent cause of diarrhœal conditions. These changes must be made according to indications present.

Holt's *Infancy and Childhood* and Osler's *Practice of Medicine* were freely consulted in the preparation of this paper.

THE
INFLUENCE OF SCHOOL LIFE ON VISION.

By PETER A. CALLAN, M. D.

I HAVE been for twenty-five years very much interested in this subject, and was pleased in one way and amused in another by reading a discussion which took place during September at the Twenty-fourth Congress of Public Health in Nuremburg, Germany. The teachers and doctors were pretty well represented in this meeting, and the fourteenth day was devoted to the school physician. The teachers contended that the school physician should look after the eyes, ears, teeth, and nerves of the children. I suppose incidentally they meant infectious and contagious diseases. The doctors were a little more comprehensive. They thought the buildings and equipment for lighting, heating, etc., should be looked after. There was one thing they all agreed on, and that was that the teachers should receive lessons in hygiene. The great point was to educate the public up to the point of knowing what to demand. I hope the question of studies and the excessive amount of unnecessary things which are taught in our schools will be brought up for discussion, for they should to a certain extent be done away with. The hours for the primary department I think are too long without recess. In the grammar department there is no recess whatever from nine to twelve and one to three.

With regard to my special department, I presume that impaired sight has been more the means of calling the attention of parents, teachers, and physicians to the bad sanitary condition of our schools than anything else. Modern ophthalmology had hardly passed its first decade when the first examination of the eyes of school children was made. That was in the early sixties and, of course, made in Germany, the land of myopia. Every succeeding decade the examiners have been more numerous and more children have been examined. The results have been tabulated. In 1875 the first examination was made in the United States; since then there have been a great many examinations made. The results have been very uniform. Beginning in the peasant school, it was discovered that there was one per cent. of nearsightedness. This gradually increased in the towns and larger cities until in certain classes in the university as high as seventy-five per cent. of the students were nearsighted. Comment is unnecessary. It may be said with regard to Germany, all old countries are slow to make reforms. They have old school buildings, a miserable type, and then we all must admit that they are excessively hard upon the students. They do a great deal of writing and their tasks are more severe than in this country.

In 1875 we had separate schools for colored children. I examined five hundred children in all. I found in what corresponded to the high school, the more advanced older children, three per cent, of nearsightedness. In the other school there was over one per cent. Now we all know that nearsightedness is caused by an elongation of the eyeball. We know that confinement and excessive near work cause this elongation. We know further that if such an eye were not forced to do this amount of work, it would not become nearsighted. There are certain children with inherited tendencies who are more prone to this disease than others, and we can truthfully say that nearsightedness is a disease of civilization; that it does not exist among barbarous or savage people; that it is due to abuse of the eye. I selected for example colored children, knowing that neither their parents nor their grandparents had ever enjoyed the luxury of spoiling their eyes which we have nowadays in our modern civilization. Dr. Agnew examined the scholars in the College of the City of New York and found fifty per cent. of myopia in certain classes. These students were, I think, of German or Russo-Polish descent, and some of other races went as high as twenty-five or thirty per cent.

With regard to myopia, we all admit that it is caused by an excessive amount of work. With regard to the thousand and one ailments, the headaches, sick stomachs, and so on—please do not think I am going to claim everything for the eye, but I do maintain what may be news to you, that there is no such thing as an absolutely perfect eye. Excepting a certain small amount of abnormities, I may call it the normal eye. Such a normal eye, if tasked too much, with poor light and bad hygienic surroundings, will cause reflex disturbances which will make the scholars very uncomfortable. A perfectly normal eye, such as we regard it, can develop very unpleasant symptoms. I think that our present scholars have too much to do. They have too long hours and not enough recesses. There is no question whatever that there is a depreciation of sight; there are a great many more wearing glasses than formerly—there is more need. Of course, it is not like the good old times that MacKenzie described, where a boy complained of not seeing, and the parents whipped him and the master whipped him, and then he saw.

I hope that the subject of the eyes of the school children and the amount of work will be clearly entered into.

35 West Thirty-eighth Street.

ENUCLEATIONS OF THE EYE.

By DAVID WEBSTER, M. D.

Case I. *Enucleation for Panophthalmitis.*—Ann D., aged fifty-two, was struck in the right eye on September 27, 1887, with a piece of iron. She presented herself at the clinic the next day, and on account of the severity of the inflammation was admitted to a bed in the hospital. The eye was very painful, the lids were greatly swollen, and there were chemosis and ulceration of the cornea. She was put to bed, leeches were applied to the temple, and iced cloths and atropine were applied to the eye. On the 29th all the symptoms were aggravated, and panophthalmitis was fully established. Anodynes and local applications failed to relieve the pain. An incision was therefore made through the anterior portion of the globe, in the horizontal meridian, and enough of the inflammatory products was allowed to escape to relieve the tension and the pain. A bandage was applied and the patient had a comfortable night. On October 8th the chemosed ocular conjunctiva, which protruded through the palpebral fissure and was so constricted by it that the swelling could not subside, was carefully pushed back, as you would "reduce a hernia," the edges of the lids were sewed together over it, and a pressure bandage was applied. On October 10th, the swelling having mostly subsided, the eye was enucleated. The recovery was smooth, and the patient was discharged on October 14th, with the orbital cavity almost ready for an artificial eye. I am not sure that anything was gained by waiting, and I think it might have been better to have enucleated the eye on September 29th, instead of making the "anterior incision."

Case II. *Enucleation of an Eye for Degenerated Cataract with Secondary Hæmorrhagic Glaucoma.*—Frederick R., aged twenty-three, came to my clinic at the Manhattan Eye and Ear Hospital on July 27, 1887. He stated that eight years previously he had accidentally discovered that he could not see things on his right side, and on covering his left eye he found that he had no vision in his right eye. He had never had anything done for the eye. A few days before he came to the clinic the eye became inflamed and very painful. The pain was worse at night and seriously interfered with his sleep. Upon examination, the left eye was found to have a small lenticular opacity and a myopia of twelve dioptres, but the fundus was healthy, and the vision was $\frac{20}{70}$ with a − 12 D. The right eye was without perception of light. The eyeball was red and the crystalline lens presented a chalky appearance. There was blood in the bottom of the anterior chamber and the tension of the eyeball was markedly increased. The indications for enucleation were obvious, and the operation was therefore advised. On August 2d, having been admitted to the wards, he was put under ether and the eye was enucleated. There was immediate cessation of the pain, and the healing was uninterrupted. The patient was discharged a week later, wearing an artificial eye with satisfaction.

The most remarkable thing about this case is that the eye was entirely blind before anything was noticed to be wrong with it. Probably the cataract, which was possibly the result of an unnoticed traumatism, had come on gradually—so gradually as not to attract attention. The degenerative processes in the eye would naturally have followed, and finally culminated in the painful glaucomatous condition that necessitated enucleation.

Case III. *Enucleation for Ophthalmitis, the Result of Injury.*—G. W. F., aged thirty-four, married, gimlet polisher, on September 24, 1887, while working at his trade, dropped a gimlet on a rapidly revolving emery wheel. The wheel, eighteen inches distant from his eye and revolving at the rate of eighteen hundred revolutions a minute, threw the gimlet against his right eye. It wounded the outer half of the upper lid and raised a "water blister" on the white of his eye. So slight were the pain and disturbance of vision at first that he paid very little attention to it. On the fifth day after the accident he consulted his family physician, and I quote from the doctor's letter as to the early history: "I saw him for the first on September 29th, at which time he was suffering some pain in eye and frontal region, but was at work in his garden. He told me that there had been very little pain in the eye for the first three days, and that he could see very well with it. After the third day pain came on, and at the time of my first visit he could hardly distinguish light from darkness. The sclerotic was very much congested, and the iris was completely masked by hæmorrhage which had taken place within the eye. There was a slight abrasion of the upper lid, and I looked for an injury to the eye at that point, but found nothing to indicate it. I directed the patient to consult an oculist at once, which he did. Dr. X. saw the patient on the same day and told him he thought he would regain the use of the eye; directed him to bathe it with hot water, and not to bandage or in any way confine the eye, but to let the corners of a handkerchief fall loosely over it to shade it, and to continue his work as usual if he wished to, and to return to see him in one week. On October 3d I discovered a swelling on the outer side of the eye under the upper lid, and found the patient suffering severe pain in the eye and in the right frontal region. He had slept very little the previous night. I directed the patient not to wait till the week was up, but to return to Dr. X. immediately. He did not succeed in seeing Dr. X. until October 7th, the above symptoms continuing in a more aggravated form. The swelling was diagnosticated as rupture of the eye, and the patient was directed to return home, and proceed as before, and return in a week." On October 10th the patient came to Dr. Agnew's office. We found the anterior chamber full of blood, and there was a hard, conical swelling on the temporal aspect of the sclera, more above than below the horizontal meridian of the eye, and the size of a large bean. There was perception of light, but the projection was very imperfect, and there was constant pain in and about the eye. An incision was made in the "lump," but no fluid escaped, and the mass was found to consist only of inflammatory products. The eye was bandaged and the patient returned to the care of his family physician. He was "completely relieved of pain. He continued comfortable without the aid of morphine or cocaine until the night of the 13th, when pain returned and he had a restless night." Notwithstanding the use of anodynes, the pain continued, and on October 17th he returned to Dr. Agnew and myself, with bare perception of light, with no hope of saving the eye, and with fear that it might finally affect the other sympathetically. At the Manhattan Eye and Ear Hospital he was put under ether and the eyeball was enucleated. External adhesions were found to have taken place, and there was a large deposit of organized lymph at the site of the blow. The eye was cut open and examined on the spot. There was blood in the anterior chamber, the vitreous humor was thickened, and there was complete detachment of the retina. The patient was discharged at the end of a week and wears a glass eye.

327 MADISON AVENUE.

Therapeutical Notes.

Chloral in the Treatment of Nervous Dyspepsia.—According to the *Presse médicale* for December 2, 1899, Dr. O. Rosenbach, of Berlin, recommends this solution of chloral:

℞	Chloral	1 part;
	Distilled water	5 parts.

M. From four to six drops to be taken, in half a glass of water, an hour or two after each meal.

A Lotion for Phtheiriasis Pubis.—The *Gazette hebdomadaire de médecine et de chirurgie* for December 7, 1899, gives the following formula:

℞	Mercury bichloride	3¾	grains;
	Oil of turpentine	450	"
	Glycerin	600	"
	Spirit of lavender	7,875	"

M.

Peroxide of Hydrogen in Chloasma.—Dr. L. Duncan Bulkley (*Journal of the American Medical Association*, December 23, 1899) says that in chloasma the action of the peroxide is sometimes very satisfactory, but occasionally fails. To be effectual it should be very freely applied, and allowed to soak into the skin, by means of cotton soaked in it and laid over the surface for five minutes morning and night. It will cause somewhat of a desquamation, but this can be easily remedied by the use of a little lanolin and rose ointment, or by a borax and glycerin lotion.

Aromatic Sulphuric Acid in its Archaic Form.—The term Mynsicht's elixir is occasionally found in old books. The preparation was probably the prototype of the aromatic sulphuric acid of the present day. As a curiosity, we here reproduce the formula from the *Centralblatt für die gesammte Therapie* for December, 1899:

Rp.	Rad. acor. calam.	āā 4.0
	Rad. galang.	
	Hb. absinth.	āā 2.0
	Hb. menth. crisp.	
	Fol. salviae	
	Flor. chamomill.	āā 1.5
	Rad. canell.	
	Fruct. cubeb.	
	Caryophyll.	
	Nuc. mosch.	
	Aloës	āā 0.5
	Fruct. Citr.	
	Sacchari	16.0
	Spir. vin. dil.	95.0
	Acid. sulf. conc.	16.0

D. S. 2—40 Tropfen in Wasser.

We fear that a nineteenth-century pharmacist would hardly look upon this as a "working formula."

For Facial Erysipelas.—*Riforma medica* for November 28, 1899, gives the following:

℞	Pure carbolic acid	from 15 to 75	grains;
	Tincture of iodine	from 15 to 45	"
	Alcohol	from 75 to 150	"
	Oil of turpentine	from 225 to 300	"
	Glycerin	1,200	"

M.

The affected surface to be painted therewith every two or three hours and covered with antiseptic gauze.

Copper in the Treatment of Acute Dysentery.—According to the *Indépendance médicale* for August 23, 1899, a Cairo physician, Dr. F. M. Sandwith, gives each day an enema composed as follows:

℞	Copper sulphate	15	grains;
	Tincture of opium	15	drops;
	Starch	450	grains;
	Water	1	quart.

M.

To allay the pain which sometimes follows the injection of this mixture into the rectum, a cocaine suppository is inserted. [The enema seems to us both too great in quantity and too strong.]

A Paste for Pruritus.—Leredde's formula is given as follows in the *Riforma medica* for October 24, 1899:

℞	Methyl salicylate	2	parts;
	Zinc oxide, Vaseline, each	20	"

M.

THE
NEW YORK MEDICAL JOURNAL.
A Weekly Review of Medicine.
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Edited by Frank P. Foster, M.D.

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INTERSTATE RECIPROCITY IN LICENSING.

On several occasions we have commended the efforts of the Wayne County (Michigan) Medical Society to bring about an agreement among all the States, or among States grouped on the basis of practically identical requirements for the license to practise, whereby reciprocity may be shown by each State's granting its license to the holder of another State's license. The lines on which the States could be divided into groups for this purpose are set forth by the secretary of the society's committee having the project in charge, Dr. Amberg, of Detroit, in a letter published in the December number of the *Medical Examiner*. As we understand him, Dr. Amberg would divide the States into six groups, as follows: 1. Those which require a high preliminary and professional education, and confer the license only after an examination of graduates. 2. Those having the same requirements except in regard to the preliminary education. 3. Those whose standards of preliminary and professional education are lower, but in which the license is issued only after an examination of graduates. 4. Those with requirements the same as those of the third group except in the matter of the preliminary education. 5. Those with the same requirements as in the first and second groups, but conferring the license without an examination. 6. Those with the same requirements as in the third and fourth groups, but not requiring an examination.

We are not giving Dr. Amberg's very words, and it may be that we have failed to catch his precise meaning; at all events, we have indicated his plan, we think, with sufficient precision for purposes of illustration. Dr. Amberg seems to think that this division of the States into groups would prove to be only temporary. The people, he suggests, would soon come to understand that there were six qualities of licentiates, and would insist that the best were "just good enough for them." Elsewhere in his letter he says: "A patient in Arkansas values his life just as highly as a patient in New York." The drift of all this, we take it, is that, while the citizen of a State having low requirements desires his physician to be a man of the highest attainments, there is no way of compelling licentiates of a high grade to practise in his State; therefore those who wish to practise there must be able to meet requirements equal to the highest in force anywhere. In consequence of this feeling becoming general in the community, the State would raise its standard to an equality with the highest, and this would happen in every State; then there would be no occasion for keeping the States divided into groups, for they would all be on an equality. We may well entertain the hope that eventually something of this sort will come to pass, but, it may be asked, what is to induce a young man to spend many years and a great deal of money in obtaining such a general and medical training as will enable him to pass the New York State examination, for instance, if he is to spend his life in a community unable to give him either the pecuniary or the social advantages which his training warrants him in expecting? A few years ago such a question would have seemed unanswerable; now it is in a fair way to become irrelevant. There is hardly any part of our country, and before long there will be none, in which a man of education and refinement can not find an agreeable place of abode within a radius of a few miles, and from that dwelling place, with the help of the telephone and the power-carriage, he will very soon be able to attend to the needs of those outlying districts in no one of which could he be contented to pass his life. The world moves, and we do not despair of a speedy unification of the license requirements; when that comes there will be reciprocity.

MEAT INSPECTION IN TOWN AND COUNTRY.

We presume it is not seriously questioned that much unwholesome meat finds its way to the markets, is used for food, and gives rise to disease. If that is granted, we can not see on what grounds anybody who has the general welfare at heart can hesitate to do everything within his power to secure the establishment of such a system of inspection as would do away with the evil. The maintenance of the inspection service would, of course, be something of an expense to the public, and in particular instances pecuniary loss would fall on individuals, but the public would be the gainer in the long run, and the individual loser would be either properly punished for attempting to palm off bad meat on the community or worsted in a commercial transaction in a way familiar to everybody who is in business of any kind. Animals intended for the market should be inspected, both before and after their slaughter, by a competent veterinarian, and he should be paid liberally for his services.

It will not be sufficient to maintain an inspection service in the great centres of slaughtering and packing. This was clearly shown in a paper read before the Pennsylvania State Veterinary Medical Association in September by Dr. John J. Repp, the veterinarian of the State Experiment Station in Ames, Iowa, and published in the November number of the *Journal of Comparative Medicine and Veterinary Archives.* Dr. Repp argues that in many rural communities the local butchers can not afford to deal in meat coming from the large cities, but have to do their own slaughtering. It will not do to assume that they are dishonest in all instances of their offering diseased meat for sale; in many cases there is nothing about the meat calculated to arrest their untutored attention. The same is to be said of the farmer who sells the diseased animal to the butcher; naturally, he parts most readily with an animal that has failed to fatten to his satisfaction, but it does not follow that he has any suspicion that the failure to put on flesh is due to disease. It is not fraud alone that is to be guarded against, but ignorance as well. Dr. Repp points out that the establishment of a system of meat inspection in small towns might meet a very great want, that it would not be a heavy burden upon the taxpayers, and that it would probably hasten the same undertaking in the large cities.

THE TREATMENT OF GAS POISONING.

If there is any morbid condition, apart from sheer loss of blood, in which transfusion would seem to be the ideal remedy, it is poisoning with illuminating gas, but transfusion seems to have had its day, having been supplanted by saline infusion. The employment of transfusion in gas poisoning is nothing new, but a recent investigation of the subject by Dr. Percival Walter Darrah (*Proceedings of the Pathological Society of Philadelphia,* December, 1899) appears to illustrate the proposition that facts are not always to be taken in their crudity, but need to be tempered, so to speak. Dr. Darrah subjected a number of animals to gas poisoning, and endeavored to revive them by various procedures. He observed little if any good result from the use of strychnine, alcohol, nitroglycerin, digitalis, oxygen by inhalation, electricity, artificial respiration, hydrogen peroxide, or saline infusions. On the other hand, he found that transfusion very speedily overcame the poisoning.

Dr. Darrah adopts the theory that gas poisoning proves fatal in consequence of the formation of a compound of carbon monoxide and hæmoglobin so stable that the hæmoglobin is no longer able to take up oxygen. In the discussion, however, Dr. Hare stated that, in spite of this theory, the administration of oxygen to dogs poisoned with coal gas had produced extraordinary results in some experiments made by himself and Dr. Martin. The animals to which it had been administered had recovered. He said also that, so far as he knew, transfusion was futile, and saline infusion was the better procedure. The merits and the disadvantages of transfusion have been very thoroughly sifted, and it is our impression that the verdict is against the measure. Nevertheless, it would be interesting to have an explanation of its good results in Dr. Darrah's hands.

THE METROPOLITAN HOSPITAL AFFAIR.

Undue severity, we think, has been shown in the summary dismissal of the whole house staff of the Metropolitan Hospital, a homœopathic institution on Blackwell's Island. It seems that their offense was not so rank as it was first reported to have been. It is now asserted that there was no desecration of the dead, and that the alleged corpse was an effigy of an officer of the hospital. Their pranks were silly, no doubt, but hardly so offensive as to call for extreme punishment.

A NOTABLE DISCUSSION ON APPENDICULAR INFLAMMATION.

The large number of persons present at the last meeting of the Philadelphia County Medical Society were treated to an excellent discussion, participated in by Dr. Deaver, Dr. Price, and Dr. Hearn. It was called forth by Dr. Hearn's paper on The Mortality of Appendicitis, in which he showed a mortality of about eight per cent. in a series of a hundred and fourteen unselected cases of operation in the Jefferson Hospital. In the discussion of the paper, Dr. Mordecai Price reported about the same relative mortality in his own and his brother's (Dr. Joseph Price's) practice, and stated his belief that with perfection of technics, especially as concerned the most perfect flushing of the abdomen with boiled water, the present generation of surgeons ought to see the death-rate brought down to two, and perhaps even to one, per cent. He could not understand why Dr. Deaver's fatalities at the German Hospital had reached to nearly twenty per cent. Dr. Deaver explained that this percentage applied to acute cases in which all manner of peritoneal as well as general complications were present. In chronic cases (free from ordinarily fatal complications) he had done a hundred and fifty-six consecutive operations without a death. Dr. Deaver argued against opening the abdomen through the great flat muscles of the belly, preferring, on anatomical grounds and as a safeguard against ventral hernia, to make the incision at the edge of the rectus muscle. He was not overfond of irrigation, although it was plain to be seen that he always did a most thorough operation and provided the utmost drainage, in which method he was quite at one with both Dr. Price and Dr. Hearn. Both of these gentlemen, however, seemed to believe more in flushing out the abdomen after the operation. In reaffirming his faith in an incision placed about an inch from and parallel with the anterior crest of the ilium, Dr. Hearn contended that when the head of the cæcum fell against the closed wound there was practically no chance for the small intestine to find the weakened spot in the abdominal wall. There was perfect agreement as to the advisability of operating at the earliest possible moment. The whole discussion was one of the most animated heard in the society for months.

THE *PROVIDENCE MEDICAL JOURNAL.*

This new monthly journal, a large octavo of thirty-six pages of reading matter, is edited by Dr. George D. Hersey under the auspices of the Providence Medical Association. The first number is dated January, 1900. It looks well and contains much excellent matter.

THE MOTOR AREA IN THE CEREBRAL CORTEX.

No little interest attaches to a paper presented by Dr. W. G. Spiller at a recent meeting of the Philadelphia Neurological Society, in which, after a post-mortem study of the degenerations in an uncomplicated case of amyotrophic lateral sclerosis, he offered a new map of the commonly accepted "geography" of the motor region in the cerebral cortex. So far, there have been reported in literature but ten cases in which degeneration methods have been employed to trace out the motor paths and their expansion in the cerebral cortex. Dr. Spiller finds the ascending parietal convolution partially motor, as well as sensory, in its functions. Indeed, at almost every point his results correspond very closely with the scheme recently shown by von Monakow, based on the findings of Starr, Keen, Horsley, von Monakow himself, and many others.

THE WATER SUPPLY OF PHILADELPHIA.

In the light of Philadelphia's typhoid statistics of last winter and spring, the tardiness of the councils and the bureaus of water and engineering in using the $12,000,000 voted by the people for the improvement of the water supply seems little short of criminal. It might not be unprofitable for the city officials to read and ponder well the discussion at the last meeting of the American Society of Civil Engineers following Mr. Allen Hazen's report of the results obtained from the new filtration plant recently established at Albany. They might also profitably turn their attention to Dr. E. B. Godfrey's recent paper before the Camden Medical Society. Camden is across the river from Philadelphia, and has, until now, taken its water from the Delaware. As some authorities have advocated the use of Delaware instead of Schuylkill water, it is of no little interest to note Dr. Godfrey's report of a reduction of sixty-two per cent. in the typhoid cases of Camden since artesian has been substituted for Delaware water. Of course, it can hardly be expected to find an artesian supply equal to the daily demands of a million and a half of people, but the lesson pointed is that filtration, artificial or natural, is the only method of dealing with a polluted water supply.

LACTATION BY A VIRGIN.

Now and then we come across tales of men having performed the function of lactation, and everybody regards them as wonderful if true. But little less astonishing is an account (*Médecine moderne*, November 15, 1899; *Lyon médical*, December 3, 1899) of the experience of a young woman who had never had sexual intercourse. She undertook to care for a six-months-old infant during the daytime. It refused to take milk from a glass, so, to soothe it, she gave it the breast. Getting nothing to repay its efforts, the child became angry. The attempt was repeated several times during the day, and at night the child was nursed by its mother. The young woman persisted in her attempts, and she felt a pleasurable sensation while the child was sucking. After a time she found that her breasts had grown larger, and at the same time she realized that the child was keeping his hold of the nipple longer and longer and was getting milk. Eventually her milk became so abundant as to plague her; the breasts were so distended at night that her sleep was interfered with, and she longed for morning to come, that the child might relieve her. When by chance it was kept away from her for a day, she suffered severely. She seems to have known nothing of the breast pump.

A NEW POINT IN THE TREATMENT OF ASPHYXIA NEONATORUM.

We have all heard of hammering the life out of a person, and those who are inclined to take a humorous view of things may see something paradoxical in the use of a hammer to make an asphyxiated neonatus breathe. But a hammer can be put to far nobler uses than that of pounding. Dr. Bergeret-Jeannet (*Bulletin médical*, 1899, No. 63; *Deutsche Medizinal-Zeitung*, December 18, 1899) informs us that its employment is singularly efficacious in what he calls the apoplectic form of asphyxia neonatorum. An ordinary hammer is plunged into pretty hot water. When it has become as hot as can be borne by the hand, its face is applied in rapid succession to the epigastrium and to two points on the breast, above and below the nipple (of each breast, we presume). This round of touches is to be repeated from two to ten times, and on the second or third round the first respiratory movement takes place, then the breathing gradually becomes regular. The author has used this procedure in more than thirty cases, and always with success.

MOSQUITOES AND THE FUMES OF BOILING CASTOR OIL.

It has often been stated that the presence of a growing castor-oil plant in a bedroom would drive mosquitoes away. We can not vouch for the truth of the statement, but at least we know that the plant is inoffensive. A refinement (?) not long ago entailed discomfiture upon a French gentleman who boiled a little castor oil in a spoon before going to bed. According to the account given in *Nouveaux remèdes* (*Progrès médical*, December 16, 1899), the odor was so abominable that he opened all his windows, preferring the mosquitoes to the nauseous fumes.

COEDUCATION IN SOCIAL SCIENCE.

So far as the University of Berlin is concerned, the men in attendance on the lectures of Professor Behrendt seem determined that women shall not be present with them at lectures on certain subjects. The *Lancet* for December 23, 1899, prints a letter from its Berlin correspondent in which an account is given of their having raised a disturbance when the professor undertook to lecture on prostitution from the ethical, social, and medical points of view, with a woman present, and of their having finally succeeded in forcing him to withdraw his authorization to the woman. He at the same time declared his intention of lecturing on the subject to a class made up of women only, and then the men applauded. We fancy that the women, too, were pleased.

THE PATIENT'S RISK IN COUNTER TREATMENT.

There is considerable satisfaction in learning that counter prescribing deprives him who has recourse to it of a privilege that seems to be much cherished by a large class of niggardly people, just the people that are prone to resort to it—that, namely, of suing for malpractice with any prospect of success. The *Journal of the American Medical Association* for December 23, 1899, records a recent decision by a justice of the New York supreme court to the effect that apothecaries have no right to practise medicine or surgery, and those who seek their advice do so at their own risk.

FIXITY AND INEQUALITY OF THE PUPILS IN GENERAL PARESIS.

Intermittent fixity of the pupils has been observed in tabes dorsalis. Now Dr. Tanzi, of Florence (*Rivista di patologia nervosa e mentale*, September; *Gazette hebdomadaire de médecine et de chirurgie*, November 5, 1899), reports a case of its occurrence during the psychical paroxysms of general paresis. The pupils at such times were of unequal size, the right one being always the smaller. During the patient's intervals of mental composure the two pupils were of equal size and reacted normally to light.

TRICHOTILLOMANIA.

Among the abnormities sometimes observed in general paretics is intense itching of all the hairy parts, accompanied by the fixed determination to pluck out all the hairs, so that artificial baldness results. To this condition Dr. Hallopeau has given the name of trichotillomania, presumably from θρίξ, a hair, τίλλειν, to pluck out, and μανία, mania. Dr. Féré (*Nouvelle iconographie de la Salpêtrière*, July–August; *Gazette hebdomadaire de médecine et de chirurgie*, October 29, 1899) relates the case of a man who had plucked out almost all the hair of his pubes and genitals.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported for the week ending January 13, 1900:

DISEASES.	Cases.	Deaths.
Typhoid fever	47	15
Scarlet Fever	226	6
Cerebro-spinal meningitis	0	2
Measles	757	25
Diphtheria	276	41
Croup	15	12
Tuberculosis	125	145
Chicken-pox	37	0
Small-pox	1	0

Marine-Hospital Service Health Reports.—The following cases of small-pox, yellow fever, cholera, and plague were reported to the surgeon-general during the week ending January 12, 1900:

Small-pox—United States.

Brunswick, Ga	Dec. 28–Jan. 4	6 cases.	
Cairo, Ill	Dec. 30–Jan. 6	17 "	1 death.
Evansville, Ind	Dec. 22–Jan. 6	8 "	
New Orleans, La	Dec. 28–Jan. 6	19 "	1 "
Boston, Mass	Sept 3–Dec. 29	37 "	4 deaths.
Omaha, Neb	Dec. 28–Jan. 6	3 "	
Charlotte, N. C	Dec. 1-31	2 "	
Cincinnati, Ohio	Dec. 28–Jan. 6	3 "	
Hamilton, Ohio	Dec. 28–Jan. 6	1 case.	
Youngstown, Ohio	Dec. 28–Jan. 6	1 "	
Shawnee, Oklahoma	Dec. 27	12 cases.	
Oklahoma City, Oklahoma	Dec. 27	14 "	
Yukon, Oklahoma	Dec. 27	4 "	
Pittsburgh, Pa	Dec. 28–Jan. 6	1 case.	
Salt Lake City, Utah	Dec. 22–Jan. 6	10 cases.	
Portsmouth, Va	Dec. 22–Jan. 6	4 "	4 "

Small-pox—Foreign.

Budapest, Hungary	Dec. 17–24	1 case.	
Antwerp, Belgium	Dec. 8-16	4 cases,	4 deaths.
Prague, Austria	Dec 8–23	42 "	
Rio de Janeiro, Brazil	Nov. 20–Dec. 1	133 "	94 "
Cairo, Egypt	Nov. 18–Dec. 2		2 "
London, England	Dec. 8–16		1 death.
Athens, Greece	Dec. 8–16	5 "	1 "
Bombay, India	Nov. 26–Dec. 5		25 deaths.
Chihuahua, Mexico	Dec. 23-30		13 "
Vera Cruz, Mexico	Dec. 21-28		1 death.
Moscow, Russia	Dec. 2–16	9 "	1 "
Odessa, Russia	Dec. 16–23	6 "	2 deaths.
St. Petersburg, Russia	Dec. 2–16	31 "	5 "
Warsaw, Russia	Nov. 30-Dec. 6		2 "
Corunna, Spain	Dec. 8–23	3 "	1 death.
Madrid, Spain	Dec. 8-16		3 deaths.
Straits Settlements, Singapore	Nov. 4–18		4 "
Constantinople, Turkey	Dec 18–25		1 death.
Smyrna, Turkey	Dec. 10–17	2 "	

Yellow Fever—Foreign.

Rio de Janeiro, Brazil	Nov. 17–Dec. 1		10 deaths.
Havana, Cuba	Dec. 22–30	18 cases,	3 "

Cholera.

Rio de Janeiro, Brazil	Nov. 17–Dec. 1		10 deaths.
Havana, Cuba	Dec. 22–30	18 cases,	3 "

Plague—United States.

Honolulu, Hawaii	Dec. 25	3 cases,	2 deaths.

Plague—Foreign.

Santos, Brazil	Oct. 15–Dec. 9	37 cases,	11 deaths.
Hongkong, China	Nov. 18–25	12 "	12 "
Kurrachee, India	Nov. 28–Dec. 12		305 "
Tamsui, Formosa, Japan	Oct. 17 Nov. 28	36 "	6 "
Kobe, Japan	Dec. 7		1 death.
Osaka and Hiogo, Japan	Nov. 25–Dec. 2	3 "	2 deaths.
Tamatave, Madagascar	Nov. 11–Dec. 3	10 "	7 "

Vaccination in Puerto Rico.—On December 14, 1899, by command of Brigadier-General Davis, Adjutant-General Hall issued the following circular:

"The Superior Board of Health of Puerto Rico has submitted the following rules governing vaccination, which are approved and will be obeyed to enable the requirements of paragraphs 20, 21, and 22, of General Orders, No. 170, current series, from these headquarters, to be carried out:

"1. A certificate of vaccination will be given without charge by the municipal physician to all persons successfully vaccinated by him or his assistants.

"2. Vaccinators will report monthly to the municipal judge and to the secretary of the Superior Board of Health, on blanks supplied by that board, the names of all persons successfully vaccinated.

"3. It shall be the duty of each alcalde to appoint one or more public vaccinators and to announce to all the people of his municipality by handbills, and by advertisement in the papers, the places and dates where the vaccinations will be performed.

"4. The Superior Board of Health will furnish virus free to all municipal physicians, who are required to vaccinate, free of expense, all persons who apply to them at the appointed places, on the dates set by that board. The board will also furnish blank certificates and all other necessary blanks.

"5. Any persons guilty of the violation of any of the provisions of this circular shall upon conviction thereof be punished by a fine of not less than ten dollars nor more than two hundred dollars, United States currency, or imprisonment for not less than ten nor more than ninety days, or by both such fine and imprisonment, at the discretion of the court.

"6. The district courts instituted by General Orders, No. 114, current series, from these headquarters, shall have jurisdiction in cases arising under this order, subject to the provisions of General Orders, No. 88, current series, from these headquarters."

The St. Louis Medical Society of Missouri.—A special meeting was called for Friday afternoon, January 12th, to take action on the death of Dr. Joseph C. Mulhall, which took place the day before. Dr. Mulhall was a laryngologist of wide reputation, an excellent writer, and a genial gentleman.

The following papers were announced to be read at the regular meeting, on Saturday evening, January 13th: Report of Results of Seventeen Tests made for Rendering the Hands Aseptic before Operations, by Dr. N. B. Carson; and Sarcoma of the Conjunctiva, by Dr. James Moores Ball.

The Medico-legal Society held its annual dinner and installation of officers on Wednesday evening, January 17th. The programme included an address by the retiring president, Albert Bach, Esq., and addresses by each of the newly elected officers as follows: President, Clark Bell, Esq.; vice-presidents, Dr. George L. Porter, of Bridgeport, Connecticut, and Dr. T. D. Crothers, of Hartford, Connecticut; secretary, H. Gerald Chapin, Esq.; librarian, Howard Ellis, Esq.; assistant librarian, Thomas G. Frost, Esq.; trustee, Dr. P. M. Wise; counsellor, Henry Wollman, Esq.

The Buffalo Academy of Medicine.—At the last meeting of the Section in Pathology, on Tuesday evening, January 16th, the special order was an address on Lawson Tait, by Dr. Stephen Y. Howell, to be followed by remarks by Dr. William Warren Potter.

Change of Address.—Dr. Joseph B. Kenney, from St. Louis to DeGraff Building, Colorado Springs, Colorado.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from January 7 to January 13, 1900:*

CLEARY, PETER J. A., Lieutenant-Colonel and Deputy Surgeon-General, United States Army, will proceed to Vancouver Barracks, Washington, for duty as surgeon and as chief surgeon of the Department of Columbia.

HAMLIN, WILLIAM F., Acting Assistant Surgeon, United States Army, will proceed from Rowell Barracks, Cuba, to New York for orders.

JOHNSON, DAVID J., Acting Assistant Surgeon, United States Army, will proceed to Fort Warren, Massachusetts, for temporary duty, to relieve DEVEREUX, JOHN R., Acting Assistant Surgeon, United States Army, who will proceed to Washington for annulment of his contract.

MCANDREW, PATRICK H., Acting Assistant Surgeon, United States Army, will proceed to Fort Slocum, New York, for duty with recruits to sail on the transport *Sumner* for Manila.

THOMPSON, LOUIS A., Acting Assistant Surgeon, United States Army, will proceed to Seattle, Washington, for duty on the transport *Sumner* during the voyage of that vessel to the Philippine Islands.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Two Weeks ending January 13, 1900:*

DUNBAR, A. W., Passed Assistant Surgeon. Ordered to duty on the *Monongahela* immediately.

HURD, I. N., Pharmacist. Ordered to duty at the Key West Naval Station.

PAYNE, J. H., Assistant Surgeon. Detached from the *Indiana* and ordered to duty at the Naval Hospital, Mare Island, California.

SMITH, R. K., Passed Assistant Surgeon. Detached from the Naval Hospital, Mare Island, California, and ordered to duty on the *Pensacola*.

SPEAR, R., Assistant Surgeon. Ordered to duty in connection with the naval recruiting rendezvous, Philadelphia.

PLUMMER, R. W., Assistant Surgeon. Detached from the *New Orleans* and ordered to the *Petrel* and also to the Cavite Naval Station.

BEEBE, D. G., Assistant Surgeon. Detached from the *Bennington* and ordered to the *Petrel*.

Promotions.

PICKRELL, G. M. Promoted to surgeon from September 19, 1899.

PRICE, A. F. Promoted to medical director from April 9, 1899.

Society Meetings for the Coming Week:

MONDAY, *January 22d:* Medical Society of the County of New York; Lawrence, Massachusetts, Medical Club (private); Cambridge, Massachusetts, Society for Medical Improvement; Baltimore Medical Association.

TUESDAY, *January 23d:* New York Dermatological Society (private); Metropolitan Medical Society, New York (private); Buffalo Academy of Medicine (Section in Obstetrics and Gynæcology); Medical Society of the County of Putnam (quarterly), New York; Richmond, Virginia, Academy of Medicine and Surgery.

WEDNESDAY, *January 24th:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Philadelphia County Medical Society.

THURSDAY, *January 25th:* New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Brooklyn Pathological Society; Brooklyn Society for Neurology; Roxbury, Massachusetts, Society for Medical Improvement (private); Pathological Society of Philadelphia.

FRIDAY, *January 26th:* New York Clinical Society (private); New York Society of German Physicians;

Yorkville Medical Association, New York (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Saturday, *January 27th:* New York Medical and Surgical Society (private—annual).

Births, Marriages, and Deaths.

Married.

Elmer—Burke.—In New Orleans, on Monday, December 25, 1899, Dr. William Elmer, of Trenton, New Jersey, and Miss Emma Burke, of Baton Rouge, Louisiana.

Hazen—Smith.—In Skaneateles, New York, on Thursday, January 11th, Dr. Henry C. Hazen, of New York, and Miss Ethel Mary Smith.

Lawrence—Brown.—In Charleston, South Carolina, on Monday, January 1st, Mr. Charles Edward Lawrence and Miss Susan Edmonds Brown, daughter of Dr. William S. Brown.

Marvel—Howell.—In Philadelphia, on Thursday, January 11th, Dr. Henry V. Marvel and Miss Anne C. Howell.

Owsley—Fowler.—In New York, on Wednesday, January 10th, Dr. Henry Farrar Owsley and Miss Gertrude Isabelle Fowler, daughter of Dr. George B. Fowler.

Died.

Atlee.—In Philadelphia, on Tuesday, January 16th, Dr. Washington L. Atlee, in the fifty-eighth year of his age.

Cleary.—In Port Chester, New York, on Sunday, January 14th, Dr. John C. Cleary, aged thirty-one years.

Douglas.—In Morgan City, Louisiana, on Wednesday, January 10th, Eva T. Carlin, wife of Dr. George H. Douglas, aged thirty-one years.

French.—In Boston, on Thursday, January 11th, Dr. Elizabeth J. French, in the seventy-ninth year of her age.

Hall.—In Grove Hall, Dorchester, Massachusetts, on Tuesday, January 9th, Dr. Milton W. Hall, in the fifty-second year of his age.

Hamilton.—In Shuqualak, Mississippi, on Sunday, January 7th, Dr. Patrick H. Hamilton, in the seventy-ninth year of his age.

Huntington.—In Rome, Italy, on Wednesday, December 20, 1899, Dr. David L. Huntington, surgeon, United States Army (retired), aged sixty-five years.

Kimball.—In Boston, on Tuesday, January 9th, Flora Mason, wife of Dr. J. Edwin Kimball.

Kollock.—In Cheraw, South Carolina, on Sunday, January 14th, Mary Henrietta, widow of the late Dr. Cornelius Kollock.

Lowe.—In New Orleans, on Tuesday, January 9th, Dr. Lee George Lowe, in the thirty-first year of his age.

Mahe.—In Sioux City, Iowa, on Thursday, January 11th, Dr. Gustave Mahe.

Mulhall.—In St. Louis, on Thursday, January 11th, Dr. Joseph C. Mulhall, aged forty-nine years.

Schroder.—In Brooklyn, on Friday, January 12th, Dr. J. Ernest Schroder, in the forty-eighth year of his age.

Siegfried.—In Newport, Rhode Island, on Sunday, January 14th, Dr. Charles A. Siegfried, Medical Inspector, United States Navy.

Letters to the Editor.

CROUP AND DIPHTHERIA.

Savanna, Ill., *January 6, 1900.*

To the Editor of the New York Medical Journal:

Sir: I note remarks by Dr. H. B. Sheffield in your journal of December 30, 1899, on the Clinical Diagnosis of Diphtheria.

The article is opportune with me, but not settling the question of ætiology and pathology. Do bacteriologists consider "membranous croup" identical with diphtheria? If so, why the vast misunderstanding on this subject by clinicians? If not, why does the health office of New York city report them separately?

It seems that the literature on this particular question is very faulty.

As the pathology must of necessity direct the treatment, does the health department of New York city recommend the use of antitoxine in both diseases alike?

R. C. Burton, M. D.

Pith of Current Literature.

The Treatment of Bubonic Plague with Large Doses of Carbolic Acid.—Dr. J. Mitford Atkinson (*Lancet*, December 9, 1899) records a case of bubonic plague treated successfully in the Government Civil Hospital, Hongkong, by large doses of carbolic acid. He says that it is usually thought that carbolic acid is a very poisonous substance which may prove fatal in doses of even a few grains. This misunderstanding he holds to be in part due to confusing the local harmful effects of the drug with its constitutional action. When taken in a concentrated form carbolic acid acts as a strong caustic, producing severe local effects, and constitutional symptoms follow after absorption has occurred. The local symptoms, however, do not appear if the drug is freely diluted before it is given. When this is done it is possible to study the constitutional symptoms much more carefully, and it is then found that the toxic dose of carbolic acid is very much greater than was formerly thought to be the case. With regard, he says, to the employment of this drug for bubonic plague it is evident that one case, though very interesting, is not sufficient to found an opinion on, but the result in this case would justify its careful and cautious employment in others.

The patient, aged thirty years, a sanitary inspector, was admitted to the Government Civil Hospital, Hongkong, on June 9, 1899, with the following history: He had been very hard worked and had been exposed to the trying climate of the colony at the worst season of the year. On June 6th, in the course of his duties, while conveying a plague patient to the ambulance, he slipped and abraded the skin over his left elbow. The following day he felt pain in the left groin. He complained of fever on the evening of June 8th and was seen by the medical officer of health on the morning of the 9th and ordered to hospital.

On admission at 7.30 P. M. that night the patient's temperature was 104.3° F., his pulse 108, his tongue furred, and he was slightly delirious; there was distinct tenderness in the glands of the left femoral region, which were obviously enlarged. He was ordered two grains of calomel, as the bowels had not been opened, and fifteen grains of migranin were given to relieve the headache. As he complained of want of sleep, at 11 P. M. one fifth of a grain of morphine was given hypodermically. On June 10th, in the morning, plague bacilli were detected in blood taken from the enlarged glands in the groin. Three grains of carbolic acid were ordered in the form of a pill, to be given every four hours. At 12 midday the temperature was 105.6°; four grains of phenacetine with one grain of citrate of caffeine were now given. At 4 P. M. the skin was moist and the temperature had fallen to 105°. It was then felt that if carbolic acid was to do any good it must be pressed, so at 4 P. M. one ounce of the following mixture was ordered to be taken every two hours: Carbolic acid (Calvert's pure), twelve grains; syrup of ginger, one drachm; chloroform water to six ounces. Four doses were given that evening; the man was still complaining of great headache. On June 11th the mixture was resumed at 7 A. M., and between that time and 8.30 P. M. six doses were given; there was now a distinct left femoral bubo. In the afternoon the headache was much better, the urine was being carefully watched and was not at all dark-colored, and there was no vomiting. At the evening visit the pulse was 90 and much stronger, and the temperature was down to 102.6°. On June 12th at the morning visit the man's pulse was 80 and the temperature had fallen to 101°; he had had two doses of the mixture in the night. The bubo was much larger and there was considerable brawny swelling all around it. The medicine was continued every two hours while he was awake; two doses were given in the morning and two others in the afternoon. The patient was still slightly delirious. On June 13th at the morning visit the patient complained for the first time of slight pain on passing urine; the dose of the mixture was now reduced one half and given every four hours. The temperature had fallen to 99.8° and the pulse was 72. The patient was much more cheerful. On June 14th the bubo was less swollen. As the patient's temperature was practically normal on June 15th the dose of the mixture was reduced to two grains of carbolic acid thrice daily; this dose was continued to June 26th, when, strangury being again complained of and the urine dark-colored, the carbolic acid was now discontinued. All this time the bubo had been maturing, and on June 27th it was incised. As is usual with these plague buboes, convalescence was considerably delayed, and it was not until July 18th that the patient left the hospital. The diet during the acute stage was liquid and stimulating, six ounces of brandy being given in the twenty-four hours. This was reduced on June 16th to two ounces daily.

Dr. Atkinson was led to try this drug by reading an article in the *Lancet* for April 8, 1899, p. 958, by Mr. A. Wiglesworth on the Treatment of Influenza by Large Doses of Carbolic Acid. During the three days June 10th to 12th over two hundred grains of carbolic acid were given internally, with the result of lowering the temperature, allaying the vomiting, and relieving the severe mental depression. Undoubtedly this drug has marked antithermic and antitoxic properties.

Pelvic Trouble and Bicycling.—Mr. Skene Keith (*Lancet*, December 9, 1899) says that an experience of only three cases where bicycling has necessitated treatment of the pelvic organs is so small that if other gynæcologists have not met with a far greater proportion it may safely be affirmed that the amusement is a safe one for all fairly healthy women in so far as that region of the body is concerned. The author refers to his three cases, reporting two of them, in which the predominant symptom was melancholia, apparently due to derangement of the pelvic circulation. In one case there was retroversion of the uterus and in the other anteversion was the most prominent sign.

The Treatment of Gonorrhœal Epididymitis by Salicylated Preparations. — Bettmann (*Münchener medicinische Wochenschrift*, 1899, No. 38, p. 1233; *Presse médicale*, October 4, 1899) has used external applications of salicylate of methyl in twelve subjects of gonorrhœal epididymitis. On a compress of cotton wool are poured from ninety to a hundred and twenty minims of a mixture containing one part of salicylate of methyl to two parts of olive oil; the compress is then applied against the scrotum so as to envelop it and is covered with gutta-percha tissue; over this dressing, a suspensory well lined with cotton, so as to exercise compression on the testicle. By these means rapid and notable diminution of pain is produced. At the end of three or four days of this treatment the pains entirely disappear, and the invalid may leave his bed, wearing a suspensory lined with cotton. The salicylate, however, has no influence on the fever, the duration of the disease, or the resorption of exudate.

Surgical Intervention in Hæmatemesis and Melæna from Gastric and Duodenal Ulcer.—Dr. G. Armstrong (*Montreal Medical Journal*, December, 1899) records a successful case of gastrotomy in a lady thirty-five years of age for copious hæmorrhages from the stomach consequent upon ulcer. The patient's condition being critical, Dr. Armstrong exposed the stomach as soon as possible through an incision in the median line, drew it well forward, and, after carefully packing around to protect the peritoneal cavity, opened through the anterior wall. After washing out some blood clots a careful search was made for the bleeding point. No deep excavated ulcer was found, but blood was seen oozing from three different places, which looked like linear fissures in two instances, and in the third like a stellate fissure. Around the fissures, over an area of about one centimetre, there was apparent a superficial loss of surface epithelium. From the stellate fissure blood seemed to come from three small vessels. The flow of blood was completely arrested by the application of the Paquelin cautery, and the stomach and abdominal incisions were closed without drainage. The subsequent course of the case was one of uninterrupted convalescence. The nausea disappeared; no vomiting occurred after the ether or subsequently. Stomach feeding was begun on the following day, and from that time on the patient took nourishment by the mouth, although rectal feeding was continued for four or five days. The woman is now quite well, not anæmic, has perfect digestion and assimilation, and is living an active life.

He further describes a similar case in which an open artery was discovered on operation. In this case the patient died from acute anæmia on the following day. Dr. Armstrong remarks:

"The following evening, when I sat down quietly for that period of retrospection and introspection that, I fancy, is not foreign to the experience of any surgeon, I came to two conclusions: First, that this woman's life would in all probability have been saved if she had been operated upon after the second hæmorrhage; and, secondly, that the tone of advice given to-day in the medical and surgical literature was responsible for the delay. I felt that had I another similar case, early operation would save it. But, as Carlyle says, 'It is easy to be wise behindhand.'"

Dr. Armstrong further says that, clinically, cases of hæmatemesis are divisible into two distinct classes—those in which occur frequently repeated small hæmorrhages, and those in which the loss of blood is in larger quantities—and it would seem that each class has a distinct pathological lesion, and this should be borne in mind in the consideration of the treatment of hæmatemesis, medically or surgically; and, however efficient hypodermics of morphine and ergotin may be in small hæmorrhages coming from the capillaries and small venules of the surface of the mucosa, he trusts it may not be considered rank heresy to question their therapeutic value in the presence of a notable lesion in the wall of a considerable artery. It is also to be noted that the bleeding point in the cases which he has reported was in every instance accessible, situated in a part of the stomach wall that could be readily come at, or, if duodenal, in every instance it was outside the pyloric ring.

If, then, we can exclude aneurysm, which should generally be possible, and leucæmia, which should be possible with the aid of the microscope, and cirrhosis or other cause of portal obstruction, he holds that the surgeon's duty is to intervene in suitable cases; and he offers as a definition of suitable cases: those, first, of frequently repeated small hæmorrhages, which persist in spite of medical and dietetic treatment, and which threaten to destroy the life of the patient; and, secondly, all cases of a large hæmorrhage which, in spite of medical and dietetic treatment, recurs. In these cases he advocates operation after the second hæmorrhage.

For hæmorrhage occurring in cirrhosis and portal obstruction, he does not think that the surgeon can accomplish any good. In these cases the hæmorrhage is generally from a varicose œsophageal vein, a part difficult of access, and secondary to a pathological lesion but little amenable to any form of treatment.

In the case of gastric and duodenal ulcer, however, the conditions are totally different. The lesion is primary and local, and in addition to the securing of the bleeding point, a more smooth and rapid convalescence is secured, the likelihood of perforation removed, and if found advisable the performance of a gastro-enterostomy or pyloroplasty secures to the stomach that rest which so favors the healing of the ulcer and insures against the subsequent occurrence of narrowing and obstruction at the pylorus.

Dr. Armstrong subsequently reports a second successful case in the same journal.

Peroxide of Hydrogen in Hirsuties.—Dr. L. Duncan Bulkley (*Journal of the American Medical Association*, December 23, 1899) says that the *bleaching* properties of peroxide have long been used for changing the color of the hair, and advantage may be taken of this in connection with the growth of superfluous hair on the face of women. In a very considerable number of cases he has employed it, where the hair was too fine to admit of its removal by electrolysis, and yet where it was very perceptible and troublesome. Especially on the upper lip of girls, this condition is often the source of much distress. Here the slight downy mustache will be composed of innumerable fine hairs, perhaps with a few stronger ones at the ends, and it is quite impracticable in the early stages to practise electrolysis. Here the free and repeated use of the peroxide will produce a very material improvement in the appearance in a very short time. By blanching the hairs a mustache which was very striking will hardly be noticeable at a short distance. But another advantage in the use of the peroxide in hirsuties, which, he believes, has not been heretofore mentioned, is a certain retarding influence which it exerts on the growth of the hair. This he has noticed in a number of instances for the past two or three years, much to the delight of several patients. This result is slow, but with a faithful continuance of the remedy the fine growth of hairs certainly diminishes; some of the stronger ones seem to grow and they can be removed by electrolysis. In applying the peroxide to such cases it is often well to begin by diluting it one half with water, and increasing the strength gradually, for when a strong specimen is applied to the healthy skin it will sometimes cause a desquamation, which is unpleasant.

The Early Diagnosis of Incipient Tuberculosis.—Dr. A. Mansfield Holmes (*Denver Medical Times*, December, 1899) says that a study of the blood in tuberculosis is very important. The author has made it a rule to make a blood study of each tuberculous patient examined at the time of the first examination. Periodical blood studies have been made in all cases during the time they remained under his care. A study of several hundred patients, covering a period of four years and including all stages of the disease, is the basis of these deductions. Having kept a record of the blood and also the sputum study in such cases, he has found the former of greater service in revealing the actual condition of the patient than the latter. The blood studies of many incipient cases have revealed the low physical state of the patient when careful examinations of the sputum have failed to reveal bacilli. To remove doubt, in many of these cases the tuberculin test was administered, followed by a reaction. Such a method of study and comparison has impressed the author with the significance of blood phenomena in the study of incipient tuberculosis. These phenomena, however, are of value only when rationally interpreted in connection with a complete study of all other symptoms accompanying tuberculosis. The author summarizes as follows: 1. There are early symptoms which make their appearance in tuberculosis long before the stage of expectoration. 2. There is frequently expectoration for a considerable time before bacilli can be found. 3. The diagnostician who waits for the appearance of bacilli in the sputum loses the most valuable period for rendering service to his patient. 4. When the early symptoms are present and no other cause can be found to account for them, we are justified in suspecting tuberculosis. 5. Before arriving at a definite diagnosis we should consider well, *a*, the previous history; *b*, the general appearance of the patient; *c*, the symptoms present. After carefully weighing all that can be secured from such a study, we should also resort to early and repeated physical examinations of the chest; a bacteriological examination of the sputum, if the disease has advanced to this stage; a microscopic examination of the blood; and if doubt still remains we should resort to the tuberculin test. 6. It should be remembered that an early diagnosis is of supreme importance. If we hope to secure good results we must resort to means of examination which will enable us to detect the disease before it has become fully established. 7. Two other duties of great importance present themselves after making an early diagnosis: first, the choice of treatment; second, the prevention of contagion by adopting rigid sanitary and hygienic regulations. These are important questions and should be considered as subjects for education. Physicians and medical organizations should take the initiative in this educational work. Teachers and parents must cooperate in this important work before the appalling prevalence of tuberculosis can be materially diminished. The fact should be more generally known that if the vital forces of a person become impaired from any cause whatever, the resistance to the tuberculous infection is likewise diminished. Prolonged overwork, disease, or dissipation weakens an organism. The tissues of such persons constitute a fertile soil for the infecting germs. When the germs are brought into contact with weakened tissues they find favorable conditions for propagation. This marks the actual beginning of tuberculosis. And in the second place, after the disease is established, the fact can not be too strongly emphasized that patients can not remain surrounded by unsanitary conditions and regain their health. 8. In order to secure the cooperation of physicians on the one hand, and of the laity on the other, there should be State legislation. First, all persons should be made to realize the importance of an early diagnosis. Second, all persons should be better informed as to the means of communicating the disease. A few sanitary rules should be formulated. For the violation of these rules there should be specific penalties. It should be considered a crime for any one to violate the rules adopted for the prevention of the spread of the disease, and such laws should be rigidly enforced. Unless we are made to understand that it is a crime to endanger our neighbor, little heed will be given to advice and admonition on this subject. But if we are made to understand that such negligence and carelessness as are now prevalent are punishable crimes, it will result in diminishing the spread of tuberculosis; and, furthermore, it will enable us to produce a greater percentage of cures by being able to detect the disease in its incipiency.

Proceedings of Societies.

SOCIETY OF THE ALUMNI OF BELLEVUE HOSPITAL.

Meeting of November 1, 1899.

The President, Dr. Charles E. Quimby, in the Chair.

A Round-up of Opinions on Rheumatism; Nature of the Pathic Process as a Basis for Treatment.—The President discussed this part of the subject in the following manner, with a view to indicating what he hoped to bring out by discussions of this kind. He said that his own position on this question was that rheumatism was dependent upon some form of toxic element, probably the result of some change in the muscular tissue—a chemical rather than a distinctly vital organic poison. He did not feel entirely sure that it came from muscular tissue alone, but he had a distinct impression that muscular changes were at the base of it. Some ten years ago he had been called to attend a lady of about thirty who had suffered from rheumatism of the intermittent and moderate form for a long time. She came from a rheumatic family, and had been attended by the speaker previously for rheumatism. She had mitral regurgitation and suffered from frequent attacks of angina. She had been through all the routine treatment, and he had therefore made strenuous efforts to accomplish something new. Careful questioning had elicited the fact that she was disturbed by indigestion of meats. This had suggested that the toxic elements were derived from flesh, and therefore might be produced by changes in muscular tissue within the body at a time when the circulatory changes were such that tissue metabolism was disturbed. He had accordingly excluded all meat from her diet, and had given her Warburg's tincture internally. The rheumatism and the angina had ceased. This person had taken absolutely no meat for over two years. She had subsequently married, had had several children, and had been free from rheumatism since that time. After a short time she had moved to Montana, and had resided there ever since. In other cases a similar result had been attained by excluding meat from the diet. These few remarks were intended to express his own mental attitude regarding rheumatic conditions and their treatment.

The Relation between Acute and Chronic Rheumatism as Indicating Dependence upon the Same or Different Pathic Conditions.—Dr. Alexander Lambert said that to arrive at any clear understanding concerning the relations between acute and chronic rheumatism we must have definite ideas as to each process. It had always seemed to him that the name of rheumatism covered a multitude of different conditions and that no two schools of thought nor many writers were agreed on the classification. For instance, we had acute rheumatism or rheumatic fever, gonorrhœal rheumatism, scarlatinal rheumatism, chronic rheumatism, rheumatic gout, and rheumatoid arthritis. Of these, we must discard absolutely gonorrhœal and scarlatinal rheumatism, and we should never apply the term rheumatism to them, as their joint lesions were due to a true specific septic arthritis—the first, namely, to the gonococcus, and the second to some of the pyogenic cocci occurring as mixed infections during the course of scarlet fever. Rheumatic gout, in Dr. Lambert's opinion, must also be ruled out. We could have either gout or rheumatism; true it was that we might have both in the same joint, but rheumatism did not cause a deposit of sodium urate as gout did, hence all inflammations with these deposits should not be called rheumatism or rheumatic. We could have malarial disease and typhoid separately or simultaneously in the same patient, but they were distinct diseases, and, in the speaker's opinion, gout and rheumatism were equally distinct. Clinically, we could not always at first sight distinguish between typhoid and malarial disease, or gout and rheumatism, but their causes were as distinct in the one group as in the other. Rheumatoid arthritis, as we should see later, must also in all probability be separated from true rheumatism. All the myalgias now called muscular rheumatism belonged, he held, to that category. Dr. Lambert did not believe some to be rheumatic, some gouty, and some due to still other causes, but he had not been able in his own mind to classify them satisfactorily, and would therefore confine himself to the acute and chronic articular disease. The clinical picture of acute rheumatism had more and more forcibly impressed itself on his mind as the picture of an acute general infectious disease, having its local manifestations in the joints and their adjacent tissues and sometimes in the serous membranes. Its occurrence in epidemics, its regular curves of recurrence, its practical restriction to the temperate zones, its self-limitation, its manner of attacking the cardiac tissues, the leucocytosis produced, and, last but not least, its definite cure with a specific remedy, all pointed distinctly to its infectious character. Dr. Lambert could think of but three specific drugs in medicine—viz., quinine, mercury, and the salicylates. Probably no one doubted our knowledge concerning the cause of malaria, and probably but few doubted the existence of a living contagium as the cause of syphilis, and it seemed to him equally improbable that the specific action of the salicylates should be anything but one against a definite living cause. Basing our argument, therefore, on the cause of acute rheumatism as an infectious process, did the subacute and chronic forms of the disease manifest the same causal nature? All infections varied in their intensity, according, on the one hand, to the virulence of the infective agent, its point of entrance into the body, and its physical amount at the time of infection, and, on the other hand, according to the general and specific resistance of the infected host. The variable clinical pictures produced in all infections by variations in these different factors were too familiar to need any comment. The resistance to any given disease varied within wide limits in different individuals and the same individual at different times. Hence, what would cause an intensely acute inflammation in one individual would cause but a subacute inflammation in another, or would be an acute inflammation in the same individual at one time and subacute at another.

In the subacute forms of rheumatism the liability to cardiac lesions, especially in children, as had been so clearly brought out by Dr. Winters, was as great as in the acute forms, and we often saw the acute inflammations of the joints subside into a subacute form or recur in later attacks as subacute. But the joint lesions were of the same nature and were amenable to the same specific treatment as in the acute forms. The subacute forms had therefore seemed to Dr. Lambert to be of the same specific nature as the acute, differing only in their intensity.

In chronic rheumatism there were new factors to be considered. Acute rheumatism was a disease occurring most frequently between the fifteenth and fiftieth years of life; chronic rheumatism between the fortieth and sixtieth years. In other words, the acute form of the disease occurred in the joints during the years of life when the locomotor apparatus was at its acme of development and nutrition, and when its powers of recuperation and repair were greatest. Chronic rheumatism, on the other hand, occurred when the physiological changes of old age had begun and the powers of recuperation were diminished. Moreover, it occurred among those classes of individuals in which, from bad hygiene and severe continuous strain, senile changes set in much earlier than the years of their existence would lead us to expect. And the joints most often affected were those which had undergone the greatest wear and tear in the hard struggle for existence. The tissues did not afford the same favorable nidus for the infection, were more resistant, perhaps, so far as favoring an infection was concerned, but when the infection had once occurred it could not be cast off, the recuperative power was less, and a continuous low order of inflammation resulted, with, at times, its subacute exacerbations. But its main features were the continuity of the process and the loss of recuperative power. There were grave doubts in his mind whether all the cases of chronic rheumatism which we now classified under that heading were really one and the same lesion. There were some patients who gave a distinct rheumatic history, there were others in whom there was no such history to be obtained, but the subacute exacerbations of the chronic process showed its true nature. In other patients there was no rheumatic history or subacute exacerbation, but the chronic joint lesions persisted, and there were added to these the chronic connective-tissue changes in other parts of the body, such as emphysema, endarteritis, chronic endocarditis, cirrhotic liver, and non-exudative interstitial nephritis. Was not the chronic process in the joint but another expression of the general connective-tissue proliferation going on throughout the whole body? Our specific treatment by salicylates did no good in these cases, while in those with the subacute exacerbations this treatment at times was beneficial. Old age brought with it a gradual shrinking of the tissues, a loss of elasticity and of nutrition. The more marked the endarteritis the more pronounced was the loss of nutrition. That a man was as old as his arteries was one of the truest aphorisms ever uttered. It seemed to him, therefore, that at present we were classifying under chronic rheumatism at least two separate conditions, the one due to true rheumatism, the other to a general senile connective-tissue proliferation. When we could separate the real cause of rheumatism we should be able to prove or disprove Dr. Lambert's belief, and until then he acknowledged that it was but an expression of a theory. We came now to rheumatoid arthritis or arthritis deformans. This disease, in his mind, should be separated from rheumatism. Whether the lesion began with an acute or chronic invasion, it was of a different nature from that of true rheumatism. The type was the same as was seen in neuropathic arthritis, as exemplified in the destructive lesions seen with locomotor ataxia and myelosyringosis. Garrod's theory that it was a disease of the trophic nerves, and perhaps a functional disease of these nerves, was not proved, but it certainly was the most plausible theory, judging from the facts at our disposal.

In reply to the president's request that Dr. Lambert should give his impressions and his opinions concerning the relationship between acute and chronic rheumatism, he would sum up by saying that he was strongly impressed with the belief that acute rheumatism was of an infectious origin; and, looking at it from that standpoint, he believed that we could trace a clear logical chain of evidence linking the acute to the subacute and chronic manifestations of the disease. He was also strongly impressed with the unsatisfactory classification of what was usually called rheumatism, and he had endeavored to outline briefly what he believed should be classed under this heading and what should not.

The Relation between the Nervous Manifestations (or Chorea) and the Rheumatic Process as Indicating the Nature of the Disease.—Dr. Edward D. Fisher said that most physicians started with the notion that chorea and rheumatism were very intimately connected—in fact, Duckworth had said that rheumatism and chorea were virtually the same, the disease at one time manifesting itself as chorea, and at another time as rheumatism. This was a little different from the theory usually advanced that rheumatism was the cause of chorea. In various cases that had come under his observation he had endeavored to determine the existence of rheumatism, and in the great majority of them he had not been able to convince himself that rheumatism had anything to do with the case. The mother would usually admit that the child had had slight pains in the muscles, but a distinct articular rheumatism preceding chorea seemed to him exceedingly rare, although he had seen cases. Again, the cardiac lesion, in his experience, had been rare in chorea. There would be irregular heart action in chorea, but not, as a rule, accompanied with cardiac lesions. Chorea was a disease without definite pathological history, for we did not know what changes existed in this disease. Personally, he believed that most of the changes were in the brain, and yet such an authority as Weir Mitchell had stated that the seat of chorea in many cases was in the spinal cord. The symptoms and manifestations of chorea would rather point to some interference with the motor tract of the brain. Another reason for believing that chorea was not a rheumatic affection was that remedies used in the two diseases were not at all the same. In the majority of cases of chorea the patient was put on a tonic treatment, with iron or cod-liver oil, and arsenic chiefly. He did not believe many cases of rheumatism would respond satisfactorily to such a course of treatment. He was therefore inclined to ascribe chorea to an entirely distinct set of causes from those found in rheumatism. In chorea the physician had to deal with malnutrition, not with an organic disease, but with a condition of malnutrition giving rise to functional disorder. Another point which would rather sustain this view was the fact that chorea was more often found in the very young than in those past the age of fifteen, whereas articular rheumatism was commonly seen somewhat later. He would therefore say that rheumatism had a very slight, if any, connection with chorea, and even in those cases in which there was a definite history of rheumatism he would not ascribe the chorea to the poison of rheumatism, but rather to the effects of malnutrition following the condition known as rheumatism.

(*To be continued.*)

Book Notices.

Encyclopædia Medica. Under the General Editorship of Chalmers Watson, M. B., M. R. C. P. E. Volume I. Abdomen to Bone. New York: Longmans, Green, & Co., 1899. Pp. vi–579.

The expediency of a publication of this character is a matter upon which we are far from being convinced, for the difficulties that beset its production are all but insuperable. Imprimis, the field it seeks to occupy is practically without limit, and its editor is at once confronted with the very serious question as to whether he will aim for utility or for completeness, for, unfortunately, the two are here incompatible. If it is utility that is sought, the very encyclopædic character is lost; and if, on the other hand, the aim is exhaustiveness, the accumulation of medical detritus will scarcely make for utility. Again, the very serious objection must be raised that the rapidity of medical progress is likely to have rendered antique the first volume before the last volume has been reached. When all is said, too, what is the real value of a work like this, however able its character? Surely the library of the average practitioner will already contain all the information upon practical medicine and surgery that one is likely to encounter in a work like this, and as for the rarities, the volume before us contains less of them than the average medical dictionary does, though it does not assume the encyclopædic quality. We do not mean to belittle this work; it is a very excellent production and nothing but praise can be expressed for the quality of its various articles, but in all frankness and for the reasons already given we do not regard it as a medical encyclopædia, and we do not believe that a very useful medical encyclopædia is possible.

A glance at the list of contributors to the first volume of the work shows a very unusual array of writers, and the scholarly character of the production is at once vouched for. Examination of the articles in detail shows them to be all that would be expected, and from Abdomen, Clinical Investigation of, to Bone, there is nothing that one may not read with confidence and with satisfaction. So far as we may judge from the first volume, the work may briefly be described as a system of medicine, surgery, and the several specialties in which the subjects are arranged alphabetically and from which so much has been omitted (to the book's benefit, be it said) as scarcely to entitle it to be described (in the ordinary acceptance of the term) as encyclopædic.

Essentials of Modern Treatment of Disease. For the Use of Practitioners (Alphabetically Arranged for Ready Reference). By K. M. Nadkarni, Fellow of the Incorporated Society of Science, Letters, and Art of London, etc. Madras: N. K. Rao & Co., London: Baillière, Tindall, & Cox, 1899. Part II. Pp. 213 to 462.

The second part of this excellent alphabetical guide to the treatment of disease fully sustains the good impression created by the first part, and it will no doubt prove useful in the field it is intended to occupy.

Handbook of Medical Gymnastics. By Anders Wide, M. D., Lecturer in Medical Gymnastics and Orthopædy in the Royal Carolean Medico-surgical Institute, and Director of the Gymnastic Orthopædic Institute, Stockholm. With a Frontispiece and Ninety-two Illustrations in the Text. New York: Funk & Wagnalls Company, 1899. Pp. viii–373. [Price, $3.]

This work is an admirable presentation of the subject often described as "Swedish gymnastics." The first part of the volume is devoted to a description of the gymnastic movements that renders the subject very comprehensible, and especially because of the very excellent illustrations that are present in such numbers. Massage also is described, but with brevity. The second part of the work treats of the application of these methods to the cure of diseases, and in the chapters that follow is discussed the gymnastic treatment of circulatory, respiratory, digestive, genito-urinary, nervous, muscular, constitutional, osseous, and articular diseases. To one who seeks a very practical description of the subject of Swedish gymnastics the work of Dr. Wide will be of very great assistance.

Die Röntgenstrahlen und ihre Anwendung in der Medicin. Vortrag gehalten den 28. December, 1898. Von Dr. Leopold Freund, Secundärarzt im Wiener allgemeinen Krankenhause. Mit 4 Tafeln. Wien, 1899. Pp. 32.

This small pamphlet contains a popular lecture on the Röntgen rays and their practical application to the needs of medical science. It is a very clear, concise presentation of the subject and would be difficult to improve on.

Treatise on Orthopædic Surgery. By Edward H. Bradford, M. D., Surgeon to the Children's Hospital and to the Samaritan Hospital, etc., and Robert W. Lovett, M. D., Assistant Surgeon to the Children's Hospital, etc. Illustrated with Six Hundred and Twenty-one Engravings. Second Revised Edition. New York: William Wood & Co., 1899. Pp. vi–655.

The rapid progress of orthopædic surgery since the publication, in 1890, of the first edition of this work has required its very close revision and the entire rewriting of certain chapters. By judicious condensation, including the omission of over a hundred and fifty cuts, and the use of smaller type, the book has been much improved, as well as brought into smaller compass. The excellent pathological work of Dr. Nichols, of Boston, finds ample recognition in the new volume. In the chapter on Pott's disease the standard methods of mechanical support are adhered to, and the new treatment by rapid, forcible correction is accepted in a much modified form, without anæsthesia, without the use of great force, and only in selected cases in which the after-treatment can be efficiently carried out.

Recent progress in the treatment of congenital dislocation of the hip is recorded, and the operative and bloodless methods of reduction are briefly described. The authors wisely conclude that it is still too early to draw positive conclusions as to the ultimate benefit following these procedures. As in the former edition, the most important recent contributions are given in substance or by reference, and standard methods of treatment fully tested in practice are advocated.

The ample experience and ripe judgment of the authors make the work, all things considered, one of the most authoritative and practical treatises on orthopædics in the language.

A Practical Treatise on Medical Diagnosis. For Students and Practitioners. By John H. Musser, M. D., Professor of Clinical Medicine in the University of Pennsylvania, etc. Third Edition, revised and enlarged. Illustrated with Two Hundred and Fifty-three Woodcuts and Forty-eight Colored Plates. Philadelphia and New York: Lea Brothers & Co., 1899. Pp. xv–17 to 1082.

It gives us much pleasure to call attention to the third edition of this work. In it the treatise has been revised and rearranged so that its presentation of the science and art of diagnosis is in harmony with the most recent advances. The work is a very excellent one, and not the least of its good features is the copious and very graphic illustration. It is true that some of the colored plates are crude, but for the greater part, and especially in the case of those that are diagrammatic in character, they are most instructive.

International Clinics: A Quarterly of Clinical Lectures on Medicine, Neurology, Surgery, Gynæcology, Obstetrics, Ophthalmology, Laryngology, Pharyngology, Rhinology, Otology, and Dermatology, and Specially Prepared Articles on Treatment and Drugs. By Professors and Lecturers in the Leading Medical Colleges of the United States, Germany, Austria, France, Great Britain, and Canada. Edited by Judson Daland, M. D. (Univ. of Penna.), Philadelphia, Instructor in Clinical Medicine and Lecturer on Physical Diagnosis in the University of Pennsylvania, etc. Volume III. Ninth Series. Philadelphia: J. B. Lippincott Company, 1899. Pp. vii–298.

Many interesting clinical lectures have been collected to fill this volume of the *International Clinics,* both America and Europe being represented by men whose names stand high in the scientific world. The volume will well repay perusal.

The Medical Digest, or Busy Practitioner's Vademecum. Appendix, including the Years 1891 to March, 1899. By Richard Neale, M. D. Lond., Member of the Dutch Medical Society of Batavia, Java. London: John Bale, Sons, & Danielsson, Ltd., 1899. Pp. 261.

The most recent appendix to the *Medical Digest* includes the ground covered by the former appendix, namely, that of the period from 1891 to August, 1895, and brings this remarkable reference work almost up to date—in fact, to March, 1899. Our readers are probably familiar with this publication, for we have before this expressed our commendation of it.

BOOKS, ETC., RECEIVED.

A Text-book of Diseases of Women. By Charles B. Penrose, M. D., Ph. D., Professor of Gynæcology in the University of Pennsylvania, etc. Illustrated. Third Edition, revised. Philadelphia: W. B. Saunders, 1900. Pp. 12 to 531. [Price, $3.75.]

A Manual of the Diagnosis and Treatment of the Diseases of the Eye. By Edward Jackson, M. D., A. M., Emeritus Professor of Diseases of the Eye in the Philadelphia Polyclinic, etc. With One Hundred and Seventy-eight Illustrations and Two Colored Plates. Philadelphia: W. B. Saunders, 1900. Pp. 6 to 604. [Price, $2.50.]

Thyreoid Medication. By A. Flourens. With Sixteen Reproductions from Photographs. Bordeaux: G. Gounouilhou, 1900. Pp. 32.

Verhandlungen des Vereins für innere Medicin zu Berlin. Herausgegeben von dem Vorstande des Vereins. Jahrgang XVIII. 1898–1899. [Sonderabdruck aus der *Deutschen medicinischen Wochenschrift.*]

Some Complications met with before and after Operations for Hæmorrhoids. Their Causes, Prevention, and Treatment. By John L. Jelks, M. D., of Memphis, Tennessee. [Reprinted from the *Transactions of the Twenty-fifth Annual Meeting of the Mississippi Valley Medical Association.*]

Hermann Ludwig Ferdinand von Helmholtz. By John Gray M'Kendrick, M. D., LL. D., F. R. SS. L. and E., Professor of Physiology in the University of Glasgow, etc. New York: Longmans, Green, & Co., 1900. Pp. xvi–299. [Price, $1.25.]

Two Cases of Spontaneous Rupture of the Heart, with Demonstrations of Specimens. By A. W. Hoisholt, M. D., of Stockton, California. [Reprinted from the *Occidental Medical Times.*]

Miscellany.

The Plaintive Patient and the Pretty Nurse.—"Abandon love, all ye who enter here," should apparently be written over the entrance of some infirmaries, if we may judge from the plaintive wail of a writer in the *New Orleans Times-Democrat:*

"Professional nurses have no business being so confoundedly good-looking," said a young man who has recently spent several weeks in a local infirmary. "The nurse who was delegated to attend to me while I was laid up was a distractingly handsome girl, with a pure Greek profile, reddish-brown hair—the kind that seems full of little golden tendrils in the sunlight—and eyes as liquid as a fawn's. The first time she put her finger on my wrist my pulse ran up to at least 175, and she took it for granted I had a high fever and dosed me accordingly. I tried repeatedly to lure her into conversation, but she wouldn't be lured. She was strictly business. When I started to pay her compliments she would ask me to put out my tongue, which was an insurmountable obstacle in conversation. I used to lie there with my tongue hanging out, trying to put my whole soul into my eyes, but it was no go. No man can look romantic with half a foot of furry red tongue protruding from his countenance.

"Another way she had of gagging me was by putting the thermometer in my mouth. The last week I was there I proposed to her five times, or, rather, I tried to, but she invariably choked off my declarations by thrusting a thermometer into my mouth. I got so excited one time that I came near swallowing a thermometer worth several dollars. She was a most excellent young woman and had lots of sound common sense, as was evidenced by the fact that she gave me no encouragement whatever."

Lactation in a Male Infant.—Dr. George M. Blair (*Lancet*, December 23, 1899) records the case of a male infant recently born who was losing flesh and was suffering from excessive vomiting and sleeplessness. On examination, the child exhibited two highly developed mammæ, in size about that of two walnuts, and on slight pressure of the right mamma a quantity of milk oozed out. The mother informed him that she had noticed the swelling of the breasts and the flowing of milk for some time and had lately got anxious as to the cause. With the exception of the scrotum, which only contained on palpation one testicle, the external genitals and other parts were normal.

The Medical School of the Future.—Dr. Bayard Holmes (*Journal of the American Medical Association*, December 23, 1899), in an article on The Progress of Medical Education, says in part:

"First of all it seems to me the ironclad sequence of medical studies must be broken up, and that the various branches of the medical curriculum must be intimately connected. Medicine must not be studied in separate layers, but transversely, and all parts of the medical curriculum must be bound into a perfect union by the motive which holds them together in the mind of the practising physician and surgeon.

"Medical education is not a preparation for the practice of medicine, but it is and must be the practice of medicine itself. The student and the patient must meet at the door of the medical school, and the motive for medical study must from the start be the cure or the treatment of the patient. The abstract statement is easier to make than any plan which will accomplish the object. But this object was accomplished by the old system with the preceptor, even though its accomplishment was rudely and uncertainly attained.

"Before any change can be made which will unify and coordinate the medical curriculum, every member of the faculty must be brought into harmonious sympathy with the idea that the medical school is to educate and not to instruct; that it is to develop the power of the student to cure the patient and not the ability of the student to answer questions or perform academic or laboratory feats. This, it seems to me, can be brought about by a more intimate subordination of the faculty and the curriculum to a medical educator, of which class of men most faculties possess two or three, rather than to a venerable or honorable dean, whose employment and disposition leave each teacher to a complete independence in regard to the management of his own so-called department. The student must come in close contact with the patient on the one hand, and with the teaching faculty on the other; and this contact must be attended with responsibility. The student must feel his responsibility for the care of the patient, and the faculty must feel a united and individual responsibility in the direction and education of the student. All of these ends I believe can be attained by the organization of an elective course in medicine, which will allow the student to study thoroughly some one part of the field of medicine, from which eminence he will attain a better knowledge of the whole field of medicine than is now attained by the body of our medical graduates."

. . . .

"In this proposed medical school the work done by the student must have an adequate and immediate object. This object must always be the cure of the patient. The work must be done in the best, most thorough, and most artistic manner. It must be as good as the best in every particular. It must be finished to the very end, and this end is to the point of making the work, research, or investigation useful. The end of some such investigation is not reached until the research is published. All this work is to be done with the primary end in view of curing or caring for some particular patient, but the hidden and essential end is the education of the student. And again, let me insist that the great object of any true plan of medical education will and must from the start put the student in the place of the physician. It will secure progress, going from the known to the unknown. This progress will be made or compelled by an adequate and imperative motive—namely, the desire to cure the patient. It will coordinate all the branches, so called, of the medical curriculum about the patient and his treatment. It will secure through this pressing motive such an interest on the part of the student, such a fluidity of intellect, such a concentration of purpose, and such an intensity of application as will make it resemble the play of children and the activity of genius. It will unite the various and now distinct members of the medical faculty on common objects of interest, and promote unity where there is now unfortunate rivalry. It will make the medical school a centre of medical information and research, and the source of material for medical literature. It will raise medical education to a plane and dignity worthy the support of private endowment and state aid, and make the medical faculties the pride of the medical profession. It will regenerate the body of the profession by infusing new blood and new spirit, and it will call forth into medicine the best educated young men in the land, who are now repelled and driven into other occupations by the unpedagogic methods of our schools."

The New York State Medical Association.—The sixteenth annual meeting of the Fifth District Branch will be held in Brooklyn on Tuesday, May 22d. It is proposed to make diabetes the topic for discussion. Fellows who are particularly interested in this topic and have any clinical data to present or theories to offer are asked to correspond with the president, Dr. J. C. Bierwirth.

The Medical Association of the Greater City of New York.—At the annual meeting, held on January 8th, officers for the ensuing year were elected as follows: President, Dr. Robert F. Weir, of the borough of Manhattan; vice-president, Dr. William McCollom, of the borough of Brooklyn; recording secretary, Dr. P. Brynberg Porter, of the borough of Manhattan; corresponding and statistical secretary, Dr. Frank C. Raynor, of the borough of Brooklyn; treasurer, Dr. Augustus D. Ruggles, of the borough of Manhattan; chairman for the borough of Manhattan, Dr. J. Blake White; chairman for the borough of the Bronx, Dr. S. Carrington Minor; chairman for the borough of Brooklyn, Dr. Charles P. Gildersleeve; chairman for the borough of Queens, Dr. Joseph F. Bloodgood; chairman for the borough of Richmond, Dr. William C. Walser; member of the executive committee, to serve four years, Dr. John H. Hinton, of the borough of Manhattan; member of the executive committee, to serve two years, Dr. Reynold W. Wilcox, of the borough of Manhattan.

The New York Academy of Medicine.—At the last regular meeting, on Thursday evening, January 18th, the programme included a paper on Myocarditis, by Dr. John H. Musser, of Philadelphia, and one on Myocarditis in Infants and Children, by Dr. Henry Koplik.

At the next meeting of the Section in Laryngology and Rhinology, on Wednesday evening, January 24th, Dr. Orlando B. Douglass is to read a paper entitled The Past and Present of Laryngology, and Dr. W. Kelly Simpson will present one entitled A Report of a Case Illustrating the Value of Early Diagnosis of Malignant Disease of the Larynx.

Traumatic Varix of the Orbit in which Ligation of the Left Common Carotid Artery was Successfully Performed.—At a meeting of the Section in Ophthalmology of the College of Physicians of Philadelphia, held on December 19, 1899, Dr. C. A. Oliver reported the case of a man who had been struck in his left eye five days before being seen. At four years of age he was caught between two railroad cars, and sustained such an injury to his head that he bled from the mouth, nose, and ears. There were palpebral swelling, conjunctival œdema, and proptosis. The globe was almost immobile, the iris was fixed, and the retinal veins were engorged. There was a temporal but not orbital bruit. Transient pressure on the left common carotid caused the eye to sink into place and the venous stasis in and around the orbit to subside. The symptoms increasing in spite of continuous compression upon the left common carotid, ligation of the vessel was done by Dr. T. S. K. Morton, and resulted in an immediate cessation of most of the symptoms. For the first time retinal venous hæmorrhages could be seen. Five months later the eye had become blind from secondary glaucoma, but all the previous symptoms had disappeared.

The early accident probably was the beginning of either an aneurysmal varix between the petrous and cavernous portions of the internal carotid artery and the corresponding cavernous sinus, or a varicose aneurysm between the two in which there was an intervening sac, or so-called false aneurysmal connection. In either case the lesion was in a protected situation and subjected to little arterial pressure. Therefore it grew slowly or may have remained stationary. A more recent blow upon the diseased region probably increased the opening into the venous structures and gave rise to the orbital varix. The appearance of absolute secondary glaucoma as the final outcome of the condition of the ocular tissues might be in a measure understood when it was considered that the eyeball was a lymph-producing organ, which was dependent upon normal blood supply.

Rabies in Belgium.—It appears from the *Gazette médicale de Paris* for December 23d that there is a widespread prevalence of rabies in Belgium. All the persons bitten by dogs suspected of being rabid have been subjected to the Pasteur treatment.

The Genito-urinary Section of the New York Academy of Medicine.—At the last meeting Dr. W. K. Otis was elected chairman for the ensuing year. The time of meeting of the section was changed from the second Tuesday to the third Wednesday in the month.

The Death of Dr. Charles E. Jones.—At a meeting of the board of managers of the Craig Colony, held at Sonyea, New York, January 9, 1900, the following note was recorded in the minutes:

The board of managers of the Craig Colony record with genuine sorrow the death of one of their number, Dr. Charles E. Jones, of Albany, New York, who died in that city, December 1, 1899.

He was a man who had won a high place as a skillful and faithful physician, a man of upright dealing always, and a man who was regarded with affectionate consideration by patients and friends alike. He was the late Governor Flower's family physician, and upon signing the bill creating the Craig Colony, the governor appointed Dr. Jones a member of the board of managers, which position he held from the founding of the colony to the day of his death. He took the deepest interest in this charity and greatly aided its development by his earnest zeal and broad-minded consideration of all matters relating to it. We feel his death to be a public loss which this board especially deplores.

[Signed for the board of managers of the Craig Colony.] FREDERICK PETERSON,
President.
H. E. BROWN, *Secretary.*

THE NEW YORK MEDICAL JOURNAL, JANUARY 27, 1900.

Original Communications.

FLEXION OR BENT-KNEE MARCHING.

By E. H. BRADFORD, M. D.,
BOSTON.

An investigation of the best manner of walking, as an exercise for correct carriage or on the march, will interest the physician and the gymnastic teacher, but none more than those in charge of the training of soldiers, for rapid marching was never so important to the strategist and tactician as it is to-day. The Confederate general Forrest defined the science of war as "getting there first with the most men." It is for this reason that the subject has attracted much attention among military men.

Rapid movement is spoken of by an English writer * on the subject as of "prime importance in field manœuvres, and more so to-day than ever; the time is gone by when heavy troops composed the main body of an army; the lesson of all recent campaigns is that great celerity of movement is indispensable."

In the last German manœuvres special attention was paid to rapid marching.

In the ordinary gait, as seen in pedestrians in our cities, the forward leg is advanced (the trunk being held erect) by the muscles of the front of the thigh and leg—viz., the psoas and the iliacus and the extensor cruris. After the foot is planted upon the ground firmly, another set of muscles by their contraction pulls the body forward. The heel, and later the front of the foot, but chiefly the heel, pressed upon the ground, are used for a pressure point to which the body is drawn. The muscles used for this are the glutæi and the hamstrings. The rear leg at the same time is used as a means of propelling the body forward by pushing, while the front leg is still in the air. The muscles that are brought into play for this push are the psoas and iliacus muscles, the hamstring, and the calf muscles.

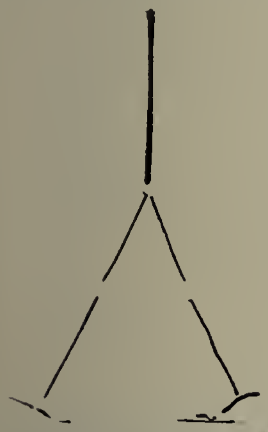

FIG. 1.—Diagram of erect gait at the moment of double support.

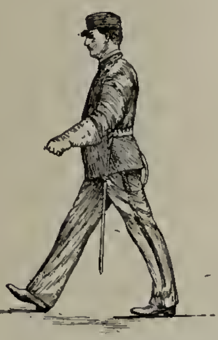

FIG. 2.—State militia officer marching in review. Drawn from a newspaper picture.

The weight of the trunk and head is at the moment of double support equally divided between the points of contact of the two feet. When the individual habituated to this manner of walking wishes to increase his gait he does so by increased muscular effort, using a longer and more rapid stride, and this is the gait of active pedestrians in cities and the one to which soldiers have been hitherto trained.

It is not, however, that used by those obliged to economize their muscular strength in locomotion, as couriers and hunters. It is not the active gait of savages, or of children, or of those accustomed to walk habitually over uneven ground.

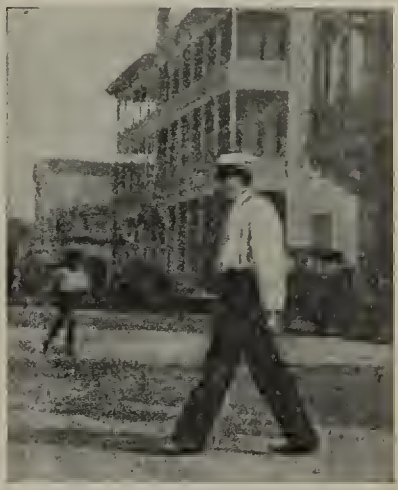

FIG. 3.—Straight-leg gait, civilian.

In the common gait in the evened paths of cities and towns the body is held erect. If, however, the trunk were inclined forward, it would of its own weight fall forward and thus be propelled in a measure without muscular action. This mode of locomotion—*i. e.*, falling forward—is actually employed in China by penitents in a pilgrimage to a shrine, the body alternately falling forward at full length, rising to fall again (cycle of Cathay). This same force—viz., the weight of the trunk falling forward—can be utilized practically.

So long as the trunk is inclined out of equilibrium it will tend to fall forward. The action of the legs may be chiefly to keep the trunk from falling to the ground, but in fact they may also aid in driving the inclined trunk forward by pushing. The whole of the sole of the front foot is in contact with the ground, and furnishes a broader and firmer contact surface than is given by the heel of the projected foot in the erect gait. Straightening the leg at the knee is also instinctively avoided in active bent-knee gait, as it involves the muscular action necessary to raise the weight of the trunk—from a hundred to two hundred pounds. In a slow gait, however, straightening the leg affords relief to the thigh muscles, for the straightened leg sustains the weight of the superimposed trunk largely upon the bones and ligaments, while the bent leg needs the effort of the quadriceps muscles to sustain the superimposed weight.

In rapid flexion walking, with the constant shifting of the weight from one leg to another, this burden is lessened; but in a leisurely walk, with slow steps, the straightened leg and erect trunk, balanced at each step between the front and the rear foot, gives momentary muscular rest and lessens the labor involved in the raising of the trunk necessary to the straight-legged gait.

In a rapid and long-continued march the strength expended in raising the trunk two inches at each step can be readily estimated as considerable. The front limb remains bent at the knee, as in this position the forefoot is at better advantage for the backward pressure of the limb employed in driving the trunk forward.

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* *Contemporary Review*, March, 1899.

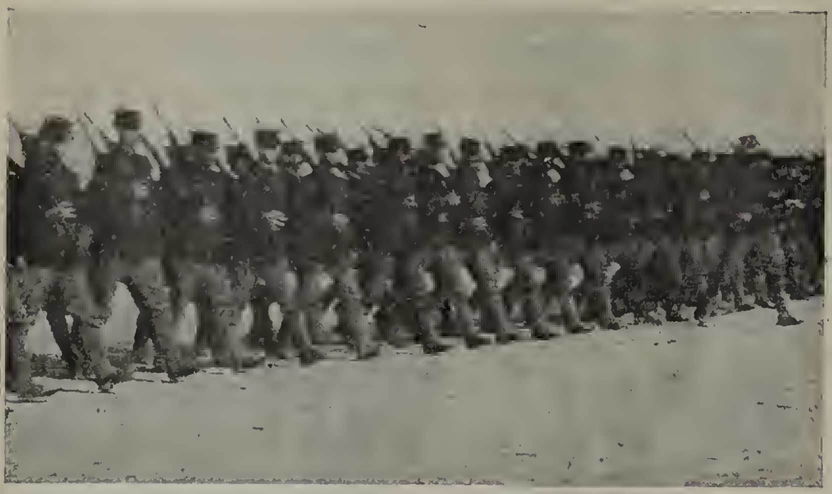
FIG. 4.—Straight-leg marching, United States marines.

The bent knee also furnishes less jar in checking the inclined trunk falling forward than if the leg was straight.

The erect or straight-leg gait is the gait of the dwellers of a city; it is the conventional gait, the gait of leisure, though it may become the rapid gait of the strong-legged. The inclined or bent-knee or flexion gait is the gait of rough country, of all who walk for a distance up to the limit of their strength, the gait of the strong-footed, requiring strength also in the muscles of the front of the thigh. It is the gait instinctively taken by boys when endeavoring to keep up with older and larger pedestrians who are walking rapidly.

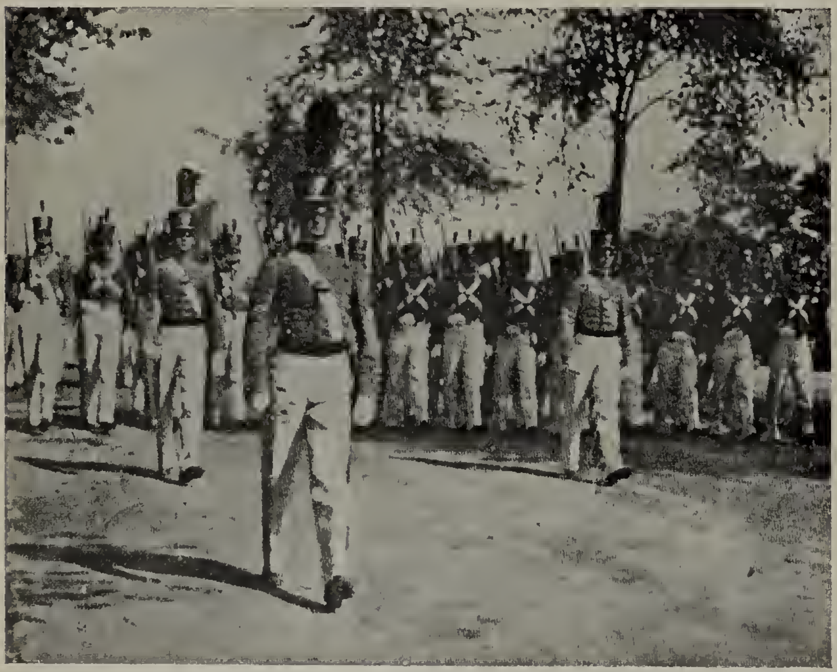
FIG. 5.—Straight-leg marching, West Point cadets.

This has been termed the flexion gait, from the most noticeable feature—that is, the bent rather than the straightened leg; but less noticeable, though no less if not more important, is the position of the trunk inclined forward from the line of equilibrium, thereby utilizing the force of gravity as a propelling force. If the trunk is held erect while the knees are kept bent the gait is both awkward and weak.

The gait is easily recognized, not only by the bent knee of the forward leg, the position of the head and shoulders well forward, nearly if not quite over the forward foot, but also by the lack of rise and fall of the trunk in the walk, and by the fact that the feet are kept nearly straight and not turned out, as happens if the thighs are well advanced in the erect gait by the psoas and iliacus muscles, which, inserted on the lesser trochanter, tend to rotate the limb outward.

It is evident that there are many gradations between these two well-marked types of locomotion, as well as individual peculiarities, and variations also in the rate of speed; but the rate of speed which can be acquired by the average man in the bent-knee is much greater than that attained by the straight-leg gait.

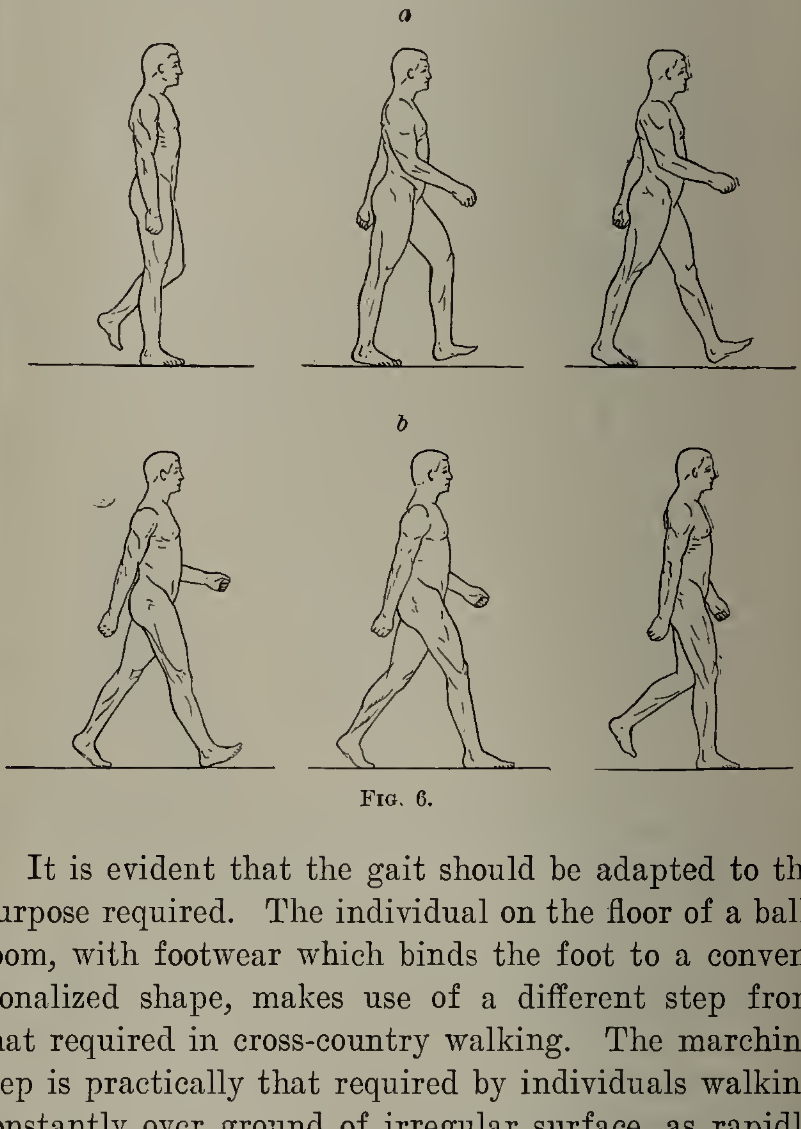

FIG. 6.

It is evident that the gait should be adapted to the purpose required. The individual on the floor of a ballroom, with footwear which binds the foot to a conventionalized shape, makes use of a different step from that required in cross-country walking. The marching step is practically that required by individuals walking constantly over ground of irregular surface, as rapidly as is compatible with the capacity of the weaker members of the command, and the pedestrian in long walks should employ that in which his muscular force is used to best advantage.

The parade step may be left out of consideration in this inquiry. It will necessarily be more or less a matter of convention, dependent, as it is, upon military fashion, the views of the sovereign, the commanding officer, or the community before whom parades are made, and will vary from Berlin to New York. The attempt to train soldiers in the straight-leg gait to strike the ground first with the sole and not the heel of the extended leg, the "parade shritt" of the Germans, is an example of this. The step requires training, indicates drill, but is not a useful one.

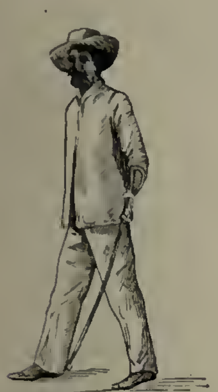

Fig. 7.—Spanish officer. Drawn from a newspaper picture.

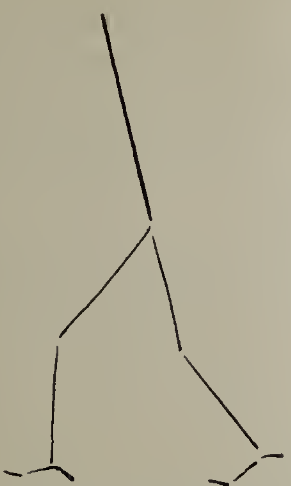

Fig. 8.—Flexion, inclined, or bent-knee gait.

The question as to length of stride and cadence is also a question of drill. These vary with the height and strength of the individual and are learned instinctively in practice.*

To quote from a writer in the New York *Sun*, May, 1899: "Men who served in the last war," said a member of the National Guard, "soon learned that the armory step was of little use in the field. The one was all right enough in its place, and even in the streets of New York; but in the field, where men want to keep their strength as much as possible, they soon learned that a bent knee and toes straight ahead were better than the stiff leg and toes out. The 'get-there' step is what we called it. . . . The high-stepping soldier is as little suited for long marches as the high-stepping horse for a race. To march effectively is one thing, 'to look pretty' another."

"The upright posture is admired and taught to the soldier, but it is the one that demands the greatest expenditure of physical energy, and is the worst adapted for prolonged effort."

Where the ground is soft and the muscles of the soles of the feet are strong, the front of the foot, including the toes, can by muscular contraction of the sole muscles and of the flexor muscles of the toes exert a greater pressure upon the ground, and serve as a means in driving the body forward. Strong-footed individuals with moccasins or bare feet actually claw the ground in strong action in a manner analogous to the gait of bears or monkeys. This will be seen in strong-footed individuals walking up an incline or upon slippery ground. Where the flexion gait is carried out largely to the exclusion of the use of the rear foot in pushing, the muscles of the feet will be developed to a greater extent than the muscles of the calves of the legs, and this is commonly seen in barefooted savage races.*

A valuable consideration of this subject was made a few years ago by French military writers, who developed and have advocated the flexion method of marching described, after studying the couriers of Algiers.

This gait, although in rapidity at times resembling a run, differs from a run, as both of the feet are never lifted off the ground at the same time. It does not tax the strength and circulation to the same degree as a run. The gait is analogous to what has been developed in individuals of all sandal-wearing or barefooted nations, who, as hunters and couriers, are obliged to cover long distances rapidly,† and is analogous to what has been termed the inclined or bent-knee gait.

French writers give the following description of the leg movements of this gait: "The knees must be always bent; the feet lifted no higher than necessary to clear the inequalities of the ground; the advancing foot must be placed flat on the ground, the step being made neither by the toe nor by the heel. The footfall should be noiseless, and the steps at first short and frequent. The body must lean well forward, the back must be straight and the head erect, the chest open and shoulders low." ‡

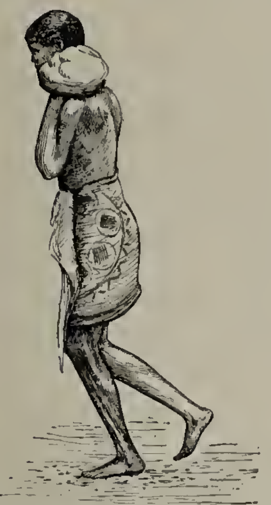

Fig. 9.—Flexion gait, west coast of Africa. Drawn from a photograph.

Fig. 10.—Inclined gait in child, west coast of Africa. Drawn from a photograph.

Dynamometric experiments are said to have shown that the foot does not press so heavily on the ground as in the ordinary style of marching, and so, it is suggested, the man has more strength left to expend in propulsion; moreover, there is less of a jar at each step, and in place of the customary tramp of armed men, the tread is comparatively noiseless.#

It is clear that this gait, which is to be employed where rapid movement is required, will be best used by

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* The length of the ordinary step in the United States army is thirty inches, measuring from heel to heel, and the cadence is at the rate of a hundred and twenty steps a minute. This was formerly ninety steps of twenty-eight inches to the minute. The length of the full step in double time is thirty-six inches, and the cadence is at the rate of a hundred and eighty steps a minute.

The stride of the German soldier is thirty-one and a half inches, with a cadence of a hundred and twelve steps a minute. The French soldier has a stride two inches shorter, and a cadence of a hundred and fifteen steps a minute.

* In the front foot of the Greek statue of the Discobolus the strong contraction of flexible toes to secure a hold upon the ground is well depicted. This can also be noticed in the wear of moccasins.

† New York *Nation*, July 23, 1896, p. 68, and August 13, 1896, p. 122.

‡ *Army and Navy Journal*, September 9, 1899.

# *New York Medical Journal*, September 23, 1899, p. 454.

people with strong and flexible feet and feet unimpeded by constricting shoe wear.* This is substantiated by historical facts. Morgan's Rangers in the Revolutionary War with their moccasined feet were able to show a surprising amount of marching activity, and in the Italian campaign in Abyssinia Menelik's strong-footed troops showed activity to great advantage as compared with the Italian soldiers. An extraordinary march was made in 1885 in Peru by the troops under General Caceres along the Cordilleras to Chicla, which, according to reports, outclassed all records of forced marches by trained European soldiers.

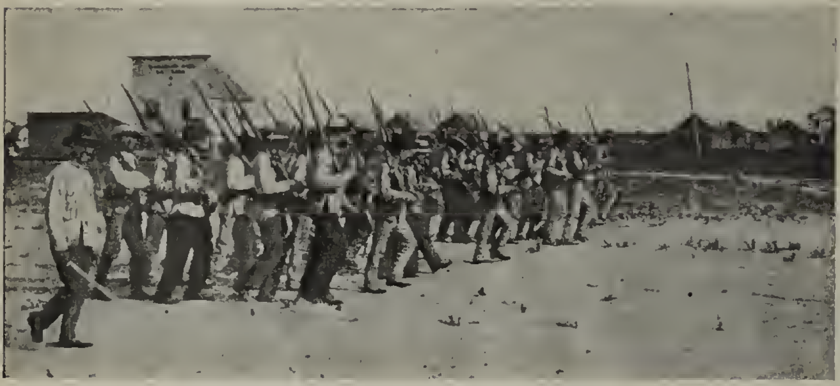

FIG. 11.—Flexion gait, Cuban volunteers.

From facts such as these it appears that in training for marching we have still much to learn from the moccasined and semicivilized nations. It will be suggested that as savages are habituated from early youth to an activity of foot it is impossible that their record can be approached by civilized nations. This argument, however, is hardly convincing, as it has been proved that in all athletic contests civilized man, after training, is superior to a savage. If the proper methods of training are used equally good results can be obtained. The civilized soldier should certainly not be hampered, however, by imperfect shoewear, and by an imperfect system of training, which develops wrong muscles.

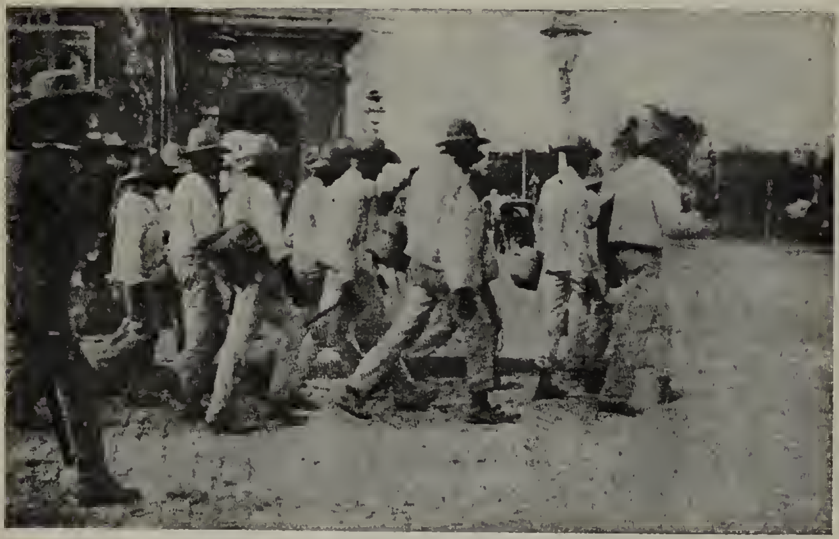

FIG. 12.—Flexion gait, negro chain gang.

The method of physical development for the purpose is not difficult, as has been shown by French experience, and consists simply in training in what is termed "flexion" marching with proper shoes. The same can be accomplished in this country if similar measures are adopted.

"In France two officers, two sergeants, and thirty men of a regiment were put under training at Nantes, and it is reported that 'after three months' instruction, they marched, in the presence of General Fay, carrying their rifles, bayonets, one hundred rounds of ammunition per man, and food for one meal, along a hilly road, a distance of twelve miles and a half in an hour and forty-six minutes, which is at the rate of rather over seven miles an hour. Not one man fell out by the way. After a rest of two hours, they returned in three hours and five minutes, including two halts of ten minutes each, which gives an average speed of over four miles and a half an hour. Two days afterward these same men, in the presence of General Colonieu, in heavy marching order, covered a distance of six miles and seven eighths across fields, on hilly ground, in an hour and twenty minutes, which works out at about five miles and a half an hour. At the end of their march they were at once told off to target practice, when their shooting proved superior to that of the best company of marksmen in the regiment; this was done to determine whether the exertions of their rapid march had injured their capabilities as riflemen."

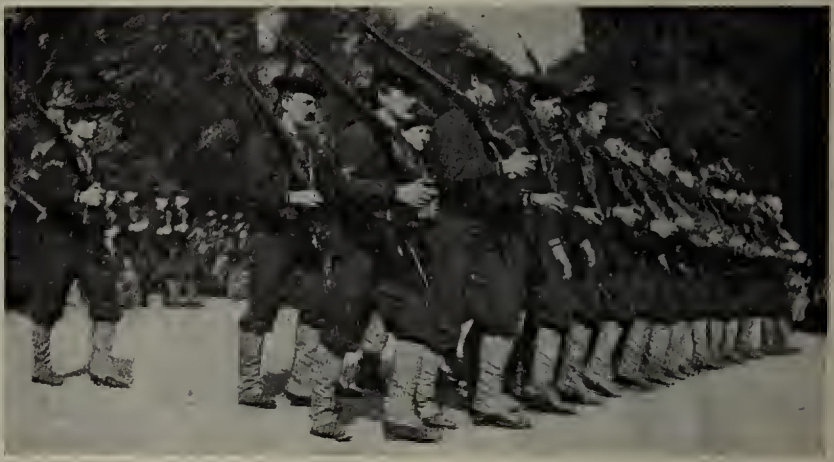

FIG. 13.—Flexion marching, sailors from the *Olympia*.

The English writer in the *Contemporary Review*, 1899, shows that by proper training "speed" may be acquired, and relates that a body of English reserve artillerymen, who were no longer young, after a course of eighteen lessons, marched five miles in forty-six minutes with their arms only, and two miles and a half in twenty-six minutes with full equipment.

The lessons, according to the French authorities,* need not be more frequent than two or three a week.

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* Professor Shaler, of Harvard University, who has frequently tramped with North American Indians, tells me that a gait employed by them consists in lengthening the stride by throwing the pelvis forward. This is used occasionally in track walking matches and in short legged walkers in an attempt to keep pace with longer-legged competitors, but can not be utilized in long-distance marching.

* *Loc. cit.*

A table is given of the distance to be traversed in each of the thirty-six lessons, beginning with three thousand yards and going up to twelve thousand; also showing how in the early lessons ten minutes is allowed for the first kilometre, nine and a half for the second, and seven and three quarters for the third; these times steadily diminish with each lesson, as the pace increases, until finally the first kilometre, or five eighths of a mile, is traveled in seven minutes and three quarters, the second in six and a quarter, and the third in five and three quarters. Now, one kilometre in five minutes and three quarters is a good six and a half miles an hour. It is added that a three-months' drill is necessary to thorough training in the "flexion" march.

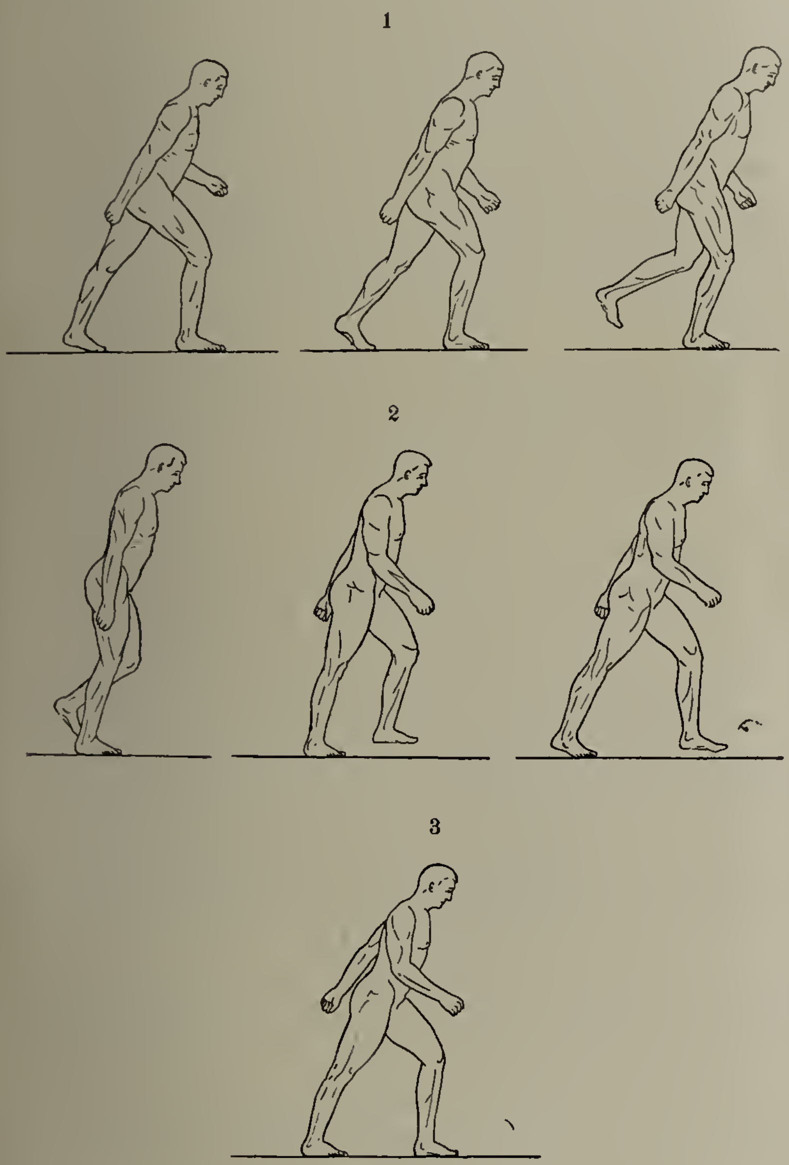

FIG. 14.

To enable, therefore, the individual to attain to considerable speed without fatigue, it is only necessary to develop certain powerful muscles not brought into action to a great extent in ordinary civic walking, and this from the evidence presented would appear to be easily possible.

Any one attempting this "flexion" or "bent-knee" gait will after a little practice be convinced of its value as well as of the obstacle to its adoption. The latter can be stated to be simply that it is not a gait which is in accordance with the accepted idea of marching or graceful walking.

A knowledge of the principles above mentioned is also of value to all interested in walking as an exercise, and in this connection the origin and development of the erect gait are of interest. In roadless communities the feet and legs of the pedestrians are exercised in accordance with the muscular needs in locomotion on uneven ground, which by its inequality brings into play all the muscles that are used in walking. The shoewear is either loose or the individual is barefooted, and the foot is not cramped; but in cities or towns where the footpath is even, and a leisurely gait is favored, the trunk is held erect and the rear leg, when advanced, is swung forward like a pendulum, striking the ground well in front of the axis of the trunk. This gait becomes the habitual gait, and is an easy one. Walking is deprived of its difficulties through removal of obstructions and the even surface on which the individual walks. The individual is able to wear boots of a conventional shape which constrict and weaken the front of the foot without interfering with locomotion and without materially interfering with the gait. After the individual has become habituated to this gait, and the muscles necessary for this form of walking are developed, it becomes the customary means of pedestrianism, and where speed is required, or exercise is needed, the same form of gait is used, a gait which, however, demands an unnecessary expenditure of muscular force.

The flexion gait may be regarded as a natural gait, and should be acquired and practised by all pedestrians, among whom walking is of service, either as a means of healthy exercise or as a necessity.

The subject is one well understood in the War Department, and is in practical use in the regular service, but it is desirable that those in charge of our State militia organization should consider it. Instruction and drill in marching with proper footwear, with contests between different organizations, could be introduced as rifle practice has been, and would be beneficial both to strength and to the efficiency of volunteer troops.*

Richard H. Dana, the author of *Two Years before the Mast,* an accurate observer, and except in early life accustomed to meet chiefly those habituated to urban or erect gait, graphically, though unconsciously, described the "forward gait" of General Grant, when the latter first came to Washington fresh from hard campaigning and years of frontier life. In connection with the commander's lack of military bearing he writes, "He does not march, nor quite walk—he pitches forward."

General Grant may stand for the great exemplar of modern war, which disregards convention, but utilizes all forces in accomplishing the desired end.† A careful economy of all strength is as useful in peace as in war, and is desirable in our sports as in our work. It should not be overlooked in the healthy exercise of pedestrianism.

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* In this connection the recent performance of a seven year-old barefooted boy in Missouri deserves notice. He is reported to have walked twenty miles in four hours and a half (*Boston Globe*, Friday, October 6, 1899), without fatigue, affording an illustration of the fact that the rising generation has native qualities which our civilization should not check.

† Rhodes. *History of the United States*, vol. iv, p. 439.

REMARKS ON INTRANASAL OPERATIONS.*

By WALTER F. CHAPPELL, M. D., M. R. C. S. Eng.

POSSIBLY no subject connected with our specialty has received more attention than the one embraced in the title of this paper. It may not be my privilege to impart any new procedures to this society of skilled rhinologists; but I wish to draw your attention to my experience and observations, that I may benefit from your discussions and criticism.

There was a period in the development of our specialty when, beyond nasal douching, little was done for affections of the nasal passages. The brilliant results effected by the removal of adenoid growths from the nasopharynx drew attention and thought to the effects of all nasal obstruction on general conditions. From this date many enthusiastic workers have labored to devise means to meet all forms of nasal stenosis. It was not realized at first in this new departure of nasal treatment that much harm might result from operations in the nasal passages. We all at this time realize that no nasal treatment should be undertaken without carefully considering the best measures to be adopted and their results. It is not necessary for me to enumerate the many operations which have been recommended for the relief of different nasal conditions which seek our aid. I wish, however, to state that, in my belief, a most conservative spirit should be cultivated in the treatment of all nasal conditions, and that extreme measures, accompanied by any great loss of tissue, are rarely justifiable. The subject of nasal surgery covers such a wide field that I shall confine my remarks to some operations and treatment of the sæptum. The most frequent sæptal conditions requiring surgical interference are spurs, deviations, and thickenings. All spurs, in my belief, do not require removing, and unless they give some undoubted evidence of their pressure I advise against it. The small anterior spurs and localized thickenings of the sæptum may readily be treated by the annular knives described by me some years ago. Their advantage consists in the possibility of removing the exuberant cartilaginous tissue and leaving the mucous membrane attached anteriorly, so that it can be immediately replaced. The large sæptal spurs, whether anterior or posterior, can, in my opinion, be removed more satisfactorily with the saw than by any other means. If you will bear with me for a moment I will make some remarks on what I consider the essential qualities of a saw. In choosing this instrument one should be selected that is firm, with rather a short cutting blade, the teeth of which readily catch the mucous membrane and cut both ways. Dr. Mial, of the Manhattan Eye and Ear Hospital, New York, has presented us with such a saw. Its teeth are arranged similarly to the crosscut saw of commerce and cut rapidly through the tissues both ways, with little pressure. In my experience it has given more satisfaction than any other of the numerous saws I have used. Variously shaped handles are made for this saw, but that recommended by Mial is the best. I have taken some of your time on this seemingly trivial matter, but the selection of the instrument we are to use is most important in obtaining good results.

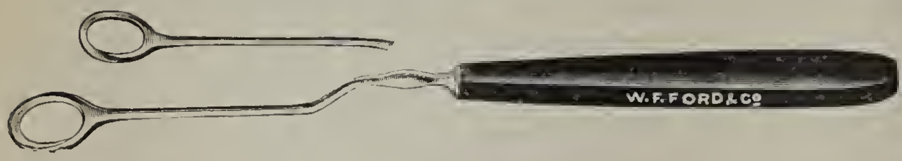

FIG. 1.—Annular knives.

The after-treatment of sæptal wounds has caused considerable discussion in our societies, and we have gone through the periods of dressing with cotton, gauze, spunk, and also the period of leaving the wound completely unprotected, relying on cleansing and free drainage for good results. The latter method, I think, is now generally accepted as being the most desirable. It has, however, some drawbacks in the prolonged process of granulation, which not infrequently produces an exuberance of tissue, in many instances equaling, if not surpassing, the original amount of tissue removed. Furthermore, if a large spur has been removed and no dressings have been applied, a secondary hæmorrhage may occur. These, with other minor considerations, make it desirable in some, if not in all, cases to adopt means which will prevent the formation of granulation tissue and hasten cicatrization. During the past year I have renewed my attention to the after-dressings of sæptal wounds, and have met with a fair measure of success in accomplishing this, and will briefly relate my procedures. My first step is to thoroughly douche the nares and the nasopharynx. I believe douching to be better than the spray, as it not only is more effectual in cleansing the parts but, owing to the smaller amount of pressure employed, less hyperæmia of the mucous membrane is produced. I have used all kinds of antiseptic solutions, but do not find that any one more than another has special virtues to recommend it. The solution should be warm, alkaline, antiseptic, and non-irritating, and plenty of it should be used so as to insure thorough cleansing.

The field of operation is then dried and an eight-per-cent. solution of sterile cocaine applied; after five minutes a filtered solution of suprarenal extract is applied and allowed to remain about two minutes, when cocaine is again applied for ten minutes. This routine, I believe, gives the greatest amount of cocaine anæsthesia and the fullest hæmostatic effect of the suprarenal extract. The saw, with all the instruments employed, should be thoroughly clean. In using the saw a complete removal of the spur tissue should be done, as I think some of it is too often left and results in an incomplete operation, and leaves a base for new tissue to proliferate. I believe it is also important not to wound the mucous membrane with the end of the saw, which is often done by using too much backward force. If any shreds or ragged edges of mucous membrane remain they should be trimmed off. Powdered nosophene, boroform, or some similar antiseptic powder is then dusted over the surface. Before beginning the operation a splint of gutta-percha, such as is used by dentists, is prepared, of suitable shape and size, and is then dipped in a fifty-per-cent. albolene and nosophene solution and introduced so as to cover the sæptal wound.

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* Read before the American Laryngological Association at its twenty-first annual congress.

The splint should be held firmly over the cut surface until the outside packing is introduced. For this purpose I have employed two retainers, such as are shown in Fig. 2. The intranasal blades are corrugated on one side, which prevents their slipping, and they are made in two lengths. The short blade is for anterior work and the long blade for posterior work. After the splint has been placed in position by the operator, the retainer is introduced and given to an assistant, who stands behind the patient, to hold. He applies firm pressure, but should keep the retainer perfectly steady. The warmth and moisture of the tissues, together with the pressure, mold the splint into the wound. The dressings are then easily introduced external to the splint, as the pressure by the assistant on the retainer gives plenty of space between the splint and turbinated bodies. The kind of dressings employed will probably be determined by the individual preference of the operator. I have tried absorbent cotton, iodoform, and nosophene gauze, spunk, oakum, and Bernays sponge, and give the preference to the splints recommended by Dr. W. L. Simpson, made from the Bernays sponge. The small-sized ones are the most useful, and should be dipped quickly into water and liquid vaseline just before introducing them. This treatment of the splint will make it swell a little at once and gives just the required amount of posterior and lateral pressure. On removal, some days later, it will be found that the centre of this splint is perfectly dry. This shows that the primary pressure has been sufficient to greatly lessen the secretion—in fact, the wound, splint, and other dressings, excepting the outside, will be perfectly dry if the work has been successfully done. If the anterior part of the nasal cavity is large, it may be necessary to put in some extra small pieces of Bernays sponge, or to moisten the anterior end of the Simpson splint. The patient is then allowed to depart, returning for examination on the second day. If there is no discomfort from pressure and the dressing looks dry, the splints are retained for another twenty-four hours, and removed on the third day.

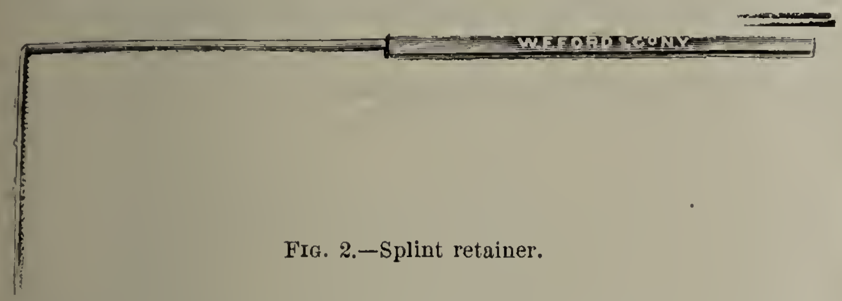


Fig. 2.—Splint retainer.

Of course, some discretion must be used in the length of time the splints and dressing are allowed to remain. I have, in many cases, kept them in for a week with benefit, while in other cases they had to be taken out on the second day. As an average, I think my best results have followed the removal on the third day. Care should be exercised in taking out the dressing, so as not to disturb the gutta-percha splint. The Simpson splint comes out in layers and is easily removed. The question whether the gutta-percha shall be removed or left *in situ* must then be determined. If the splint looks dry, and there is no odor or evidence of suppuration, I dust in one of the antiseptic powders already mentioned, and reintroduce the Simpson splint. If the splint is removed the wound is douched as at the first operation, and the splints and dressings are again applied, with the precautions before mentioned. Two dressings after the one at the operation carry the patient along for about ten days, when the sæptal wound is either entirely healed or so far advanced that the dressing and splint can be removed. In fact, in some patients one redressing is all that is required. The cicatricial tissue covering the sæptal wound is smooth and even and the whole aspect of the surrounding tissue is much better than I have seen when other methods have been adopted. During the past nine months I have treated all my cases of sæptal spurs by this method, both in hospital and private practice, with an average healing of the operative surface in from seven to fourteen days, and without the formation of any excessive granulation tissue. At first a few cases complained of pain from the pressure, but a little experience showed about the amount of packing necessary for each case. It is specially important not to use a large Simpson splint. The removal of the rubber splint, if done with ordinary care, produces no hæmorrhage, as other dressings often do, for it does not adhere to the cut surface. No cases have shown any symptoms of sepsis nor any evidence of nasal irritation since the details of the operation and dressing have been worked out. The introduction of the suprarenal gland into nasal surgery makes a bloodless operation possible, and the after-dressings, continuing the pressure on the vessels, prevent subsequent oozing. I believe these have contributed largely to the success I have obtained in preventing the formation of post-operative granulation tissue. This statement has been confirmed in several instances when the suprarenal extract failed, and considerable hæmorrhage occurred, followed by more granulation tissue and suppuration than when the operation was bloodless.

The rubber splint, I have shown, may also be employed after operation for straightening the sæptum, and in my opinion greatly simplifies this operation. Any of the numerous methods for breaking up the sæptal deformity may be done, and the rubber splint, shaped to the size of the nasal cavity and cut a suitable length to reach sound tissue posteriorly, may then be introduced and treated in the way already described. A similar splint may also be used on the other side of the sæptum, but unless it is a case of great deformity it is unnecessary. When employed, I always remove the second splint permanently on the first or second day after operation.

We have all felt, I think, the need of a splint for sæptal deviations which embrace the full width of the sæptum. Most of the splints in use are smaller at the posterior than at the anterior end, and in wide sæptal deviations employ pressure for not more than half the sæptal width, leaving the upper part unsupported. The splint shown to this society is intended to meet these cases, and also for deviations confined to the upper segment of the sæptum. It consists of two hollow plates, one for either side, connected by a spring. The hollow plates carry a plate so arranged that after introduction the posterior end is elevated after the shape of a fan, and exactly double the width of the posterior end of the splint. The fan extension can be used on both sides of the sæptum if the operator so desires. After introduction the small Simpson splint is used for pressure, but other measures may be used. In the conditions for which the splint was designed it has proved most satisfactory in keeping the parts in the position desired.

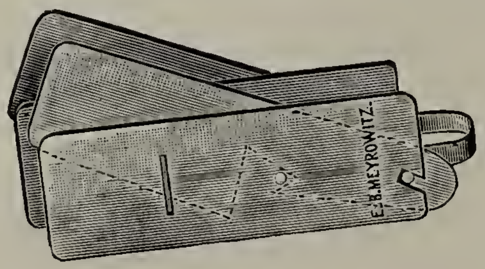


Fig. 3.

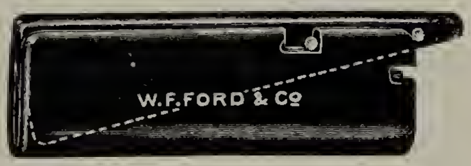


Fig. 4.

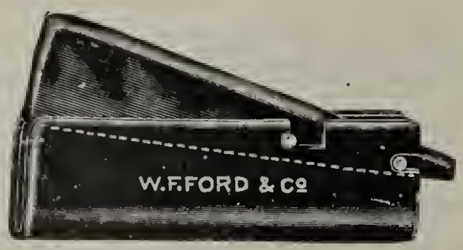


Fig. 5.

I also wish to draw your attention to another fan-shaped rubber splint of tubular form.

This splint allows of an increased posterior width and of free nasal respiration after its introduction. Its many advantages are readily apparent.

7 East Fifty-fifth Street.

THE STUDY OF INHIBITION.

By J. Y. GONZALEZ, M.D.,
NICARAGUA.

In dealing with the intimate nature of inhibition, it is my purpose only to call the attention of those initiated in the secrets of Nature, to the end of throwing light upon so fundamental a subject, to analyze it with the scalpel of reason, eliminating unsustainable conceptions for want of harmony with universal principles, and formulate a theory more in accordance with established principles.

The subject deserves all attention and speculative study. The obscurity surrounding it depends partly upon the accidental manner of its discovery and upon the complexity of the organs in which it was first observed. In 1838 Volkmann, on stimulating the vagus, observed the heart pulsating at twenty beats to the minute, and called this phenomenon "something very curious." Shortly afterward, Weber, taking as a starting point the observations of Volkmann, after various experiments, called that phenomenon inhibition. A series of experiments, accompanied with varied explanations of the *modus operandi* of inhibition, was the outcome for a number of years, until the investigation was extended to other muscular organs, and lastly to all the vital ones. Recently, as a result of investigations made on comparatively rudimentary organisms, the study has been simplified to the degree of a probable satisfactory explanation harmonizing with universal biological principles. Naturally, as a result of the multitudinous experiments made, be it that we have rightly interpreted the intimate nature of the inhibitive force or that we are still in error in that respect, the practical findings are quite satisfactory from a clinical point of view. The various modes of inhibitory operation are: direct, reflex, central, peripheral, crossed, reciprocal, and double, which I only mention, as I intend to deal in this short essay with the fundamental character of the vital manifestation called inhibition.

The current theory of Hering and Gaskel does not seem to provide a satisfactory explanation. They "suppose in all living tissues the existence of two antithetic chemical forces called assimilation and dissimilation, or metabolism and catabolism, which forces they identify respectively with inhibition and acceleration."

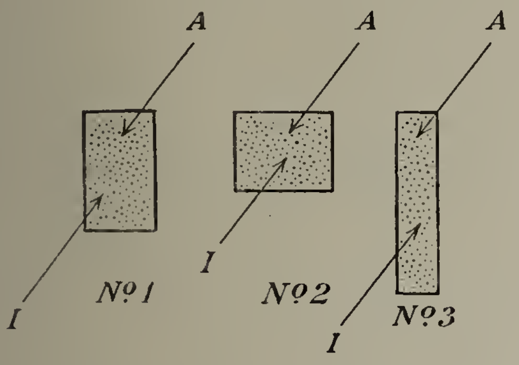
Now, according to universally accepted biological principles, assimilation and dissimilation are two phases of the same chemical process universally present in all living tissues, vegetal and animal; assimilation can not go on without dissimilation; they are two immediate, inseparable successive stages in the chain of metamorphoses whose manifestations constitute organic life. Now, then, if in vegetables we know no inhibitory phenomena, we have to conclude that neither assimilation nor dissimilation can be identified with inhibition. Thus we see how unsatisfactory that theory is.

Without pretending to dogmatism, I wish to propose a theory that, being in harmony with accepted vital principles, may have a scientific character sufficiently strong to draw recognition.

I propose to interpret inhibitory force in terms of molecular motion, not without analogy with isomeric redistribution of molecules in colloid substances. Every vital organ exhibiting inhibitory phenomena receives constantly two currents of nervous vibrations in opposite directions, and, as these are partly neutralized, there remains a resultant working in the direction of functional activity as ordinarily manifested by the organs. The two nervous waves are, though contrary in direction, of the same nature, since there are no fundamental differences of structure between the nerves transmitting the inhibitory and those carrying the accelerator impulse.

To better understand this mode of operation, let us take a simple case, that of a muscle-nerve preparation, decomposing the more complex ones into their component parts. A muscular contraction is the result of a molecular redistribution of the sarcolemma: each cell on contracting diminishes in length as it increases in thickness.

The diagram exhibits the various effects of two molecular currents operating in opposite directions, and, according to their relative strengths, producing the states of tonus, contraction, or inhibition. *A* stands for accelerator current, *I* for inhibitory current, and the figures are symbolical of the molecular redistribution whose final result is the change of form of the muscle cell. In No. 1 we see the state of tonus, in No. 2 that of contraction, and in No. 3 that of inhibition.



The functions of non-muscular organs depending, as they do, upon the circulation of blood, and this upon the muscular action of the vascular system, we can, I believe, apply the same mode of operation to them; and, though some investigators believe they have found special inhibitory nerves that work irrespective of any vascular influence, there is no difficulty in applying the principle of molecular currents to the parenchymatous cells themselves.

Inhibition is a late manifestation in the series of evolutional transformations of the species. We can not say exactly at what stage in the evolution of organic life it first made its appearance; it probably was initiated when the nervous system was being specialized and integrated so as to coordinate the vital functions of other organs. It is one of the means by which the nervous system can regulate the activity of each organ in harmony with the activity of the rest. Let us take an example: suppose that by some accidental stimulus the heart is beating extremely rapidly, thus propelling more blood than is needed for the normal action of vital organs; death would result if the congested organs did not send an afferent impulse to the cardio-inhibitory centre, which centre, reflecting the nervous wave in the opposite direction to the accelerator wave of the heart, reestablished a normal equilibrium. Survival of the fittest insures the establishment of such correlation of functions and provides for a further modification.

Life is only possible upon a due balance between the two currents all over the body, leaving a surplus upon the accelerator side.

ANTITOXINE RESULTS AND DIPHTHERIA DEFINITIONS.

By ADOLPH RUPP, M. D.

In the course of his presidential address, delivered at the (German) Seventeenth Congress for Internal Medicine at Carlsbad last April, Professor Quincke said all antitoxines were hypothetical bodies, which we knew only by their effects. The professor also said antitoxines were in this respect analogous to heat, ether, and electricity. Analogies do not exclude differences, and here there do exist great differences which the professor did not hint at. Even judging by effects, we do not know antitoxines as well as we know heat and electricity; and, besides, antitoxines are not measurable in the same way or with the nicety and exactitude that electricity, heat, and ether are. All that we know of antitoxines is that under certain specific conditions some sort of specific effect, besides a number of related but undesirable effects, becomes evident, particularly so in laboratory experiments on guinea-pigs. When antitoxines are injected into human beings in a state of health or disease, the effects are much more variable and uncertain, because the factors are unfixed, largely uncertain, and undetermined. And it is for such reasons that "satisfactory practical results have not thus far been obtained" in most diseases that have been treated with antitoxines. But, says Professor Hermann Biggs, of this city, "in only one disease can it be said that serum therapy has afforded us a perfectly satisfactory method of treatment—that is, in diphtheria."* And "the problems concerning diphtheria have been completely solved so far as its practical aspects are concerned." All this were a consummation devoutly to be wished. But the "perfectly satisfactory" and the "completely solved" may be modest terms in the vocabulary of a health-board official and a teacher of Professor Biggs's standing, and yet practically the words may be but official hyperbole to a general practitioner. And, besides, words are practically, for the health-board official and the teacher as well as for the working practitioner, not empty things to play a game of rhetoric with, but deeds and the causes of deeds. And words, like deeds, must justify themselves.

Professor Biggs says: "It is not easy to understand the mental attitude of those who still continue to oppose the antitoxine treatment of diphtheria in the face of the enormous mass of evidence in its favor"; and with all that fervor which characterizes a man thoroughly convinced of his own views, and impatient of all and everything to the contrary, he adds: "The past four years have supplied this mass of evidence in amount and character sufficiently convincing to compel the acquiescence of every intelligence, whatever may have been the previous prejudice." These indictments of those who do not agree with Dr. Biggs are not mild ones, and they indicate that much of the difference of opinion is of a psychological character. Other antitoxinizers maintain that those who do not agree with them are halting in an "entanglement of ideas," otherwise they would accept the antitoxine treatment, which is based on nothing but "convincing conclusions" which are so thoroughly "obvious."

These obvious, convincing conclusions, which are based on this great mass of evidence presented by Dr. Biggs, which is so often fallen back on by men who deny themselves the privilege of taking a look at the evidence and objections of the other side, just for the sake of a desirable peace of mind, are chiefly a finished construction of statistics which is to be accepted without question. Many practitioners who are indifferent about, or who do not use, or who oppose antitoxine in the treatment of diphtheria are not worried about their intelligence in not being compelled to accept the evidence of statistics. Statistics are always obvious as a matter of course; but the origins of statistics are not always obvious. Statistics are compounded and complex affairs. They always presuppose the definitions of the things they are expected to demonstrate. Statistics are not facts and conditions, they only illustrate in various ways different facts and conditions. Antitoxine advocates seem to forget that the disease diphtheria was not discovered when the Klebs-Loeffler bacillus came to light, and, furthermore, they also very often fail to practically distinguish between the causes of this disease and the disease processes as they develop themselves clinically, and its deadhouse anatomy. Furthermore, many practitioners as well as laboratory workers overlook the difference that exists between the data on which the clinician bases his diagnosis and the data on which he builds his theory of the disease. All these distinctions are important to bear in mind, if we do not wish for an entanglement of ideas that will lead to wrong conclusions concerning the therapeutical potencies of particular remedies, antitoxines or others.

If our statistics are to be of any consequence, we must be clear about our definition of diphtheria. What is diphtheria? It is not a disease of this nineteenth century. It is a disease two thousand years old. We are told by Bretonneau that Aretæus mixed opinions and frivolous explanations with a faithful description of diphtheria. This is quite human; we are all apt to look for the meaning of what we see, and it is held to be more creditable to our intelligence to be able to explain anything than to be merely cognizant of its existence. But in all the writers from Aretæus to the present time "we never fail to discover the familiar object, diphtheria, in the most incorrect drawing."

What are the signs which characterize this two-thousand-year-old familiar disease? The three fundamental facts are a sore or inflamed throat with pseudomembranous deposits and more or less vital depressions. All the other characteristics are variable or secondary. These two signs and the train of symptoms which are summed up as vital depression have had added to them the Klebs-Loeffler bacillus, as completing the fundamental diagnostics of diphtheria.

And yet, despite the great importance attached to the Klebs-Loeffler bacillus during the past few years in so far as the ætiology of diphtheria is concerned, diphtheria remains "perhaps the most obscure and complex of all the infective diseases in its causes and favoring conditions" (Creighton). We are obliged to remain satisfied with broad and tentative generalities. With the reputation of the Klebs-Loeffler bacillus as a cause—rather *the* cause—of diphtheria will go the reputation of antitoxine as its therapeutic agent. To the minds of many the Klebs-Loeffler bacillus explains everything connected with diphtheria, and is but a synonym for the disease. Clinical facts are not wanting which demonstrate that the Klebs-Loeffler bacillus is not the disease diphtheria as we know it in practice outside the laboratories, and clinical observations here, there, and everywhere are being recorded which make this notorious bacillus — the Klebs-Loeffler — quite saprophytic. However important a factor the parasite may be in laboratory investigations, it is now a clear fact that this bacillus is not diphtheria as we know it in the writings of disease painters of the past, and as we find it in daily practice.

During the past half year I had two boys sick with diphtheria at the same time, and occupying the same room and the same bed together. In the older boy, who was taken ill first, the Klebs-Loeffler bacilli were not found in the first culture, and his trouble was pronounced to be *not* diphtheria. In the second culture, taken two days later, the bacilli were found, and they continued to be found after clinical recovery. The younger boy was croupal and made us all feel anxious for forty-eight hours, and in none of three cultures, taken at intervals of two and three days, were bacilli discovered by the health-board bacteriologist. These instances, and others like them, happen every little while, and they do not imply any incompetency on the part of the bacteriologist. The trouble is with the disease and the bacillus. There are times when the bacillus is not found so often in clinical diphtherias as at other times. On the other hand, Sorenson reports that from 1895 to 1897 he had treated fifteen hundred cases of scarlet fever. In two hundred and forty cases the Klebs-Loeffler bacillus was found, and in two hundred and eight of these no symptoms of diphtheria or any of its sequelæ developed. In only thirty-two of these two hundred and forty cases of bacillary diphtheria were clinical evidences of diphtheria discovered.*

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* *Medical News*, p. 143, July 29, 1899.

Antitoxine advocates, like Dr. Biggs, Louis Fischer, and others, are fond of repeating over and over that "diphtheria is one of the most dreaded diseases in modern times." Such a statement fails by being inexact, and in so far untrue. Diphtheria has been so mild as to surprise the doctors—two to five per cent. mortality rates; and at other times and places it has killed ninety-five per cent. of its victims. Thus, in 1858, one of the worst epidemic centres was in and around Spalding, a market town situated in a flat grazing country within the fen district of Lincolnshire. A thousand cases were counted in and near Spalding, many of them mild, a small ratio of them gangrenous and mortal; one practitioner had two hundred cases and five deaths, another had two hundred cases and only two deaths, while another had a hundred and sixty cases and seventeen deaths (Creighton, *Epidemics*).

In the State of Michigan, in 1879, the death-rate was ten per cent.—one physician reporting seventeen cases and no deaths; and another physician in another part of this State reports: "Early in the spring we had a few cases of diphtheria, and about half the cases died. Then there was a lull. Later, the disease broke out again and the fatalities increased." Another doctor reports seven cases and one death. And so the cases varied in different sections of the State in this same year. Cases are reported which surprised the doctors because they got well. Here is one: Gangrenous form in a girl eleven years old. The throat had been a solid mass of gangrenous membrane, so much so as to make it impossible to discover the uvula. This girl made a good recovery. She was first sick on September 7th, and was discharged well on September 22d. Recovery surprised the doctor.

It is not a characteristic of true science to state only half of what is true. A half truth is a falsehood.

Not only do mortality ratios vary at different places during the same periods of time, but the character itself of the disease, its complications, and its sequelæ also are different and variable during different epidemics. This is an important fact and one that should not be overlooked when definitions of this disease are framed and statistics are constructed. For instance, in 1876 Dr. Francis H. Stuart, registrar of vital statistics in Brooklyn at that time, tells us that the diphtheria which prevailed in Brooklyn in 1876 produced a marked depression of the nervous system, and that death was oftenest caused by exhaustion. But in 1877 the type of the disease changed somewhat, and the fatal result was brought about by obstruction of the air-passages most frequently.* Not a few antitoxine advocates try to add to the brilliancy of antitoxine therapy and the glory of their diphtheria statistics by pleading that many of their patients whom they have seen only on the paper report sheets have been poor, etc., and have lived in unhealthy surroundings. But that is a poor plea. The bodies of the poor have become at least somewhat habituated to their surroundings, and, in the next, place diphtheria slights them sometimes on its rounds of destruction. In the *Boston Medical and Surgical Journal* for May 22, 1879, it is reported that the epidemic of diphtheria for that year in Boston was very destructive, and yet the unhealthiest district naturally was least ravaged by it. The Klebs-Loeffler bacilli had on their dress suits that year! This district was densely populated, filthy, and insalubrious. And is it not well known that country districts are at times greater sufferers than overcrowded cities? All these instances can be easily multiplied from literature and the experience of practitioners who have been in practice for twenty years or more. And such instances are some of the facts which are not accounted for in bacillary definitions and statistics. And what the bacillary definitions fail to take notice of—not entangled ideas, but facts—makes many of us skeptical when great masses of statistical "evidence" are presented for admiration or examination. Not only do these fundamental historical facts of the disease make us halt and withhold our enthusiasm, but what we see practitioners do and hear them say also has its effect. Practitioners base their judgments on inferences drawn from the observation of cases that are seen from day to day, and not on aggregate reports of cases that have never been seen. Here are a few judgments from practitioners who use antitoxine.

One doctor had three cases of diphtheria in the same family at about the same time. He gave antitoxine to one child only. The two others he treated without antitoxine. And the antitoxinized child had the hardest time of it. All three got well. He uses antitoxine because it gives him peace of mind. Another physician thinks antitoxine does do a little good. Another knows of no other good it does than that it gives him peace of mind. One does not find among doctors the same amount of enthusiasm that health-board authorities inundate us with. Only those who find "medical progress like the rush of a railroad train" fail to appreciate these characteristics. But progress, even in modern medicine, is only a slow movement from point to point. Medical men did not begin to think with the advent of bacteriological experimentation. Laboratory work is a thinking search for reals that are yet unseen, and, like all kinds of thinking, it is an experimental process which attains only tentative results, for, to quote George Henry Lewes: "Every real is the complex of so many relations, a conjuncture of so many events, a synthesis of so many sensations, that to know one real thoroughly would only be possible through an intuition embracing the universe." * We live and we need not be hopeless. And if we can not see all things and conditions at once we should not shut our eyes against what is already discovered, fundamental facts, which are the concrete verities of clinical and historical diphtheria. And if we go slowly and thoughtfully, we shall not fall into the pseudo-scientific bombast that iterates and reiterates the *idea* that "the problems of diphtheria have been completely solved so far as its practical aspects are concerned," and there will be no need of heeding the advice of Josh Billings, "You'd better not know so much than know so many things that ain't so."

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* *Internat. Centralbl. für Laryngologie*, p. 409, September, 1899.

* *Transactions of the Medical Society of the State of New York*, 1878, pp. 221, 222.

406 West Thirty-fourth Street.

PONY, MONTANA, AS A RESORT FOR CASES OF PULMONARY TUBERCULOSIS.

By JOHN C. SCHAPPS, M. D.,
PONY, MONT.

Sixteen years ago, a young man employed in a mercantile house in New York city, having contracted pulmonary tuberculosis, with frequent and severe hæmorrhages and considerable loss of weight, came to Montana and engaged in ranching. His improvement was immediate and his restoration to health rapid and complete. He became much stronger than at any previous time in his life, and thirteen years later was still performing the hard work of farming, lumbering, and stock-raising.

At this time the writer,† residing in Brooklyn, contracted the same disease, and, following the above example, removed to the same place. Both lungs were markedly affected. There were afternoon rise of temperature, loss of weight, and many tubercle and other bacilli in the sputum. He came in summer and took up his abode in a tent, spending much of his time in the open air. In this case, also, an immediate improvement resulted. The gain in health continued as the weather became cool, and in winter much benefit was experienced from sleeping in the unheated tent, even when the thermometer stood at − 15° F. Five months after his arrival he weighed more than ever before, and his health was in every respect excellent. One tubercle bacillus was found in twenty-five specimens examined. He went to Colorado in January and engaged in practice. The altitude and topography were approximately the same as in the part of Montana he had left. While the winter lasted he did fairly well; but when summer, with its heat and sandstorms, came, he lost in weight and strength, until seven months after leaving Montana he was thinner and weaker than when he came west, the pulmonary lesions had assumed greater proportions than ever, and the number of bacilli was greatly augmented. He returned to Montana, and at Pony was taken seriously ill with typhoid fever contracted in Colorado. For some time he was in great danger, but not only recovered from the typhoid but made a marked improvement in pulmonary condition, and gained steadily in general health. This continued as before, in winter as well as summer, and now, two years and a half after returning from Colorado, or three and a half after leaving New York, he is heavier and stronger than at any time during his residence in the East, is engaged in active professional work, and easily able to meet all the demands made upon a country doctor's strength and endurance.

This double test of Montana's climate as compared with that of Colorado led to the coming from that State to this of a third patient whose case is interesting as presenting a typical experience with three places.

The patient, a young clerk and an overtrained athlete, also contracted tuberculosis in New York, in 1896. He spent from June to October of that year in the Adirondack Mountains, and returned to the city, apparently well, and with a gain of twenty-five pounds. A few months later he had a perirectal abscess, which was cured by operation. The following summer he had relapsed, or become reinfected, and returned to the Adirondacks, having lost twenty pounds. Upon this occasion he did not improve in weight, but he felt better, and in the fall went back to his desk. In February he removed to Colorado, and resided in those parts commonly regarded as the most favorable for cases of that sort—Denver and Colorado Springs—and, although he did not have to work for a living, and was able to procure the best of everything necessary for his welfare, no improvement took place. He experienced a severe attack of what he believes to have been pleurisy, and the loss of weight was constant. In October, 1898, after an eight-months' residence in Colorado, he came here in greatly reduced condition. His weight was one hundred and sixteen pounds (in his prime he had weighed one hundred and fifty), pulse 120 nearly all of the time, cough severe, expectoration profuse, and afternoon temperature from 100° to 101.5° F. or more. There was a large cavity in one lung, there was extensive consolidation of the other, and the laryngeal involvement was noticeable.

The history and present condition made the prognosis, of course, unfavorable. The patient was directed to remain in bed, and care was taken to admit sunlight and fresh air freely to the room. In a few weeks the pulse had been reduced to between 80 and 90, the temperature was normal, cough and expectoration were much less, and there was a general improvement in health. He was then allowed a gradually increased liberty, and encouraged to take short horseback rides over the hills. Three months after coming here he had made substantial gain in weight and strength, coughed only in the morning, and was in local condition and in general health better. When winter came, he slept with open window and without fire in the room, even when the outside temperature was many degrees below zero. Upon the days following these cold nights his cough was less than ever, and he began to fear that the summer would put an end to his improvement. With the buoyancy of returning health he became reckless, intolerant of restraint, and would no longer submit to the prescribed regimen of rest, which was essential, because of his overtaxed heart and the altitude (5,700 feet), and further treatment was not possible. After a while his fever returned, and some loss of weight and general decline ensued. But he is still, ten months later, or more than a year after coming here, able to be about, and apparently not much worse than upon his arrival.

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* *Problems of Life and Mind*, vol. i, p. 313.

† *Brooklyn Medical Journal*, May, 1899.

The gravity of tuberculosis is an indication for the most radical measures possible, and these are commonly held to include a change of residence. For, although in some instances cases have been cured in the places where the disease was acquired, and in others disappointment has resulted from a removal, it still remains a self-evident proposition that an individual whose susceptibility to tuberculosis has been demonstrated incurs a great risk in remaining in or returning to the place where such infection abounds. It may, indeed, be laid down as an axiom that *the place where a person contracts tuberculosis is the place where that person must not reside.* Such a one should put the greatest practicable distance between himself and infected localities. The disadvantages of resorts within a few hours' journey from a large city are that they are not out of reach of infection, either through the atmosphere or by more palpable means of transmission, such as visitors, and particularly that the old place of residence is too easily accessible to the patient. Such a change can rarely be made permanent, or even maintained long enough to effect an arrest of the disease. The home ties—domestic, social, business—are not severed, but stretched until their tension is strongly felt; and when the patient experiences the relief of restored health, he forgets his fright, returns to his old place, and, as in the case last cited, relapses or becomes reinfected. This is a common occurrence. A man from New York city can not and will not spend the rest of his days in the North Woods. *To remove a short distance, or for a limited time, is simply trifling with a deadly disease.*

But when a patient first learns that he has consumption he will do anything and go anywhere that offers a hope of cure. Impossibilities then become possible. It is then that a removal to a place of greater safety should be advised. The consciousness of remoteness from danger is itself a material help to a cure; the length of the journey diminishes the temptation to return; the reminders of home are fewer, and are replaced by new impressions; new conditions of life have their attractions. The patient will probably remain at least long enough for a cure, if such is possible; or, inspired by his recovery with a kindly feeling for the place, will take advantage of the opportunities offered by a country in process of development and there take up his permanent abode.

This has occurred in many instances in this little village sheltered among the foothills of the Rockies. For more than thirty years patients with pulmonary disease have come here, recovered, remained, and are now perfectly well and engaged in active work of all kinds. It is remarkable that, although little or no precaution with reference to infection has been taken, the disease has never been communicated here. I am inclined to attribute this immunity to the dry, cold winters as well as to the altitude and the prevalence of sunshine.

Years ago, the face of the consumptive of the Eastern States was turned regularly toward the equator, and Florida was a matter of course. It has gradually been learned that while much comfort for a weak body may be found in a warm climate, and for advanced cases where no cure is contemplated it may perhaps be the best, a cold one is more curative. The late author of *Camp Lou* was among the first to urge the advantages of the Adirondacks in winter, and then to fall a victim to their proximity to New York city. The consumptive's compass, which first pointed to the south, has veered westward and then northward, and now the antituberculous possibilities of Iceland and even Spitzbergen are under consideration. I believe that cold air acts upon the diseased lung as does the cold pack applied to the chest in acute pneumonia, but more directly. It is probable that inhalations of refrigerated air may be of service in both conditions, and an important use for liquefied air may be found in this connection. I am not aware that it has been tried.

To the Eastern invalid the thought of cold, conceived in terms of that of the Atlantic seaboard, is most unwelcome. But in a clear, dry, sunny atmosphere one can actually enjoy a temperature which would be intolerable in combination with humidity. No one who has survived Eastern winters has anything to fear from those of the Northwest. Severe cold continues only for a day or two at a time, and this region has the merit that in summer the days are seldom, and the nights never, uncomfortably warm.

In our large cities the disposal of the patient, viewed from the standpoint of the public welfare, is occupying much attention. Instead of sending him to a place near at hand, keeping him for a while, and letting him return to become reinfected and to reinfect, it would be better to make his treatment a national affair, and to provide places of residence in parts of our vast country remote from large centres of population, and not easily accessible. The most desirable places are fortunately so situated. The government owns an abundance of unoccupied territory in extremely favorable locations. Abandoned army posts might easily be converted into admirable sanitaria. If the necessary comforts, luxuries, and pleasures—in themselves highly conducive to recovery—were provided, no compulsion would be necessary to induce patients to make use of them. The hope of cure of an otherwise fatal disease; the unwillingness which most persons, when properly instructed, feel to remain a source of danger to their own, the pressure of public opinion, the desire for change of scene and for rest from the daily treadmill which is such a potent factor in the propagation of the disease, would be more efficient than any arbitrary measures. Forcible retirement, possible in an acute infectious disease because of its brevity and the disability of the patient, can hardly be extended to cover the case of a person infected with tuberculosis or known to be susceptible to it. Some have acquired it in the discharge of duty, many in services of love, and all have acquired innocently. Nothing, then, is too good for the patient—not even liberty. And the case is one of liberty or death. The sufferer can not be dealt with as a criminal. In view of the havoc which the disease has wrought, government provision for the family of a poor man would enable him to stop work while cure was possible, and be a measure of strict economy. Inducements could be provided for convalescents or patients under observation to take up their temporary or permanent abode in parts in which, by reason of climate and sparseness of population, they would be less dangerous than in places where there are more people to infect, and where the climatic, industrial, and social conditions are favorable to the disease.

STAPHYLITIS AND ELONGATED UVULA.

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The uvula being comparatively small, a very brief space is usually given it in text-books. Although quite diminutive and seemingly insignificant, this little member, when increased in size to beyond the normal, can give rise to very distressing symptoms. They are not only distressing to the patient, but also to the general practitioner, who perhaps does not recognize that the seat of trouble in some obstinate cough is located in the uvula, and not in bronchial tubes or larynx.

The uvula enlarges in one of two ways: (1) It may become larger in all its diameters, as in the case of an acute staphylitis; or (2) it may simply enlarge in its long diameter, as is seen in cases of elongated uvula. Staphylitis may be either acute or chronic.

Acute staphylitis is often the result of taking cold, the first symptom noticed by the patient being a sense of fullness in the throat; pain is often a constant symptom.

Upon examination we find the uvula red and swollen in all its diameters. In some instances, not only is the uvula involved, but the staphylitis seems to be but a part of an acute attack of pharyngitis. The pharynx is covered with a glairy mucus; deglutition in some cases is painful, while in others scarcely any symptoms are complained of by the patient. An acute attack of staphylitis may be caused by the absorption of some drug into the tissues of the nose or pharynx. A case to illustrate this last condition is the following:

X. Y., a physician, perfectly healthy in every respect, had an attack of nasal hæmorrhage, which was quite persistent. The attending physician prescribed a powder of antipyrine, to be insufflated into the nose. It arrested the hæmorrhage. Twelve hours later I saw the patient who had by that time a typical acute staphylitis of drug origin. The uvula was œdematous and enlarged to three or four times its normal size; there was pain on swallowing, and the voice was thick. The treatment consisted in spraying the nose and throat with a cleansing spray of Dobell's solution, which helped to cleanse the mucous membrane of thick mucus and also of any remaining particles of the antipyrine which had caused the trouble. A speedy and uneventful cure resulted.

Quinsy is often the cause of an acute staphylitis, which subsides upon treating the quinsy.

The treatment of an acute attack of simple staphylitis generally calls for nothing but a spray of Dobell's or Seiler's solution applied to the pharynx. In conjunction with this treatment, a brisk cathartic and attention to the digestive apparatus are all that are indicated. If the uvula is very œdematous it may be snipped with a pair of sharp-pointed scissors in a number of places, which, by the escape of serum, reduces materially the congestion. If the uvula is of such large dimensions that scarification is of no avail and breathing is becoming embarrassed, then amputation is indicated.

Chronic staphylitis is generally associated with other chronic disorders of the air-passages, and by appropriately treating these conditions the chronic staphylitis disappears. Excessive tobacco smoking is a great factor in producing a chronic inflammation of the uvula.

Elongated Uvula.—A uvula is said to be elongated when it has become of such a length as to cause trouble. This is rather indefinite, but I have seen uvulæ which were long enough to have caused a great amount of discomfort, and yet they gave rise to no symptoms whatsoever. Again, I have seen patients' uvulæ of fairly normal length, but, nevertheless, when the tip was amputated the distressing cough ceased.

There are many cases of elongated uvula which give rise to symptoms, and in them, upon examination, no one could fail to diagnosticate correctly; the symptoms are there, the elongated uvula is there, and upon amputating a portion of it the symptoms vanish. These are typical cases of elongation. There is, however, a class of cases, rare perhaps, but just rare enough to trip us up if we are not very careful and on our guard. I speak of cases where the uvula seems to be normal, and yet upon close examination we find that the extreme tip is quite hypertrophied and hangs lax; a sudden motion perhaps on the patient's part will demonstrate this fact by the uvula descending quickly and the hypertrophied tip impinging on the base of the tongue.

In all cases of cough the uvula should be examined, especially by means of the probe, to determine whether there is hypertrophy at its tip, in which case a small bit of flabby, relaxed connective tissue, covered by mucous membrane, will be easily appreciated by the examining probe. In nearly all cases of elongated uvula there have been, in my opinion, at some time previous one or more attacks of staphylitis; these attacks cause an hypertrophy of the tip of the uvula, similar to that of hypertrophic rhinitis, where we find a fibrous hypertrophy of the tissues covering the middle turbinal, and caused in the same way by repeated attacks of acute rhinitis.

Treatment.—The treatment of elongated uvula by applications is generally considered ineffective, and it has proved to be so in my experience; but, nevertheless, there have been several cases in patients who have absolutely refused to be operated upon in which I used a daily application of the tincture of chloride of iron with great success; these cases, it should be mentioned, were not of the most marked elongation, and there was only a very moderate degree of hypertrophy. In a well-marked case of elongated uvula applications are of no use whatever, and amputation of the offending portion is the only curative measure open to us. It would seem that to snip off the tip of an hypertrophied uvula would be a very easy procedure, and that no operation could be simpler. More than one case of a haggled uvula stump has come under my observation, and in some instances complete extirpation of the organ. The practice of removing the uvula entire is unnecessary and uncalled for.

Various devices have been made for amputating the uvula, and I shall simply enumerate them in order of preference: 1. Forceps and scissors. 2. Uvula scissors with teeth for grasping the uvula and holding it while the blades are cutting. 3. The guillotine. 4. The cold snare. 5. The electro-snare. The use of the first of these devices—namely, the forceps and curved scissors—has been the most successful and easiest method in the cases with which I have had to deal; but there are some surgeons who prefer one of the other named methods, and say that the result with them is as good as with forceps and scissors.

Technics of Operation with Forceps and Scissors.—A good plain thumb forceps about six inches long, and a pair of scissors slightly curved on the flat and about six inches in length, are the two instruments used. A good light is of the utmost importance. The pharynx is swabbed with a four-per-cent. solution of cocaine for two reasons: first, to allay the sensibility to gagging due to the tongue depressor; and second, for a *moral* effect upon the patient. I doubt if cocaine makes the operation less painful (if it is properly done) than it would be without its use. In some patients the operation can be best done by using no tongue depressor, as its presence seems to be a great source of gagging, but in most cases a depressor is of great advantage.

The pharynx being well illuminated, the tip of the uvula is grasped with the thumb forceps; by dipping the tips of the forceps in a solution of tincture of chloride of iron, a better grasp will be obtained on the uvula, and the possibility of its slipping from the forceps blades will be lessened. The uvula should be put *very slightly* upon the stretch by pulling it forward and downward, care being taken not to use too great traction, thereby cutting off a larger portion than necessary. The scissors are introduced with the concavity of the blades uppermost; the handles are slightly depressed, and with one cut the hypertrophied tip of the uvula is severed. In most cases the extreme tip is all that it is necessary to amputate, but in some instances of elongation a larger portion may have to be excised.

After the operation the uvula generally contracts, so that the mere clipping of the extreme end is sufficient to relieve the distressing symptoms due to its impingement on the base of the tongue. In the majority of cases there is practically no hæmorrhage to speak of, a mere drop or two of blood being all that is seen. In very few cases persistent bleeding occurs, due either to cutting the uvula too near its base and thereby severing a large arteriole, or to the peculiar condition known as hæmophilia, which should always be well looked into before beginning the operation. If the hæmorrhage is severe enough to demand treatment, a gargle of hot water may be given the patient, or a lump of ice may be held in the mouth. In very obstinate cases of bleeding, the electro-cautery applied to the bleeding area, or the use of an artery clamp, is the only means of controlling the hæmorrhage. When the bleeding has been controlled, the patient should be advised against coughing or clearing the throat, thereby starting a fresh flow of blood.

The after-treatment usually consists in giving the patient liquid food for twenty-four hours after the operation. Ice cream is very good to top off the first meal after a staphylotomy. The pharynx should be sprayed with Dobell's solution every day for three or four days as a cleansing agent. Complications arising from a properly performed staphylotomy are rare. If there is one cardinal point to be kept in mind during the operation, it is to sever the offending portion with *one cut* of the scissors, as a smooth-cut surface is the ideal one in the surgery of the nose and throat.

170 WEST EIGHTY-FIFTH STREET.

CLINICAL MEMORANDA ON OTITIS MEDIA SUPPURATIVA CHRONICA

A CLINICAL LECTURE.

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GENTLEMEN: It is my purpose to-day to present to you a *résumé* of our clinical study within the past few months of chronic middle-ear suppuration and its treatment. We have been especially favored with an abundance of clinical material, and are prepared to collect the data for the formulating of rules to guide us in the treatment of this form of otitis, which is and has been the *bête noire* of the aurist.

For convenience of study we have divided our cases into four clinical groups. The *first group* comprises those cases in which the chronicity is more or less influenced by a morbid condition of the nose and postnasal spaces and are largely due to simple retention of the morbid secretions and saprophytic putrefaction.

In this class of cases we have to deal with the following pathological conditions—viz., hyperæmia of the mucosa with progressive round-cell infiltration and a pyogenic process.

In the earlier stages of chronicity this pyogenic process is usually limited to the tympanic cavity, the accessory spaces being only slightly if at all involved.

Second Group.—Where the chronicity is due to more serious pathological changes—viz., hypertrophy of the mucosa, round-cell infiltration, hyperplasia, granulations, and polypoid degeneration. As a result of the hyperplastic process, we have degeneration of mucosa extending to and involving the periosteum, interfering with the protection and nutrition of the ossicles and bony walls of the tympanum and accessory spaces, giving rise to foci of necrosis and caries.

Third Group.—This comprises those cases in which there are evidences of progressive involvement of the mastoid antrum and the pneumatic structure of the mastoid process, and cholesteatomatous formations, the subjective and objective phenomena of which you have been made familiar with.

Fourth Group.—Here we place those cases whose chronicity is due to some constitutional dyscrasia—viz., syphilis, tuberculosis, or the self-intoxications following diabetes, Bright's disease, etc.

In this connection let us recall briefly a few factors in the distinctive diagnosis of chronic suppurative otitis media—viz.: 1. If the chronic suppurative otitis media, although of recent date, was not preceded by pain or other manifest symptoms, except the discharge, a tuberculous ætiology is suggested. 2. If in the presence of chronic suppurative otitis media, on testing with the tuning fork, there is found to be considerable diminution of bone conduction, this would indicate disease of the labyrinth associated with the chronic suppurative otitis media, and in all probability secondary to it.

From our clinical experiments in the past few months we may formulate the following rules and guide for a satisfactory treatment of chronic suppurative otitis media. A complete discussion of the therapeutic and surgical measures would involve of necessity much repetition and take us beyond our time limit. Therefore we shall give only the more salient features of the treatment as we have found to give the best results.

The object of the treatment of a chronic suppurative otitis media is to *first* secure and promote asepsis; *second,* to insure free drainage from the tympanum, and also the accessory spaces when involved; *third,* to eliminate the ætiological factor or causes of chronicity.

The first indication, asepsis, or "surgical cleanliness," may be secured by syringing or irrigating the ear with a warm, unirritating, sterile antiseptic solution.

Of the many therapeutic agents that fulfill this requirement, we have found the sodium salts to answer best, because they are compatible with the secretions, have solvent properties, and are non-irritating. Our reasons for preferring in our clinic the sodium salt of nosophene, called antinosine, we shall speak of later on.

For aseptic reasons the syringe must be sterilizable; the cleansing solution should invariably be prepared with sterilized water, and used as warm as the patient can comfortably bear it.

Politzerization should precede and follow the use of the syringe, so as to force out of the tympanic spaces the morbid secretions or any residuum of the irrigating solution. This should be followed by mopping out with wisps of absorbent cotton, previously sterilized by the flame of a spirit lamp, carried into the ear by probe or forceps, as exemplified in this clinic. It is also very important to remember that the cleansing of the nose and postnasal space is imperative before the use of the Politzer bag.

This is followed by the instillation of alcohol, fifty to ninety per cent. (according to the tolerance of the patient), for the purpose of dehydrating the tympanum and reducing engorgement of the mucosa. The alcohol drops (ten to twenty) should be left in the ear from five to ten minutes, after which the ear is mopped dry with sterilized cotton. This is followed by the insufflation of (not too large a quantity of) an unirritating and drying powder, like boric acid and nosophene, equal parts, or nosophene alone (my reason for preferring nosophene I will refer to later on), and the auditory canal loosely packed with sterilized gauze.

The packing with gauze not only promotes drainage but also prevents infection from without. This is our "preliminary routine treatment" or dressing, and when correctly done should accomplish all in simple and uncomplicated cases. This dressing should be renewed as soon as there is a suggestion of moisture.

This is also known as the "wet treatment," in contradistinction to the "dry treatment," the technique of which is the same, with the exception that irrigation or the use of the syringe is dispensed with. This "wet treatment" may be used in all cases as a preliminary routine treatment except where there is evidence of a desquamative process, disclosed by the presence of cheesy and epithelial masses, indicating the presence of cholesteatoma, in which case watery instillations are injurious, for reasons you already have been made familiar with. The treatment recommended under these circumstances is the instillation of carbolized glycerin (1 to 10). After the removal of the cholesteatomatous *débris* redevelopment may be prevented by the use of five per cent. boric acid or two per cent. salicylic acid in a fifty- to ninety-per-cent. solution of alcohol, according to the tolerance of the patient. In the event of discharge from the middle ear having been cured, or nearly so, the "dry treatment" is to be continued for some time at longer intervals, which will in all probability be all that is needed for a cure of those cases that comprise our first group.

If, however, this routine treatment has been faithfully carried out for a reasonable time, and has failed to cure or benefit, then must we look for the various causes of its chronicity. If the size of the perforation obstructs drainage or interferes with the object of our treatment, it must be enlarged even to the removal of all of the tympanic membrane; granulations may be removed by the use of perchloride of iron or chromic acid, or by the persistent use of alcohol drops. It is better to remove them with the curette or snare or both, followed by the "dry treatment," as exemplified in the clinic.

If there is necrosis of the ossicles, an ossiculectomy is indicated. If, in addition, we find caries or necrosis of the walls of the attic or antrum, with obstruction to drainage from the attic, exenteration of the tympanic and epitympanic spaces is called for. This may be accomplished by an intratympanic operation, or, better still, one of the more radical surgical procedures.

In mastoid involvement early operation is now universally indorsed. Delayed action frequently leads to extended invasion and largely influences post-operative results.

Conservatism is a worthy quality when it is supported by clinical experience, which is the criterion for rational treatment. Therefore, when faithful and correct treatment has failed to accomplish a cure of chronic suppurative otitis media, even if there are no manifest symptoms of serious destructive processes within the attic, antrum, or mastoid, we must without hesitation resort to more heroic measures.

In conclusion, let us recall our experience with two very valuable agents we have learned to use with much satisfaction—antinosine and nosophene. Antinosine is the sodium salt of nosophene. It is non-irritating, cleansing, and germicidal. Its free use is harmless. The color of the antinosine solution is somewhat objectionable, but does not stain permanently. When it is used as a spray, or for irrigation of the ear or nose, the patient should be informed of its red color to prevent shock on account of its resemblance to blood. According to Dr. Perekhan,[*] we make a stock solution, with distilled water and glycerin, equal parts, from which we prepare a solution for immediate use, the strength varying from two to five per cent. Of the various powders recommended for insufflation, although boric acid has held its own because of its natural qualities, nosophene has in our hands proved to "fill the bill" admirably. It possesses decided desiccative and cicatrizant properties. It has shown itself hæmostatic and sedative [†] to the nasal mucosa. Its bactericidal and drying effects have been testified to in our clinical use of it, not only in the ear but in the nose.

In conclusion, I wish to remind you of the important relationship between the nose and the ear, and of the great benefit we have derived from the use of Theisen's formula [‡]—

℞ Sodii bicarb., } āā .... gr. j;
Sodii biborat., }
Amyli .... gr. $\frac{1}{3}$;
Acaciæ .... gr. iv;
Nosophen ....q. s. ad ʒss.—

in those cases of exacerbation of the chronic suppurative otitis media due to an intercurrent acute exacerbation of rhinitis chronica.

126 State Street.

A TREATMENT FOR ACUTE SEROUS SYNOVITIS PERMITTING OF JOINT FUNCTIONS.[#]

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In October, 1895,[‖] and in February, 1896,[△] the writer reported a simple method of treatment for acute serous synovitis of the knee and other joints, which method, at that time, he had successfully employed for about a year. Since these two publications he has had no reason whatever to renounce the treatment; but, on the contrary, as he became more experienced and adept in its application, has had greater cause to continue its use.

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[*] Perekhan. *Chicago Medical Record*, January, 1899.

[†] Dr. Seifert. *Wiener klinische Wochenschrift*, 1895, No. 12.

[‡] Theisen. *Albany Medical Journal*, vol. xviii, No. 1, January, 1897.

[#] Read by title at the thirteenth annual meeting of the American Orthopædic Association.

[‖] *American Medico-surgical Bulletin*, October 1, 1895.

[△] *St. Louis Medical and Surgical Journal*, February, 1896.

The method might be called the *compression treatment.* In his hands it has proved far more satisfactory than the old ones of rest and immobilization, hot or cold packs, evaporating lotions, etc. Its application is quite simple, though considerable care and judgment should be exercised. The principle is to fill all depressions about the joint with cotton, and then to apply strips of rubber adhesive plaster in such a way as to entirely encircle the joint and several inches of the limb above and below it, so as to make firm and equable compression. The joint in which it has been found to be of the greatest value, and in which the results both immediate and permanent are truly remarkable, is the knee. This, moreover, is the joint by far most commonly affected by acute serous synovitis, whether produced by injury, exposure to wet or cold, overexertion, or some indefinite cause.

As an illustration, I will detail one of the many cases treated by this method in the past four years:

A carpenter, aged thirty-seven years, struck his left knee, not severely, against a work bench. He felt slight pain at the time, though it did not inconvenience him enough to make him quit work, at which he continued until the close of the day. The next morning his knee felt somewhat stiff and sore, and he observed that it was slightly swollen. He, however, could get about, and attended to his work as usual. During the day the swelling increased and the joint became very painful, and compelled him, toward the middle of the afternoon, to keep off of his limb entirely. When I saw him the next day, forty-eight hours after the accident, the left knee was two inches and a quarter larger in circumference than the right; the joint was filled with fluid, as evidenced by fluctuation and "riding" patella; the skin was hot; there was great pain; the slightest attempt at movement caused intense suffering, and the parts were exquisitely sensitive to touch. The leg was flexed at an angle of about a hundred and thirty-five degrees to the thigh.

Treatment.—A pad of cotton was placed in the popliteal space and the parts were covered with a close-fitting stocking-leg. Over this stocking protection the adhesive plaster was applied as follows: A strip about an inch wide and thirty inches long was made to encircle the leg about six inches below the patella and carried upward until the somewhat conical shape of the calf caused it to materially alter its course. Another strip was then applied overlapping the first; above this another and another, and so on, ascending the leg, over the patella, and up the thigh to about six inches above the upper margin of the patella. Each strip of plaster was drawn very tight, so that the joint and several inches of both the thigh and leg were incased in a firm adhesive-plaster support, which exerted considerable pressure on all sides. A muslin bandage was applied over all to firmly press the layers of plaster together.

The patient winced considerably during the application of the dressing, but after the same was once firmly applied the change was almost magical. The pain was entirely relieved and a sense of security was imparted to the joint. After some hesitation he was induced to use the limb, and, to his surprise, he could walk without pain and with only such lameness as was caused by the flexed position of the limb and the restriction of the bandage.

Twenty-four hours later, as the dressing was quite loose, on account of the swelling having considerably subsided, it was removed. Measurement showed that the swelling was only an inch, a decrease of an inch and a quarter. It was also found that the knee could be fully extended. As the dressing became loose, slight pain reappeared in the knee. A new dressing was applied to fit the changed contour and extended position of the knee and the patient felt well enough to take up his work again, and he continued it throughout the whole course of treatment. Two days later, the swelling having gone down to half an inch, a new dressing was applied. Other dressings were applied on the tenth and sixteenth days, and the patient was discharged, cured, twenty-two days after the accident, though he was practically well, so far as the usefulness and painlessness of the limb were concerned, one day after the first dressing was applied.

I have treated altogether by the adhesive-plaster method a hundred and fifty-six cases of synovitis, most of them at the Orthopædic Clinic of the Missouri Medical College. The one cited above is not exceptional; the result in the majority was equally gratifying. I have, in fact, almost entirely discarded the older methods in favor of this.

In place of the stocking underdressing one of glazed sheet cotton (cotton wadding) may be used. Often I place the plaster in direct contact with the skin, especially when the swelling is slight or after it has considerably subsided. This makes a somewhat more efficient dressing, as a better hold and firmer compression can be secured. However, when it is applied in this way, the skin, after a while, frequently becomes sore and compels one to resort later to a protective underdressing.

The adhesive plaster should be applied very tightly. In the knee and ankle there is little danger of swelling from venous constriction below the dressing. In the rare instances where this does occur, the constriction will be found at the lower edge of the dressing; a few nicks here and there will remedy the fault. At the elbow, on account of the many superficial veins of the upper limb, swelling is of frequent occurrence, and it is often found necessary to support the forearm, and even the hand, with a muslin or flannel bandage to the point where the plaster compression begins.

One of the most remarkable results of this treatment is the rapid absorption of effusion. In a joint swollen two inches the swelling frequently in the course of twelve or twenty-four hours diminishes to an inch or even less. Thus a change of dressing is nearly always necessary at the end of the first twenty-four hours. Subsequent absorption is less rapid.

Wherever flexion was present the dressing was applied to the joint in the position in which it was found, and from day to day, as the dressing was renewed, the limb became much straighter. In this way forty or fifty degrees of flexion were often reduced within two or three days.

When the dressing is to remain on a long time, it is well to make the support stronger by applying another layer or two of plaster.

The chief advantages of this dressing are its small weight, the immediate relief from pain that it affords, and, most important, that it permits the joint functions, motion and weight-bearing, without injury. A number of my patients have been doing hard labor a day or two after the dressing was adjusted to an acutely inflamed knee joint. The time required for complete recovery is anywhere from a few days to two or three weeks. I certainly would not recommend active exercise when perfect rest can *as conveniently* be secured. I have, however, observed no practical benefit from non-use of the limb in the cases where it was enjoined. Those in which exercise was permitted did, apparently, just as well. Most of the patients treated at the college clinic were day laborers who desired treatment there on account of poverty. To them enforced idleness would have meant neglect of home and family. As a rule, I permit my patients to *use the limb in any way that does not cause pain or discomfort.* On four occasions, after aspirating the knee joint, I have applied the adhesive-plaster dressing and allowed the patient to walk, without his experiencing any subsequent ill effects.

The results of treatment may be accounted for as follows: When a joint is filled with fluid there is distention of its capsule; a stretching or tendency to pull asunder its ligaments. This pull upon or straining of these soft structures causes the pain. The plaster, firmly bearing on all sides of the joint, supports the overstretched ligaments and, by compacting all the tissues and fluid within its grasp, reduces the lumen of the engorged blood-vessels, thus relieving congestion. Perhaps the joint fluid, which can not be compressed, by being squeezed on all sides, is hurried into the circulation. This would account for the rapid disappearance of effusion.

This treatment for acute serous synovitis suggested itself to me after a two years' successful trial of the now well-known adhesive-plaster treatment for sprain of the ankle. The treatment for ankle sprain was first introduced to the American profession in 1893 by our fellow member, Dr. V. P. Gibney,* who credited Mr. Edward Cottrell, of London, with having originated the treatment in 1885. However, this method of treating sprained ankles was used over forty years ago by one Peter Hood, who described it in a pamphlet published in 1858 by Messrs. Churchill, London. His son, Wharton P. Hood, also referred to the treatment in a book *On Bonesetting*, published by Macmillan & Co. in 1871. I also find mention of it in the *System of Surgery* by Gross, published in 1871, and in *A Manual of Surgery* by W. Fairlie Clarke, American edition, William Wood & Co., 1880.

We are indebted to the *sprain treatment* for the suggestion of adhesive plaster as a *joint support;* but it had not been employed in the treatment of *acute serous synovitis* previous to my publications, to which reference has already been made.

705 North Channing Avenue.

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* *New York Polyclinic*, January, 1893.

Therapeutical Notes.

Pills for Gouty Neuritis.—The *Gazette hebdomadaire de médecine et de chirurgie* for December 21, 1899, gives the following:

℞ Colchicine		$\frac{15}{1000}$ of a grain;
Sulphate of quinine,	of each,	$\frac{9}{10}$ " "
Extract of colocynth,		

M. For one pill. Five daily may be taken.

For Chaps, etc.—The *Journal de médecine de Paris* for December 3, 1899, attributes the following to Vigier:

℞ Tannic acid	7½ grains;
Glycerin at 30	300 "
Hydrolate of roses	1,500 "

Dissolve. The hands are to be rubbed morning and evening with a few drops of this solution to render the skin supple and disperse the chaps. It is useful for chapped lips.

An Antiseptic Vinegar.—The *Riforma medica* for October 27, 1899, gives the following formula:

℞ Salicylic acid,	each	3 parts;
Aluminum acetate,		
Tincture of eucalyptus,	each	10 "
Tincture of lavender,		
Tincture of benzoin,		
Acetic acid,		

M.

To Prevent Loosening of the Teeth.—The *Gazzetta degli ospedali e delle cliniche* for December 12, 1899, gives the following:

℞ Tannin	120 grains;
Tincture of iodine	60 "
Iodide of potassium	15 "
Tincture of myrrh	75 "
Rose water	3,000 "

M. A spoonful in half a tumbler of water for a mouth wash.

A Spray for Pharyngitis Sicca.—The *Riforma medica* for October 20, 1899, attributes this formula to Blake:

℞ Carbolic acid	60 grains;
Tincture of iodine	7½ "
Tincture of aloes	6 "
Tincture of opium	10 drops;
Glycerin	750 grains.

M. To be applied several times a day.

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THE PLAGUE IN HONOLULU.

THE outlook as regards the spread of the plague in Honolulu has grown rather more serious than it was a month ago. On December 22, 1899, Surgeon Carmichael, of the Marine-Hospital Service, reported to Surgeon-General Wyman that no fresh cases had occurred during the ten days ending on that date, and that the quarantine against the infected district and against outward-bound interinsular vessels had been raised by the Hawaiian authorities. He added that the Hawaiian board of health had acted promptly and efficiently in the emergency. Four days later, however, on the 26th, he was obliged to report three supposed new cases, two in Chinamen who had been found dead and one in a young white girl who died after a brief illness that was not at first thought to be the plague.

It seems that when the quarter known as "Chinatown" was put through the cleansing process much of its refuse was dumped at a place called Iwelei, outside the city proper, but close to the slaughterhouses and near the girl's home. The girl was found to have a punctured wound between two of her toes, which Dr. Carmichael remarks may have been sustained while she was going about barefooted or may have been a bite inflicted by some insect. In this case the symptoms and the post-mortem appearances were the same as those described in a previous report of Surgeon Carmichael's, and the microscopical examination showed the same bacillus as had been found in the earlier cases. At the date of the report the cultures were not ready for examination, but a number of rats inoculated had all died within sixteen hours. In the cases of the two Chinamen who were found dead there was, of course, no history of the illness, but post-mortem examination disclosed the same appearances as had previously been observed in plague cases, together with pneumonic areas. The femoral and retroperitoneal glands were enlarged, congested, and surrounded by hæmorrhagic infiltration, and the pleural, pericardial, and peritoneal sacs contained bloody serum, as had been noted in all the preceding cases.

At the date of his report Surgeon Carmichael was still convinced that the authorities of Hawaii would do everything in their power to stamp out the disease, but he found it a matter for regret that the facilities for the disinfection of baggage were quite inadequate. On January 9th Surgeon Kinyoun telegraphed that Surgeon Carmichael had reported eight additional cases, but it does not clearly appear in *Public Health Reports* for January 12th, from which we derive our information, whether or not this number includes the three reported by him to the surgeon-general on December 26th. It is to be hoped that in the further work of sanitation it will be found feasible to burn refuse, instead of dumping it.

THE CIGARETTE QUESTION AGAIN.

THE wholesale and indiscriminate abuse of the cigarette, and the ascription to its use of a large proportion of the "ills the flesh is heir to," are yet forcibly in evidence, notwithstanding all that has been written to show the puerile and misleading character of the charges brought against it. It may, therefore, be at this time advisable to refer briefly to the latest report of the London *Lancet's* Analytical Sanitary Commission on the subject, and this time with special reference to American cigarettes. The *Lancet's* investigations on the chemistry of tobacco were begun as far back as 1853. In an article on The Cigarette Question in our issue for July 30, 1898, we referred to the report of the *Lancet* commission of October 20, 1888, which stated that "there was no trace of opium or any 'unclassified alkaloid' in the tobacco, not a trace of chlorine or arsenic in the paper, but that there was a faint trace of copper due to the metallic lettering on the paper wrapper."

The present commission was called into action in consequence of the absurd and misleading, and often false, statements continually made in the daily press of this country as to the baleful effects of cigarette smoking. The *Lancet* quotes a number of "amusing headings" to be found in the New York papers attributing the most preposterous results to cigarette smoking. As a large number of brands of American cigarettes are widely sold in England, the *Lancet* once again took cognizance of the subject, and, procuring through an agent samples of cigarettes sold in New York and in London respectively, it submitted them to an exhaustive and thorough analysis. The brands purchased in New York were Duke's Cameo, Richmond Straight Cut, Sweet Caporal, and Perfection; while the London market supplied Old Gold, Duke's Cameo, Richmond Straight Cut, Kinney's Straight Cut, Sweet Caporal, and Richmond Gem. The results of the analysis are published in tabular form by the *Lancet* in its issue for December 9, 1899, the following details being given in regard to each sample: 1. Weight in grains of tobacco in one cigarette. 2. Weight in grains of paper in one cigarette. 3. Amount per cent. of mineral matter in paper. 4. Ratio of paper (= 1) to tobacco. 5. Amount per cent. of nicotine in the tobacco (undried). 6. Amount per cent. of moisture in the tobacco. 7. Amount per cent. of mineral matter in the tobacco. 8. Alkalinity of ash (reckoned as K_2O) per cent. 9. Percentage amount of chlorine in ash. 10. Saccharine matters reckoned as grains of glucose in one cigarette. 11. Bodies like glycerin yielding oxalic acid on oxidation—grains in one cigarette. And, finally, tests for the presence in both tobacco and paper of opium principles, phosphorus, arsenic, mercury, copper, and other heavy metals. The *Lancet* concludes: "It will be apparent from this table that if any reproach exists at all it will be evident in the case of both the cigarettes purchased in New York and the same brands of cigarettes sold in London. As a matter of fact, the results in both cases show no foundation whatever for the exaggerated statements that have been made. Foreign toxic substances were not found in a single instance, and among those looked for, both in the paper wrapper and in the tobacco, were morphine, phosphorus, arsenic, mercury, copper, and other heavy metals. The only evidence of a metal being present was, as appears in the table, in the case of copper in the paper. This metal, however, was just barely indicated, and, having regard to the extreme delicacy of the chemical test for copper, the quantity present must be so excessively minute as to put any question of its being injurious beyond consideration."

We have already expressed in unequivocal terms, in the editorial before referred to, our opinion on the subject of the reputed evils of cigarette smoking, and we are glad to find them so amply confirmed by such an unimpeachable authority as the *Lancet* commission in the following words:

"To sum up, there is not a single factor in these numerous results upon which can be fairly based any allegation of the presence of a substance producing injury to health. As to the question of injury to health which may easily result from the excessive or premature smoking of tobacco in any form, that is quite beside the issue, the present inquiry only having reference to the statement that these cigarettes were injurious because they contained foreign poisonous ingredients; as we have said, a very careful search failed to elicit the slightest evidence on this head. No one deprecates more than do we ourselves the appalling increase of the practice of smoking among juveniles, and if those who are so emphatically solicitous about the health of the young community would turn their attention to this aspect of the question with a view to the restriction of the objectionable habit, undoubted good would be done. But to make manifestly exaggerated statements will not ultimately help the case one tittle; indeed, it is more likely to aggravate the evil."

As regards cigarette smoking in general, the *Lancet* says that any injurious results are to be referred to the method rather than to the materials of the cigarette; while as to the absorption of nicotine, it says that "it is worthy of note that the percentage amount of nicotine in the pure Virginia leaf invariably used in these cigarettes seldom exceeds, according to these analyses, one per cent. In other kinds of tobacco it may reach four times that amount. It is doubtful, however, whether any nicotine ever reaches the mouth of the smoker except that present in the moistened tobacco which is in contact with the lips. The smoke products of tobacco do not contain any important quantity of nicotine, the chief toxic bodies being related to that interesting series of organic bases known to chemists as pyridines."

Once more we reiterate the statements that in our experience and judgment injurious effects do not follow in any important percentage of people the moderate smoking of tobacco, whether as cigarettes or otherwise; excess in the use of tobacco, as of all other, even the most harmless, things, is bad, but abuse is no argument against proper use; cigarettes *per se* are no more injurious than any other form of smoking, and in our belief certainly not so injurious as cigars, since, as the *Lancet* states, such nicotine as reaches the mouth comes principally if not entirely from the moistened tobacco in contact with the lips, which is undoubtedly greater in the cigar than in the cigarette; the only special dangers inherent in cigarettes are the temptation to a more continuous use and to the practice of inhalation. There are certain classes of people who should not smoke at all, especially neurotics, the subjects of certain cardiac affections, and those in whom it affects injuriously either the sight or the throat; and, lastly, smoking in any form should be stringently interdicted by parents, teachers, etc., to all youths.

Due regard being had to these principles, we assert once more positively and unhesitatingly that cigarette smoking is not *per se* injurious, and that the mass of sensational newspaper cases ascribing all sorts of horrors to the use of cigarettes are as false as they are puerile.

"VAGINISMUS" IN MEN.

THE paradox of "vaginismus" in men is explained by M. Jaboulay in the *Province médicale* for December 16, 1899, in an open letter in which he criticises some views expressed by M. Rochet in an article on Resection of the Perineal Branch of the Internal Pudic Nerve in Certain Spasmodic Affections of the Urethra and of the Perinæum (*Archives provinciales de chirurgie*, May, 1899). M. Jaboulay applies the term vaginismus to a form of pelvic neuralgia in men which, he is convinced, is identical as regards the seat of the real trouble with the vaginismus of women. In men, he says, as in women, it may make its appearance at any age, and is manifested by the same superexcitability of skin, mucous membrane, muscle, or visceral contents of the true pelvis. It is a pelvic neuralgia, manifested by vaginismus in women and by urethro-vesical spasm in men. He brings up a number of recorded instances in which women affected with vaginismus were troubled with severe pain in urinating, and mentions a patient of his own whose case had formerly been mistaken for one of cystitis. M. Rochet's case that best illustrated the effects of resection of the perineal nerve, he says, was that of a young man who had repeated attacks of retention of urine, but no stricture, no prostatic affection, and no vesical paralysis; the trouble was simply due to spasm of the sphincter of the bladder. The man was a nervous person and had pharyngeal anæsthesia.

M. Jaboulay is opposed to Simpson's operation of dividing the internal pudic nerve for the relief of this form of neuralgia. He does not deny its efficiency, but his argument is that in the great majority of cases a cure can be effected by much less radical procedures, particularly dilatation of the anus—procedures, moreover, which do not lead to the objectionable consequences of the neurectomy in men, such as loss of sensibility in the penis, subsidence of sexual desire, and cessation of the erectile power. At most, he says, we should only expose the nerve and stretch it, and even that should not be done until milder measures have failed. Thus far his position seems to us well taken, but we can hardly assent to his dictum that neurectomy is the true means of treating the habit of masturbation. Surely an operation that entails such utter ruin of the copulative capacity must seldom if ever be warrantable for the purpose of breaking up a habit which, after all, there is reason to believe, only in extremely rare instances gives rise to any of the dire consequences that have been freely imputed to it.

THE AILMENTS OF WORKERS IN VANILLA.

IT seems that to the class of "professional" diseases are to be added certain ailments observed to be common in persons who work at the preparation of vanilla. Dr. H. Audeoud (*Revue médicale de la Suisse romande*, October 20th; *Deutsche Medizinal-Zeitung*, December 7, 1899) relates that a vanilla factory was opened in Geneva last July, and that he has observed that at first the workers, both men and women, were affected with headache, lassitude, muscular pains, vesical irritation, and increased sexual appetite. The women suffered also with eczema of the uncovered parts of the body and with disturbances of menstruation. The periods were lengthened and the amount of the flow was augmented. In one instance menstruation became exceedingly painful. In two women who were several years past the menopause the periods were resumed. In most cases toleration was established gradually, but some of the workers had to give up their employment.

COCAINE ANÆSTHESIA BY SUBARACHNOID INJECTION.

IN several instances of late satisfactory results have been reported from the subarachnoid injection of cocaine in the lumbar region, a development of the procedure devised by Dr. J. Leonard Corning, of New York (*New York Medical Journal*, October 31, 1885), but perhaps none of these reports are quite so emphatic as the experience related by Dr. Tuffier at a recent meeting of the Paris Société de chirurgie (*Presse médicale*, December 2, 1899). He showed a woman on whom he had performed vaginal hysterectomy for chronic pelvic suppuration, a tedious operation, since there were woody adhesions making it necessary to resort to morcellation. About two grains and a quarter of cocaine were used, and the analgesia was absolute. He reported another case of vaginal hysterectomy in which the same method of local anæsthetization had been resorted to with success, and he added that he had found it completely satisfactory in long operations on the anus, the rectum, the perinæum, the urethra, and the bladder, even in cases of painful cystitis.

THE MECHANISM OF TENDON CRACKING.

IT is well known that there are certain individuals who make a cracking sound in performing some movements. In a general way we have all taken it for granted that the cracking was due to the slipping of some tendon. Dr. Schuster lately demonstrated this at a meeting of the Berlin Verein für innere Medicin (*Deutsche medicinische Wochenschrift*, 1899, No. 29; *Wiener klinische Wochenschrift*, December 14, 1899) on a man who made the noises with his feet and hands. In the case of the foot the tendon of the peroneus slipped over the external malleolus, and in that of the hand the tendons of the flexor digitorum profundus slipped over the heads of the metacarpal bones.

THE ADDUCTOR CUTANEOUS FOLD OF THE THIGH AND INFANTILE PARALYSIS.

WHEN one has reached a diagnosis, or is in search of one, it is always comforting to be able to detect, together with the decisive sign, others that are confirmatory. Of this sort seems to be the situation of a transverse cutaneous fold described by Dr. Salomonson (*Neurologisches Centralblatt*, 1899; *Archives de neurologie*, December). It marks the upper boundary of the prominence formed by the adductor muscles of the thigh. In the infant it is situated from an inch to an inch and a half below the perinæum, and it gradually drops to a lower level until in adults it is a quarter or halfway down the thigh. In cases of paralysis due to poliomyelitis it is more superficial on the paralyzed than on the sound side and situated from a third of an inch to an inch lower. In paralysis of cerebral origin it is lowered only to a slight extent, and sometimes, especially in well-nourished children, a second fold, more superficial, forms beneath it.

MIRABILE DICTU!

It would seem at last as though some grains of sense were penetrating even through the obscure recesses of the "faith-healing" mind. A Christian Scientist at Boston, having her foot seriously injured by a train, was driven to the Emergency Hospital in an ambulance. When there, she steadily refused to be attended by the physicians, and insisted on being taken to a Christian-Science healer in a hack, even the ambulance being too heathenish a vehicle to be utilized. On her arrival at the healer's, however, that lady, according to the *Times* for January 15th, at once said that "it was a proper case for hospital treatment, and ordered the woman's removal to the City Hospital, where she was taken, and where later her foot was amputated." Of the logic of this lady's "Christian Science" we are somewhat dubious, but we congratulate her sincerely, at least, on her triumph of common sense over pragmatical theorizing.

ARTIFICIAL COLLATERAL CHANNELS FOR THE PORTAL BLOOD.

Assuredly there is the charm of novelty in certain surgical procedures undertaken by Dr. S. Talma (*Berliner klinische Wochenschrift*, 1898, No. 38; *Centralblatt für Chirurgie*, October 28, 1899) for the cure of ascites in a boy who had atrophic cirrhosis of the liver, but whose hepatic cells preserved their functional ability. The boy had been tapped repeatedly, and once an incision was made through his abdominal wall, but the dropsy returned. Thereupon the great omentum and the gall bladder were stitched to the abdominal wall, a pronounced diversion of the blood from the portal vein to the abdominal wall was effected, and the ascites was cured. However, the spleen began to enlarge, but it was anchored by means of sutures to points between the abdominal muscles and the integument, and then it diminished in size decidedly. At the end of two years the boy was found to be quite well. The author foresees the possibility of one danger from such procedures—that of too much blood finding its way from the intestines to various parts of the body without having passed through the liver.

ACUTE PEMPHIGUS IN THE ADULT.

Most modern writers on the subject of pemphigus appear to regard the acute contagious form, febris bullosa, as a variety of pemphigus neonatorum, but the older ones spoke of it as affecting adults also. Dr. F. Köhler (*Deutsches Archiv für klinische Medicin*, lxii, 5, 6; *Centralblatt für innere Medicin*, November 4th) gives an account which seems to establish the accuracy of our predecessors, which, by the way, has always been admitted by some dermatologists of the present generation. In a place near Jena five persons who lived in two neighboring houses, four children and an adult, were attacked with the disease. They all got well except one of the children; that one died in the clinic. In a week after the sick child's admission the nurse who had taken care of it was affected with blebs, fever, and the usual constitutional symptoms. The first bleb appeared on her face, because, as the author thinks, the dead child had caressed her face with its hands. Two days previously another Sister, who had washed the child's linen, was attacked in the same way, and the first blebs appeared on her arm. Here, then, was a little epidemic affecting seven individuals, three of whom were adults. Staphylococci and a diplococcus were found in the contents of the dead child's blebs.

THE ORIGIN OF SEX.

In our issue for December 30, 1899, we published an editorial with this heading, and having for its text the views of Dr. Davenport, as expressed by him in the *Intercolonial Medical Journal of Australasia* for October 20, 1899. Our attention has been directed to the fact, which had escaped our notice, that in our issue for July 2, 1892, an original article appeared from the pen of Dr. D. E. Keefe, of Springfield, Massachusetts, entitled Controlling Sex in Generation. The conclusions arrived at in that article are in almost every particular identical with those recently published by Dr. Davenport, and consequently every word contained in our editorial of December 30, 1899, might with equal reason and propriety be applied to Dr. Keefe's prior article. While there can be no doubt whatever as to Dr. Keefe's right of priority by some eight years, so far as publication is concerned, as regards the absolute independence of Dr. Davenport's researches the fact that they were, according to his statement, commenced in 1883 is sufficient proof. It would appear to be clearly a case of independent observers pursuing identical researches to identical conclusions; which fact only serves to strengthen our commendation of the theory itself to the careful observation of and experiment by general practitioners and obstetricians at large.

THE *WOMAN'S MEDICAL JOURNAL*.

With its January issue this excellent journal continues its course with a much improved appearance as regards typography, make-up, etc., and the new editor, Eliza H. Root, M. D., of Chicago, is presumably the writer of the opening editorial, entitled A Greeting for 1900. It is replete with evidence that she is imbued with excellent ideas and most creditable motives. We expect to see the *Journal* still further improved under her guidance, and we wish her success.

THE INFLUENCE OF MENSTRUATION ON THE CONSTITUTION OF THE BLOOD.

At the present time nobody requires to be told that menstruation is not a mere hæmorrhage; it is a function of manifold attributes. On a very small scale, Dr. P.

Sfameni, of Pisa (*Rassegna di ostetricia e ginecologia*, January–February, 1899; *Centralblatt für Gynäkologie*, October 28, 1899), has investigated its influence upon the composition of the blood. His observations were made upon six healthy women whose menstruation was regular. He examined the blood of four of them during only one menstrual period and that of each of the two others during four periods, so that in all he had twelve menstruations under observation. He found that the amount of hæmoglobin was constantly diminished, on an average to the extent of four and a half per cent., the decrease appearing to be in direct proportion to the amount of menstrual blood lost. The number of red corpuscles also was reduced during the period, although it was slightly increased shortly before it. In three of his twelve observations, however, the increase continued during the flow, but this he ascribes to individual peculiarities. The number of white corpuscles was increased in eight instances and reduced in four.

TYPHOID FEVER IN LADYSMITH.

Epidemics are not the least of the many inflictions that fall upon the people of a beleaguered town, and it was hardly to be expected that Ladysmith would escape them. A number of cases of typhoid fever are reported from that town. Pending the termination of the siege, the medical officers of the British forces there may be relied upon to do all that is possible in the way of sanitation.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported for the two weeks ending January 20, 1900:

DISEASES.	Week ending Jan 13.		Week ending Jan. 20.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	47	15	24	10
Scarlet fever	226	6	245	13
Cerebro-spinal meningitis	0	2	0	4
Measles	757	25	777	28
Diphtheria	276	41	287	41
Croup	15	12	10	11
Tuberculosis	125	145	200	180
Chicken-pox	37	0	33	0
Small-pox	1	0	1	0

A Dangerous Misprint.—We are asked to state that in the third edition of Professor Virgil Coblentz's very useful little book entitled *The Newer Remedies*, recently issued, the dose of blennostasine (cinchonidine dihydrobromide) is given as from 1 to 4 *grammes* (15 to 60 grains), instead of from 1 to 4 grains. The error has been corrected in the copies printed since it was discovered.

The Buffalo Academy of Medicine.—At the last meeting of the Section in Obstetrics, on Tuesday evening, January 23d, the programme included a paper on Differential Diagnosis of Disease of the Appendix and Falloppian Tubes, by Dr. C. C. Frederick; and one on Eruptive Diseases of the Female Genitals, by Dr. J. Henry Dowd.

The Richmond, Virginia, Academy of Medicine and Surgery.—At the last regular meeting, on Tuesday, January 23d, the subject for discussion, which was to be opened by Dr. M. D. Hoge, Jr., was "How Albumin gets in the Urine."

Marine-Hospital Service Health Reports.—The following cases of small-pox, yellow fever, cholera, and plague were reported to the surgeon-general during the week ending January 19, 1900:

Small-pox—United States.

Wilmington, Del.	Jan. 6–13		1 death.
Jacksonville, Fla.	Jan. 6–13	2 cases.	
Jessup, Ga	Jan. 16	1 case.	
Cairo, Ill.	Jan. 1–7	5 cases,	2 deaths.
Chicago, Ill.	Jan. 6–13	4 “	
New Orleans, La.	Jan. 6–13	13 “	2 “
Omaha, Neb.	Jan. 6–13	1 case.	
New York, N. Y.	Jan. 6–13	1 “	
Greensburg, N. C.	Jan. 15	Numerous cases.	
Cincinnati, Ohio	Jan. 5–12	1 case.	
Cleveland, Ohio	Jan. 10	25 cases.	
Blackwell, Oklahoma	Jan. 8	Prevalent.	
Newkirk, Oklahoma	Jan. 8	Prevalent.	
Greenville, S. C.	Jan. 6–13	2 cases.	
Columbia, S. C.	Jan. 6	24 “	
Mount Pleasant, Tenn.	Jan. 6	8 “	
Nashville, Tenn.	Jan. 11–18	6 “	
Houston, Texas	Dec. 31–Jan. 6	3 “	
Portsmouth, Va.	Jan. 6–13	10 “	2 deaths.

Small-pox—Foreign.

Antwerp, Belgium	Dec. 16–30	14 cases,	4 deaths.
Prague, Bohemia	Dec. 16–30	10 “	1 death.
London, England	Dec. 16–30	12 “	
Lyons, France	Dec. 16–23		2 deaths.
Königsburg, Germany	Dec. 16–23	1 case.	
Gibraltar	Dec 24–31	1 “	
Athens, Greece	Dec. 16–30	10 cases,	2 “
Bombay, India	Dec. 12–19	40 “	
Calcutta, India	Nov. 25–Dec. 9		9 “
Yokohama, Japan	Nov. 18–25	1 case.	
Chihuahua, Mexico	Dec. 31–Jan. 6		4 “
Vera Cruz, Mexico	Dec. 31–Jan. 13		3 “
Moscow, Russia	Dec. 16–23	7 cases.	
Odessa, Russia	Dec. 24–30	4 “	3 “
St. Petersburg, Russia	Dec. 16–23	19 “	7 “
Warsaw, Russia	Dec. 9–23	12 “	
Corunna, Spain	Dec. 24–30	2 “	
Madrid, Spain	Dec. 16–23	14 “	
Montevideo, Uruguay	Dec. 9	1 case.	

Yellow Fever—United States.

Key West, Fla	Jan. 6	1 case.	

Yellow Fever—Foreign.

Havana, Cuba	Dec. 31–Jan. 6		5 deaths.
Matanzas, Cuba	Dec. 20	1 case.	
Santiago de Cuba, Cuba	Dec. 31–Jan. 2		2 “
Vera Cruz, Mexico	Dec. 29–Jan. 13		3 “

Cholera.

Bombay, India	Dec. 12–19		1 death.
Calcutta, India	Nov. 25–Dec. 9		74 deaths.

Plague—United States.

Honolulu, Hawaii	Jan. 1–16	5 cases,	4 deaths.
Manila, Philippine Islands	Jan. 16	5 “	

Plague—Foreign.

Santos, Brazil	Oct. 15–Dec. 23	38 cases,	13 death.
Hongkong, China	Nov. 25–Dec. 7	42 “	42 “
Bombay, India	Dec. 12–17		248 “
Calcutta, India	Nov. 25–Dec. 9		138 “
Kobe, Japan	Dec. 10–20		3 “
Nagasaki, Japan	Dec. 9	1 case.	
Osaka and Hiogo, Japan	Dec. 2–23	12 cases,	9 “
Numea, New Caledonia	Jan. 1–19	9 “	5 “
Lisbon, Portugal	Jan. 1	1 case.	
Masan, Portugal	Dec. 25	9 cases,	7 “

Board of Examiners for Pensions.—Dr. J. E. Chmelicck has been appointed an examiner for the upper board.

The Association of the Alumni of Mount Sinai Hospital will hold its annual dinner on Wednesday evening, February 14th, at the Arena, No. 41 West Thirty-first Street.

Change of Address.—Dr. Joseph E. Chmelicek, to 1247 Franklin Avenue, New York.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from January 13 to January 20, 1900:*

THOMAS, JEROME B., Acting Assistant Surgeon; DU BOIS, FRANK, Acting Assistant Surgeon, and ST. JOHN, CHARLES, Acting Assistant Surgeon, will report in person to the commanding general, Department of California, for duty.

DELGADO, JOSÉ M., Acting Assistant Surgeon, will proceed to Washington, D. C., for instructions.

TENNEY, ELMER S., Acting Assistant Surgeon, will proceed from Winchester, New Hampshire, to Fort Douglas, Utah, for duty.

DUENAS, J. D., Acting Assistant Surgeon, will report for orders to the chief surgeon of the department.

STOREY, GEORGE B., Acting Assistant Surgeon, is assigned to duty with troops on the transport *Tartar*, to sail January 10th.

CALHOUN, WILLIAM W., Acting Assistant Surgeon, will report for duty with troops on the transport *Tartar* during the voyage of that vessel to the Philippine Islands.

RUSSELL, F. F., First Lieutenant and Assistant Surgeon. The order directing him to take charge of the sick at Vieques is revoked. HEYDECKER, H. R., Acting Assistant Surgeon, is assigned to duty at Vieques, Puerto Rico, to date from December 1, 1899.

HOFF, JOHN VAN R., Major and Surgeon, chief surgeon of the department, will proceed to Mayaguez, Ponce, Aibonito, and Cayey, and make an inspection of the medical departments and the sanitary condition of those posts.

A board of medical officers, to consist of CLAYTON, JERE B., First Lieutenant and Assistant Surgeon; STRONG, RICHARD B., First Lieutenant and Assistant Surgeon, and CURRY, JOSEPH L., First Lieutenant and Assistant Surgeon, will meet at or near Manila for the purpose of studying tropical diseases.

OWEN, WILLIAM O., Captain and Assistant Surgeon. Relieved from duty at San Francisco and ordered to Fort Thomas, Kentucky.

MERRILL, JAMES C., Major and Surgeon. Detailed as a member of the examining board at Washington, *vice* BACHE, DALLAS, Colonel and Assistant Surgeon-General, relieved.

RAYMOND, HENRY L., Major and Surgeon, is assigned to duty as attending surgeon at Chicago, and examiner of recruits, relieving JOHNSON, RICHARD W., Major and Surgeon.

MUNSON, E. L., Captain and Assistant Surgeon, is detailed as counsel in case before general court martial.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending January 20, 1900:*

(*Changes by Cable from Asiatic Station.*)

WRIGHT, D. L., Assistant Surgeon. Detached from the *Monterey* and ordered to the *Isla du Luzon.*

DICKINSON, D., Medical Director. Ordered to duty as a member of the naval medical examining board, Washington Navy Yard, January 20, 1900.

BEARDSLEY, G. S., Medical Director. Detached from the naval retiring board, Washington Navy Yard, and ordered home to await orders.

WISE, J. C., Medical Inspector. Detached from the naval medical examining board, Washington Navy Yard, January 20th, and ordered to duty as member of the retiring board same day.

HENEBERGER, L. G., Surgeon. Detached from the naval recruiting rendezvous, Detroit, Michigan, and ordered to the training station, Newport, Rhode Island.

DIEHL, O., Surgeon. Detached from the *Michigan* and ordered to the naval recruiting rendezvous, Philadelphia.

ALFRED, A. R., Passed Assistant Surgeon. Detached from the New York Navy Yard and ordered to the *Texas.*

OLCOTT, F. W., Passed Assistant Surgeon. Detached from the *Texas* and ordered to the naval recruiting rendezvous, Detroit, Michigan.

WILSON, H. D., Passed Assistant Surgeon. Ordered to duty on the *Michigan.*

RIGGS, C. E., Passed Assistant Surgeon. Detached from the naval recruiting rendezvous, New York, and ordered to the New York Navy Yard.

HARRIS, H. N. T., Surgeon. Ordered to temporary duty on the *Vermont* in connection with the crew of the *Albany.*

SPEAR, R., Assistant Surgeon. Detached from the naval recruiting rendezvous, Philadelphia, and ordered to the *Constellation* temporarily.

DUNN, H. A., Assistant Surgeon. Ordered to the Naval Proving Grounds, Indian Head, Maryland.

(*Changes by Cable from Asiatic Station.*)

MORRIS, L., Passed Assistant Surgeon. Detached from the *Helena* and ordered to the *Brooklyn.*

MORGAN, D. H., Assistant Surgeon. Detached from the *Iris* and ordered home.

BEARDSLEY, G. S., Medical Director. Placed on the list of retired officers of the navy from January 22, 1900.

FLINT, J. M., Medical Director. Placed on the list of retired officers of the navy from February 7, 1900.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the United States Marine-Hospital Service for the Fourteen Days ending January 18, 1900:*

AUSTIN, H. W., Surgeon. To report at Washington, D. C., for special temporary duty. To rejoin station at Philadelphia.

WILLIAMS, L. L., Surgeon. Granted leave of absence for ten days.

VAUGHAN, G. T., Passed Assistant Surgeon. Detailed to represent the service at the meeting of the National Pure Food and Drug Congress at Washington, D. C., March 7, 1900.

GEDDINGS, H. D., Passed Assistant Surgeon. Detailed to represent the service at the meeting of the National Pure Food and Drug Congress at Washington, D. C., March 7, 1900.

ROSENAU, M. J., Passed Assistant Surgeon. Detailed as delegate to the Thirteenth Session of the International Congress of Medicine to be held in Paris, France, August 2–9, 1900. Detailed to represent the service at the meeting of the National Pure Food and Drug Congress at Washington, D. C., March 7, 1900.

PARKER, H. B., Assistant Surgeon. Granted leave of absence for thirty days.

FRICKS, L. D., Assistant Surgeon. Detailed to represent the service at the meeting of the National Pure Food and Drug Congress at Washington, D. C., March 7, 1900.

BILLINGS, W. C., Assistant Surgeon. Detailed to represent the service at the meeting of the National Pure Food and Drug Congress at Washington, D. C., March 7, 1900.

RODMAN, J. C., Acting Assistant Surgeon. Granted leave of absence for four days.

WERTENBAKER, C. P., Passed Assistant Surgeon. To proceed to Greensboro, North Carolina, and Jessup, Georgia, for special temporary duty.

LUMSDEN, L. L., Assistant Surgeon. Relieved from duty at Seattle, Washington, and directed to proceed to the San Francisco Quarantine Station and report to the medical officer in command for duty and assignment to quarters.

KING, W. W., Assistant Surgeon. To report to Surgeon L. L. WILLIAMS, Immigration Depot, New York, for temporary duty, pending departure for Ponce, Puerto Rico.

THORNBURY, F. H., Assistant Surgeon. Relieved from duty at the San Francisco Quarantine and directed to proceed to San Francisco, California, and report to the medical officer in command for duty and assignment to quarters.

RAMUS, CARL, Assistant Surgeon. Relieved from duty at Havana, Cuba, and directed to proceed to Fort Stanton, New Mexico, and report to the medical officer in command for duty and assignment to quarters.

STANSFIELD, H. A., Assistant Surgeon. Relieved from duty at San Francisco, California, and directed to proceed to Honolulu, Hawaii, and report to Surgeon D. A. CARMICHAEL for duty.

FOX, CARROLL, Assistant Surgeon. Relieved from duty at the Reedy Island Quarantine Station and directed to proceed to the Port Townsend Quarantine Station and report to the medical officer in command for duty.

TROTTER, F. E., Assistant Surgeon. Relieved from duty at the Tortugas Quarantine Station and directed to proceed to Havana, Cuba, and report to the quarantine officer for duty.

EDSON, E. R., Assistant Surgeon. Relieved from duty at St. Louis, Missouri, and directed to proceed to the Reedy Island Quarantine Station and report to the medical officer in command for duty and assignment to quarters.

STEVENSON, JOHN W., Acting Assistant Surgeon. Granted leave of absence for thirty days from January 22, 1900.

Society Meetings for the Coming Week:

TUESDAY, *January 30th:* Rome, New York, Medical Society; Boston Society of Medical Sciences (private).

WEDNESDAY, *January 31st:* Auburn, New York, City Medical Association; Berkshire, Massachusetts, District Medical Society (Pittsfield); Middlesex, Massachusetts, North District Medical Society (Lowell); Gloucester, New Jersey, County Medical Society (quarterly).

THURSDAY, *February 1st:* New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, New York; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington); Medical Society of City Hospital Alumni, St. Louis; Atlanta Society of Medicine.

FRIDAY, *February 2d:* Practitioners' Society of New York (private); Clinical Society of the New York Post-graduate Medical School and Hospital; Baltimore Clinical Society.

SATURDAY, *February 3d:* Manhattan Medical and Surgical Society, New York (private); Miller's River, Massachusetts, Medical Society.

Births, Marriages, and Deaths.

Married.

KENNON—MCMAHON.—In Tangipahoa, Louisiana, on Thursday, January 11th, Dr. Charles E. Kennon and Miss Adeline Hyacinth McMahon.

LEALE—MARVIN.—In New York, on Thursday, January 18th, Dr. Medwin Leale and Miss Matilda Howard Marvin.

PERSONS — ELMORE. — In Mobile, Alabama, on Wednesday, January 17th, Dr. Henry Stanford Persons, of Montgomery, and Miss Mary Hails Elmore.

UNGER—MCMILLAN.—In Louisville, Mississippi, on Friday, January 19th, Dr. Jacob W. Unger, of West Point, Mississippi, and Miss Florence McMillan, of Louisville.

Died.

HALLOCK.—In Beverley, Massachusetts, on Monday, January 15th, Sarah E., widow of the late Dr. Charles Hallock.

KRISE.—In Carlisle, Pennsylvania, on Tuesday, January 23d, Dr. Columbus W. Krise, aged fifty-two years.

MACDONALD.—In Wellesley Hills, Massachusetts, on Friday, January 12th, Emily Wilbur, wife of Dr. W. L. Macdonald, of Boston.

OGIER.—In Charleston, South Carolina, on Sunday, January 21st, Dr. Thomas Louis Ogier, in the ninetieth year of his age.

SHAW.—In Brooklyn, on Tuesday, January 23d, Dr. John Cargill Shaw.

WITMER.—In Washington, D. C., on Thursday, January 18th, Dr. Abram H. Witmer, aged fifty-four years.

Letters to the Editor.

WHY ASTYCLINIC AND NOT POLICLINIC?

NEW YORK, *January 10, 1900.*

To the Editor of the New York Medical Journal:

SIR: Professor R. Kossmann's explanation of the word policlinic in a letter published in the *New York Medical Journal* for October 21, 1899, did not touch the question of why the Greeks prefer the word astyclinic to the word policlinic. In order to satisfy myself, I wrote to the eminent philologist, Professor G. N. Hatzidakis, of the University of Athens, the author of a scientific grammar of modern Greek and many other scientific works, whom I know personally and in whose house I had been while in Athens. Allow me to give you a translation of his answer: "It is not true that *πολεοκλινική* is New Greek. The difference between *πόλις* and *ἄστυ* is known to everybody. But neither *ἀστυκλινική* nor *πολικλινική* was used by the ancients. The modern Greeks called this institution *ἀστυκλινική* because the word *πολικλινική* would be confounded with *πολυκλινικη*, for the reason that a great many composite words in the Greek language begin with the word *πολύ*. But in every respect the word *κλινική* is ill chosen, because in the institution under consideration there are no beds, nor are its doctors called clinicians. Since, however, this term has made such inroads, even to such a degree that special legislation has been enacted on that basis, let it stand."

Will those who dispute about Greek words follow me by consulting real Greeks? A. Rose, M. D.

APOMORPHINE IN DELIRIUM TREMENS.

Mt. Carmel, Ind., *January 7, 1900.*

To the Editor of the New York Medical Journal:

Sir: In your issue of December 30, 1899, mention is made of the use of apomorphine in the treatment of delirium potatorum. At frequent intervals during the past eight years I have attended a "periodical" drinker who has usually wound up a drinking bout of from four to six weeks in a state of maniacal restlessness, excitement, and delirium. While in this state he brings matters to a quick conclusion by drinking everything that remains to him, imbibing from a pint to a quart of whisky within the space of an hour or less.

My purpose, on first using apomorphine, was simply to evacuate the contents of his stomach as speedily as possible, and the action was invariably as desired, but with the, to me, surprising result that the intense excitement, the asthmatic, difficult respiration, and all the other symptoms of alcoholic delirium soon subsided, and my patient, a burly, powerful blacksmith, from that time on has been easily controlled and has always made a quick recovery.

But for the incidental use of this drug he would have been subjected, as is usual, to a more or less prolonged course of bromides, chloral, etc.

R. F. Lewis, M. D.

Pith of Current Literature.

Natural Stimulants in the Blood.—Dr. W. L. Brown, of London, in correspondence to the *Interstate Medical Journal* for December, 1899, refers to a paper on The Craving for Stimulants recently read by Dr. Harry Campbell before the Society for the Study of Inebriety, wherein the author pointed out that mankind all the world over shows a liking for stimulants, from Noah, "who planted a vineyard, drank of the wine, and was drunk," down to the latest case of "drunk and disorderly" brought up at Bow Street to-day. Not only is there a desire for alcohol, but for such stimulating drinks as tea and coffee, the consumption of which in England has greatly increased during recent years. The widespread desire for things stimulating the author believes to be the manifestation of a very widely operating physiological principle—namely, *that stimulant substances are normally present in the animal organism and exercise a beneficial influence on function.* Under the head of stimulants he includes, for convenience, all substances, even though they do not intoxicate, which tend to brace up the nervous system. The blood contains a number of substances of this description, which may be termed *drug substances*—substances, namely, which act much as drugs do: influencing function without contributing energy. Many kinds of food contain them in abundance. Beef tea is essentially an infusion of such substances, and is known to be highly stimulating; and he believes that men and animals select their food not only for the nutrient matter, but also for the stimulants, which it contains. Among vegetable foods, maize and beans are, perhaps, the most richly supplied with stimulants—horses fed on them, especially if insufficiently exercised, become simply ungovernable. Besides the drug substances ingested with the food others are manufactured in the body, both in the digestive tract and in the tissues. We have been too much in the habit of looking upon these as mere deleterious matters which the organism is at great pains to neutralize or eliminate. Many of these produced during the digestion are, indeed, deadly poisons when absorbed in large quantities into the blood; but some substances which in large doses are poisonous may, in smaller quantities, be highly beneficial, as in the case of strychnine and morphine; and Dr. Campbell believes that some of the digestive toxines may exercise a beneficial drug influence on function—that the body, in fact, possesses a veritable drug manufactory. This, perhaps, partly explains the instinct among animals to search out drug-containing herbs. Among the drug substances thus manufactured in the body some are stimulant in their action. These act upon the nervous system, inducing the feeling of well-being, just as the depressant toxines act upon it, causing the feeling of ill-being—so that whether we feel well or ill depends largely upon the amount of stimulants or depressants in the blood. If the blood were wholly devoid of such substances, or if neither class predominated, there would simply be a feeling of apathy.

The view that the blood normally contains stimulants, and that these stimulants exercise a favoring influence on function and conduce to the feeling of well-being, explains the widespread liking in man and beast for things stimulating. When there is perfect health, and when the blood is well provided with its proper stimulants and not surcharged with depressants, there is no craving for extraneous stimulants, as alcohol and tea and coffee. But when it is defective in the one or surcharged with the other, then is felt the desire for the glass of wine or the cup of tea. In order to obviate this we should seek, says the author, to keep the body at the highest level of health, for, under these circumstances, the blood will be well supplied with physiological stimulants. When a man ceases to rely on these and begins to employ artificial aids, he is playing with double-edged tools.

The Relation of the Circulation of the Coronary Arteries to the Action of the Heart.—Dr. Walter Vose Gulick (*Corpuscle*, December, 1899) summarizes the results of his investigations as follows: 1. The property of contractility for the heart lies within the muscle tissue, and for its exercise a nutrient medium of the proper sort is necessary. 2. The coronary arteries are shown by infarction to be physiologically terminal. 3. After ligation the infarct formed may give place to connective tissue. 4. After the ligation of a coronary artery, an animal may live, its chance of recovery depending upon the size of the artery ligated and the condition of the heart.

Instillations of Picric Acid in Chronic Urethritis.—Desnos and Guillon (*Journal de médecine de Paris,* No. 41, 1899; *Therapeutic Gazette,* December, 1899), assert that picric acid exerts an almost specific action in the cure of chronic urethritis. Although this drug, when employed for the cure of extensive burns, has more than once produced symptoms of poisoning, its toxic properties are comparatively so mild that it is impossible to inject into the urethra a quantity sufficient to cause constitutional symptoms. The solutions stain the fingers, but the stain is rapidly removed by soap and water, while the color can be removed from fabrics by the employment of diluted solutions of ammonia or potash. The instillations are accomplished by means of a syringe holding about eighty drops of the solution. This is adjusted to a hard catheter with a fine lumen. The latter is introduced to the compressor urethræ muscle, and the solution is driven in gently until it flows out at the meatus.

The posterior urethra is treated by introducing the end of the catheter through the compressor muscle and injecting as before, the fluid then flowing into the bladder. This latter viscus must, of course, have been emptied before the instillation is made.

The strength of the solution varies from 1 to 200 to 1 to 100, and the quantity employed from twenty to eighty drops. The little pain experienced as a result of these injections quickly passes off, and the reaction is not characterized by any uncontrollable desire to urinate or the reappearance of a free discharge. The authors have treated only twenty-nine cases of chronic urethritis. In twelve the infection was tuberculous, in seventeen it was due to other micro-organisms. These cases were such as had proved intractable to the careful and scientific employment of the ordinary medicaments, such as protargol, silver nitrate, copper sulphate, etc.; and the claim is made for picric acid that it is especially serviceable under such circumstances. The cocci were few, and the discharge so slight as to be perceptible only after debauch. The duration of the treatment has varied from two weeks to five months. In general, from sixteen to seventeen treatments were sufficient.

Of the seventeen cases of simple chronic urethritis, thirteen were definitely cured, two were markedly helped, and two experienced no benefit; one of these latter was afterward cured by urethrotomy, and the other by instillations of protargol. Of the twelve tuberculous cases, two were cured, seven were benefited, two were made worse, and one showed no effect.

Castration for Hypertrophy of the Prostate.—Dr. Edward L. Keyes (*Journal of Cutaneous and Genito-urinary Diseases,* December, 1899) reported to the Genito-urinary Section of the New York Academy of Medicine in October, 1899, a case of castration for hypertrophy of the prostate which was a complete failure so far as the object sought to be attained was concerned. The author frankly stated that the operation never appealed strongly to him, for the clinical experience of Dr. Keyes and Dr. Chetwood was against it, while the theoretical considerations—the utero-ovarian analogy and the results of castration of animals—seemed to him wholly insufficient. He was, however, induced through reading an able article by Albarran and Motz in *Guyon's Annales,* January to March, 1898, to believe that the primary effect of castration was a rapid reduction of congestion, which consideration gave hope at least of relief. But in the author's case neither reduction of congestion nor atrophy ensued, and the prostate was, some time after operation, as nearly as could be judged, about the same size as it was when first Dr. Keyes felt it. The urine remained full of blood. The patient passed two ounces voluntarily and then four ounces by catheter. The urethral length was undiminished. Dr. Keyes's conclusions were: 1. That the prostatic enlargement in this case was chiefly peripheral, and had been unaffected by treatment. 2. That the cystitis had grown less severe progressively, and that the operation had had no evident effect upon it. 3. That the irritability remained about the same, and the slight improvement shown after operation might well have been due to the rest and systematic irrigation of his bladder employed at the hospital. 4. That the operation had been a complete failure. 5. That perineal prostatectomy with probable lithotrity was now indicated.

Gangrene in Relation to Glycosuria.—Mr. Cuthbert I. Wallace (*Lancet,* December 23, 1899) sums up his paper on this subject with the following conclusions: 1. That it yet remains to be proved that true gangrene (excluding death from acute specific processes which may occur in any subjects and at any age) occurs in diabetic patients unaccompanied by such arterial disease as would of itself produce the gangrene. 2. That the glycosuria may or may not precede the gangrene, but is not usually accompanied by other signs of diabetes. 3. That septic wounds may produce a glycosuria which vanishes when the septic process is removed. 4. That individuals suffering from septic processes are often on the borderland of glycosuria. 5. That gangrene may aggravate a preexisting glycosuria. 6. That the arterial disease is sometimes that which accompanies, or is produced by, chronic renal disease. 7. That it has yet to be proved that neuritis can produce any gangrene comparable to that of the so-called diabetic gangrene. 8. That the best chance of recovery is offered by removal of the limb near the trunk, and that this measure should be undertaken before the patient is reduced by septic absorption. 9. That the presence of glycosuria may be an indication, instead of a contraindication, for operation.

Calcareous Deposits in the Ovary.—Ries (*Zeitschrift für Geburts. und Gynäkologie,* Band xl, Heft 1; *American Journal of the Medical Sciences,* January) reports three cases in which calcareous nodules, varying in size from a cherry to a pigeon's egg, were found in the interior of the ovary. Two of these were of stony hardness, showing, on section, a nucleus of soft detritus, lying in a cavity which was lined with a smooth membrane, devoid of epithelium. The capsule was a structureless membrane, infiltrated with lime salts. The writer believes that these nodules result from the deposition of calcareous matter in the lutein-cell layer of a corpus luteum, the central cavity being formed secondarily.

Arsenic as a Normal Constituent of the Animal Body.—M. Gautier (*Gazette hebdomadaire de médecine* *et de chirurgie*, December 10, 1899), at a recent meeting of the French Academy of Sciences, described his investigations which showed that arsenic was normally present in the thyreoid gland of all carnivorous and herbivorous animals in minute though appreciable quantity. Smaller quantities were found in the thymus, brain, and skin, while it could not be found in any other tissues. As was pointed out by M. Brouardel and the author, this does not affect medico-legal decisions, since in these the arsenic is found in other tissues and always in greater quantity than normally in the thyreoid—the largest amount found there being in the proportion of one milligramme to 127 grammes of gland, or about 1 to 120,300. The source of the arsenic is supposed to be certain aliments, and it is carried by the white blood-corpuscles and fixed in the nuclei of the cells, where it is found combined with nucleins. The author considers the presence of arsenic as essential as that of iodine to the functional activity of the thyreoid.

Proceedings of Societies.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Twenty-first Annual Congress, held in Chicago, Monday, Tuesday, and Wednesday, May 22, 23, and 24, 1899.

The President, Dr. William E. Casselberry, of Chicago, in the Chair.

(*Concluded from page 31.*)

Taking Cold.—This was the title of a paper by Dr. Green V. Woollen. (See page 42.)

Dr. J. L. Goodale, of Boston: By the term "taking cold" the essayist means, I suppose, to designate the process known pathologically as acute rhinitis. It seems to me that any explanation relative to the ætiology of this affection must take into account the possible rôle which micro-organisms may play. A good deal of experimental work has been done recently in regard to the bacteriology of the nose and mouth, both in England and other countries. The recent experiments in Flügge's institute are interesting as bearing on the diminution in virulence of bacteria which the saliva seems to exert. Pathogenic micro-organisms are harbored in the mouth that are not virulent for the host under normal conditions. If, however, they are recovered from the mouth and cultivated on artificial media, they may show a degree of virulence. In view of these facts, it seems reasonable to suppose that any diminution in the natural resisting powers of the human system might allow these organisms to become virulent again. The nutritive functions, so called, may become disturbed; the composition of the saliva or the nasal mucus may become altered; phagocytosis may become inhibited, and micro-organisms naturally disposed of may become pathogenic for the individual. We know that a great many colds are simply inflammations of the lymphoid tissue in the nasopharynx. Bosworth has called attention to this. The typical cold in children is an inflammation of the lymphoid tissue in the nasopharynx. The peculiar susceptibility of lymphoid tissue to bacterial infection makes it extremely probable that if the infectious agent is of bacterial origin in acute rhinitis, its entrance point may be the lymphoid tissue in the nasopharynx. The symptoms of acute rhinitis are those of a bacterial infection; that is to say, it begins in severe instances by a chill, subsequently fever supervenes, and the process finally terminates by what we may call lysis. In view of these facts I wish to suggest that the theory of bacterial infection should not be overlooked in any explanation regarding the cause of taking cold.

Dr. Samuel Johnston, of Baltimore: I should like to ask Dr. Goodale what micro-organisms are especially found in that peculiar secretion which we get in the nose.

Dr. Goodale: The *Staphylococcus pyogenes aureus* and *albus* are the micro-organisms most commonly found. The *Streptococcus pyogenes* also occurs and is, I believe, more characteristic of the severe forms of colds in the head.

Dr. G. A. Leland, of Boston: There are probably few things in our province of medicine concerning which there are so many theories as taking cold, which is after all a very simple matter, the keynote of which was struck by Dr. Bosworth when he referred to the activity of the skin. We may describe a cold as simply a disturbance of the vasomotor equilibrium between the external and internal surfaces of the body—that is, between the circulation of the skin and that of the lining of the internal tubes or cavities of the body. The external surface receives a chill. Its capillaries are thereby contracted and the blood driven away from the surface. The skin is doubtless the largest organ of the body and contains more blood than any other organ, with the possible exception of the liver. Its surface is probably larger than that of any other system of intracorporal tubes. When these tubes, therefore, are obliged to take up the blood driven from the skin, they become congested, or at least hyperæmic. If, now, the skin is in a sluggish state, the return of warm surroundings may not be sufficient to induce it to take up again its supply of blood and the internal hyperæmia remains. The skin, being deprived of its blood in these warm surroundings, is anæmic and chilly, which is almost the first symptom of taking cold. If any of the internal surfaces are affected by a chronic or subacute inflammation, the congestion referred to immediately manifests itself as a dryness and stiffness if, for instance, only the nose and throat are affected by a cough, if the air-passages below the pharynx are affected, as an intestinal flux, if it is the bowels, and so on. If the skin, on the other hand, is in an active state when warm surroundings are resumed, it takes up again its supply of blood and the internal hyperæmia is relieved—*i. e.*, the patient does not "take cold," which is another way of saying that the internal congestion does not persist. The persistence of the hyperæmia, however, causes the usual train of symptoms which we call a cold. In the one case it is rhinitis, in another bronchitis, and another diarrhœa, or perhaps a metritis. Ordinary treatment, both domestic and professional, for a cold bears out this theory, the remedies being directed to the simple renewal of the blood supply of the skin—that is, the relief of the internal congestion. The old-fashioned "rum sweat" or the "herb tea" of our grandmammas had as an object the heating up of the body, producing hyperæmia of the skin, without which sweating does not occur. The Dover's powder, by dilatation of the external vessels, relaxing the vasomotor tension, does the same thing. The Turkish bath, or, in fact, the hot bath, however taken, has the same result; and I have found in my experience that the prescription of the hot soak of twenty minutes in a bath with the temperature of 105° F. or more, followed by the usual cleansing process, and another immersion of ten minutes, this succeeded by a reduction of the temperature of the water to 80° or 85° F., or even less, to produce a reaction, with a good rub down afterward to again warm and dry the skin, is one of the most efficacious, pleasant, and least injurious methods of getting rid of a cold, if taken within the first forty-eight hours.

Another fact sets forth this same theory as follows: Living in the far East for a number of years, it was my privilege to learn, among other things, of the fondness of the Japanese for bathing. It is their custom to take exceedingly hot baths, the temperature of the water ranging even as high as 130° F., and for a certain class of the community 120° F. is the common temperature. I have frequently seen a native go walking through the streets with the snow falling (the temperature being from 30° to 34° F.), dressed in wooden clogs and a loin cloth and a kimono (a loose garment hanging from the shoulders and blowing out far behind, leaving, of course, the body almost entirely naked), as red as a lobster, having just emerged from one of these hot baths. He walks through the streets to his dwelling, covers himself with a thick body garment, and sits about in his room without a thought of taking cold. Here the internal congestion does not take place, because the cutaneous capillaries are paralyzed, and the blood can not at once be driven inward by their contraction before relief to the paralysis of the vasomotor constrictors takes place. Enveloped in his big garment, this relief takes place slowly. The body temperature would be much reduced, of course, during his walk homeward, but as he has absorbed an excess of heat from his bath he does not lose enough to produce evil effects.

The bacteriological theory of taking cold doubtless obtains in some cases when an invasion of micro-organisms produces the symptoms of internal cold, but in general it is probably true that the internal hyperæmia, with its perversion of surface secretion, reduces the vasomotor resistance so that this invasion may produce its evil results.

There is one theory which has not been mentioned to-day, and that is one which Dr. L. Duncan Bulkley illustrated a few years ago; and I would like to add my testimony that in my own case, as well as in that of many patients, I have found that what might be called a uric-acid explosion often produces the symptoms of "cold"; and that, as he recommended, the sudden production of alkalinity by taking large and frequent doses of bicarbonate of sodium (best given in the five-grain soda mint tablet) is capable of banishing certain forms of cold in a most satisfactory manner.

Dr. Woollen's paper is a very interesting one and was not produced without a great deal of study and thought, and I am very glad that it has enabled us to bring up this subject for discussion, for evidently the common subjects which concern us in our everyday work can not be too well understood.

Dr. F. H. BOSWORTH, of New York: It has always seemed to me that the expression "taking cold" is susceptible of criticism. A cold in the head, or an acute rhinitis, bears somewhat the same relation to "taking cold" that the roseola of syphilis does to the disease in the blood, or that the eruption of scarlet fever does to scarlet fever. It is a great mistake to say that taking cold is a cold in the head. Acute rhinitis is simply the local manifestation of the general disturbance. I am very glad the subject has been brought up, and I wish there were time for more discussion. We are protected from the dangers and menaces of the world by the outer coating of the body—viz., the skin—and when it ceases to protect us, we become liable to colds. It is through the skin that we feel and contract colds. If we are not protected by the skin from low temperature we take cold. Why, then, are we not protected? The Lord sent us into this world with ample protection. We live in hot rooms, and pile on clothing until the function of the skin is put to sleep, as it were.

I have been treating catarrhal diseases for now nearly thirty years, and I long ago made up my mind that it was absolutely impossible to treat successfully these affections unless we taught our patients how properly to protect themselves from suffering from exposure in our great changes of temperature. This is only accomplished by teaching them those simple sanitary measures which protect them from taking cold and thus restoring to them what they have practically abolished. Those functions with which Nature has endowed us tend to quit if we do not give them something to do. Of course, that is a slang expression, but is a good one. The best and practically the only protection against taking cold is a good, vigorous circulation—that is, a good capillary circulation in the skin. We must give it exercise if we want it to do us any good, and if we do not give the skin exercise it quits. How do we put the skin to sleep? By simply piling on heavy clothing. We keep the skin in order by wearing thin clothes, suitable for the different changes in temperature. By putting on clothing we protect ourselves from suffering and the discomforts of low temperature, but thereby render ourselves exceedingly sensitive to exposure.

There are two measures that are absolutely essential as aids to treatment in the management of so-called catarrhal cases, and what I mean by catarrhal cases are adenoids, rhinitis, etc. In the first place, forbid all patients from wearing more clothing than is absolutely necessary. I recall a book published by one of the founders of this association, in which he recommended patients to wear six suits of underwear during the year, changing them according to the rise and fall in temperature. No teaching, it seems to me, could be more pernicious. One rarely changes his underwear in the course of the year without taking cold. We should get along with as little clothing and as few changes as possible. There are some rules I insist upon. One of them is to instruct my patients to wear but one suit of woolen underwear. Too much clothing not only renders the skin circulation sluggish, but hampers the great function of the skin—perspiration. By the way, most of our woolen manufacturers in making up woolen underwear put the prickly side on the inside, and the dressed or smooth side on the outside, a feature exceedingly irritating to a sensitive skin. And so it is a good plan to tell such a patient to have his underwear made wrong side out. I would recommend one suit of underwear, or a combination suit, if it is the right material, with short sleeves and low neck. The neck and arms are parts of the body that can be exposed with impunity. Furthermore, the fabric should be as thin as is compatible with comfort.

The next measure is the daily use of the cold bath. This beyond any other single measure promotes and stimulates a good circulation. The benefit of the cold bath is not only in its stimulation of the circulation, but also in its toning up of the nervous system. One word here as to the much-vaunted Turkish bath. It would seem rather curious that we have to learn from the Turks how to bathe. Did any of you ever stop to think of the *modus operandi* of the Turkish bath? You go into a room heated to a temperature, say, of 185° F., and sweat and sweat. Now, profuse perspiration is an abnormal condition. I know of no earthly reason why you should sweat in this way. People say the object is to open the pores. The sweat pores, I suppose. These pores are always open; they are never closed. If you stop up the pores, you are going to have a boil or an abscess. The Turkish bath is a luxury in which many indulge, but from a sanitary or hygienic point of view I have always been skeptical as to its virtues.

We can not successfully manage our catarrhal patients unless we so regulate their habits as to clothing and bathing that they are not constantly taking cold, and so baffling our efforts at relief by repeated exacerbation of their disorders.

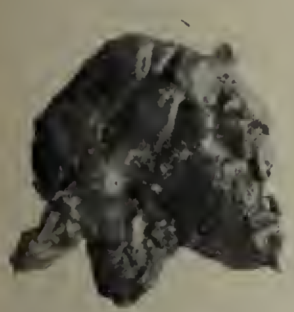
I am very sure that in my own practice my success in treatment has been very notably increased since I began to enjoin the rules to which I have briefly referred.

Chronic Abscess of the Frontal, Ethmoidal, and Sphenoidal Sinuses, followed by Meningitis and Death.—Dr. J. H. Bryan presented a paper on this subject. (See page 77.)

Remarks on Intranasal Operations.—This was the subject of a paper by Dr. Walter F. Chappell. (See page 114.)

Presentation of Specimens and Instruments.

Dr. J. W. Farlow, of Boston: I have here a specimen of adenoid disease, which is interesting for two reasons: First, it is from a patient fifty years of age, in my experience a very unusual amount to be found at that time of life; and second, I removed it all with one cut of the Schuetz pharynxamygdalotome. The accompanying life-size figure gives an accurate idea of its circumference, but it is much thicker than the photograph would indicate.



Adenoid removed with the Schuetz pharynxamygdalotome from a patient fifty years of age. Natural size.

An Adjustable Nasal Splint.—Dr. John W. Farlow presented a nasal splint devised by Dr. R. A. Coffin, of Boston. (See vol. lxx, page 392.)

A Laryngeal Applicator.—Dr. Coolidge showed a laryngeal applicator devised by Dr. Clark. It consists of a rod of somewhat smaller diameter, but having the curve of a Schrötter laryngeal tube forceps. This rod is split for about three inches from the end, which has mouse-toothed tips for holding cotton securely. The rod is set in a hollow metal handle, and there is a small ring which slides over the split portion of the rod to hold the cotton after it has been adjusted. The instrument is made by Leach & Greene, of Boston.

Three Improved Instruments for Use in the Operation for Removal of Lymphoid Growths from the Vault of the Pharynx.—These instruments were presented by Dr. Thomas R. French. (See vol. lxx, page 393.)

Book Notices.

Twentieth Century Practice. An International Encyclopædia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by Thomas L. Stedman, M. D. In Twenty Volumes. Volume XVIII. Syphilis and Leprosy. New York: William Wood & Co., 1899. Pp. v-3 to 703.

More than half this volume is devoted to a monograph on acquired syphilis by Professor Eduard Lang. Although he believes that syphilis is caused by a micro-organism, he does not think that the organism has been discovered, and he gives no space to a description of the alleged microbes of the disease. He wastes no time on the confused history of syphilis, but enters at once upon the description of the syphilitic infection, and passes thence to the consideration of the pathology, initial lesions, and various phenomena of the disease in the several tissues and organs of the body. In the section on treatment he advises excision of the local sore if the latter is perfectly distinct and situated so that it may be removed with a wide border of healthy tissue, without causing malformation or severe loss of substance; the earlier it can be removed the better, and the neighboring lymph glands must be free from involvement. The author believes in inunction or injection in preference to administration by the mouth in the use of mercury, and he gives an extensive formulary. His work is very practical and avoids unnecessary discussion of disputed points.

Mr. Jonathan Hutchinson has written a chapter on inherited syphilis that is brief and practical, and it is to be noted that this author advises inunction as the more desirable way to administer mercury to infants.

Dr. Prince A. Morrow is the author of an elaborate article on leprosy in which he presents the results of his long and careful study of this disease. It is very gratifying to note that this author is not in sympathy with the idea that there is danger of a "new pandemic outbreak of leprosy." This article is likely to be a classic on this important disease.

The editor is to be congratulated on the work he has accomplished in this volume.

Traité de médecine. Deuxième édition. Publiée sous la direction de M. Bouchard, Professeur à la Faculté de médecine de Paris, etc., et M. Brissaud, Professeur à la Faculté de médecine de Paris, etc. Tome III. Par MM. G. Thibierge, A. Gilbert, H. Richardière. Avec figures dans le texte. Paris: Masson et Cie., 1899. Pp. 706.

The third volume of the second edition of the *Traité de médecine*, edited by Bouchard and Brissaud, is devoted to the diseases of the skin and the blood-making organs; to the intoxications caused by lead, arsenic, illuminating gas, etc.; and to venereal diseases. The section by Thibierge, on skin and venereal diseases, is most excellent. The presentation of the whole is clear, and the prominent points are well accentuated. The recent discoveries and changes in the views of the medical profession on leprosy, as voiced in the recent Lepra Congress, have been embodied in the article on that subject; we notice also a complete revision of the section on tuberculous disease of the skin. Under venereal diseases we note the recommendation of protargol as one of the most valuable remedies for acute and chronic gonorrhœa, also the definite statement that the soft chancre is caused by a streptobacillus described by Ducrey, but certainly this lacks general acceptance. The frequency of an invasion of the posterior urethra in acute gonorrhœa is well brought out, as is also the specific nature of vulvo-vaginal inflammation in young children. In fact, the whole shows the careful revision which has been made.

Equal care has not been shown in the article by Gilbert, on the blood. The part on technics is not complete, and the procedures which are recommended for the determination of the various factors are neither the simplest nor most accurate. No mention is made of the Fleischl hæmoglobinometer or of the improved forms of Oliver and Miescher; the Thoma counting cell for enumeration of the blood-corpuscles is not noticed, and the stains advised for dried blood smears are not the best and most useful, though the author has consulted Ehrlich's latest paper on the subject, as is shown by a reference under another topic. To turn to the clinical part of the article, which is much more satisfactory, so far as care in revision and thoroughness of development of the subject go, there seems to be all that should be included in such a compass. The recent claims of Löwit as the discoverer of a parasite in the bodies of the white cells are mentioned, but evidently the parasite is not accepted as the cause of leucæmia. The scientific portion of the section on intoxications, by Richardière, is very well developed, but it is to be regretted that no treatment is suggested for chronic lead poisoning or for poisoning by arsenic or phosphorus. Certainly such an omission should not occur in a work of this size and completeness.

Surgery. A Treatise for Students and Practitioners. By Thomas Pickering Pick, Senior Surgeon to the Victoria Hospital for Children, etc. London and New York: Longmans, Green, & Co., 1899. Pp. xix–1176.

Thirty years' experience as a teacher of surgery, combined with an active hospital practice, has enabled the writer to collect an invaluable amount of material and knowledge, which he has consented to set forth in a text-book only after the most urgent persuasions and solicitations of his former students. That the author is fully qualified to present to the profession a new treatise on surgery is evinced by the excellence of the work at hand. The writer might be accused by some of being perhaps rather too dogmatic in his views; he, however, has recognized the possibility of this impression, and states in his preface that the one-sided expressions of doctrine are not due to any egotistical ideas, but rather to the exigencies of space.

We find but little to dissent from in the volume before us. The writer's views on the ætiology of congestion and inflammation are hardly in accord with the ideas of the latest thinkers on the subject, who consider that the latter condition is due alone to the presence of a pathogenic microbe, while the former may be looked upon as a vasomotor disturbance due to a simple traumatism or the result of a chemical irritant acting on the tissues. The author, however, has not totally lost sight of these advanced ideas, and states that the exciting causes of inflammation are: 1. Direct injury. 2. Chemical products of putrefaction. 3. Infective micro-organisms. He further gives as the cause of congestion the "application of some irritant, either mechanical or chemical." If we are to accept his views, we hardly see any need for more than one term for both the conditions described.

In the section on fractures and dislocations, we find the same elaborate treatment described (a number of special splints being advised) for the care of the so-called Colles's fracture as is found in most of the popular text-books of the day. We think that proper reduction will give satisfactory results, and that the subsequent treatment is of little moment. As regards amygdalectomy, the author shows a preference for the use of the bistoury. The Mackenzie instrument is more satisfactory. A word of caution would not be amiss in the use of either instrument on the adult, for we may meet with alarming hæmorrhage. The danger may be entirely avoided by the use of the cold snare.

O'Dwyer's intubation of the larynx, in children, is decried in favor of tracheotomy. The author's reasons are summed up in the difficulties of introducing the tube and the special risks which are apt to follow its use—*i. e.*, "extensive ulceration and even necrosis of the cartilages, falling of the tube into the trachea, or swallowing of the tube." All these accidents may be readily prevented by the selection of a tube of proper size. In fact, extensive ulcerations and necrosis of the cartilages are rare accidents with us. The swallowing of the tube is of no moment; its early recovery may be regarded as a certainty. We should rather expect a hesitancy in operating for disease of the vermiform appendix and consider the author's advice against the best interest of our patient. We note that he has failed to mention the intermuscular operation, so popular with us in selected cases.

The work is very complete and ably covers a very large field, including many of the provinces of surgery commonly found only in special works. The student and practitioner will find the book most useful and instructive and very well worth a careful reading; in fact, we think most highly of this excellent work.

Bacteriology in Medicine and Surgery. A Practical Manual for Physicians, Health Officers, and Students. By William Hallock Park, M. D., Associate Professor of Bacteriology and Hygiene, University and Bellevue Hospital Medical College, etc. Assisted by A. R. Guerard, M. D., Assistant Bacteriologist, Department of Health, City of New York. Illustrated with Eighty-seven Engravings and Two Colored Plates. New York and Philadelphia: Lea Brothers & Co., 1899. Pp. xi–18 to 693. [Price, $3.]

The rapid multiplication during recent years, in this country and abroad, of condensed text-books on bacteriology published in English, French, and German, would seem to have left little room for any addition to this field. It is therefore all the more a matter for congratulation that the present volume, while covering very acceptably the field of bacteriological principles, technics, and description of pathogenic species, goes on to fill a well-recognized gap in another department of the subject. While most other works offer scraps of information on many important details which closely concern the practising physician and the health officer, and no less the student and the pathologist, this work is a thesaurus of practical hygiene.

Dr. Park's treatise is especially full on those departments of bacteriology which are directly connected with preventive medicine. We find that in the various sections he treats of disinfection, the occurrence of pathogenic bacteria in soil, the mode of infection, pathogenesis, diagnosis, and therapeutics, giving a large mass of facts, including those brought out in the latest researches, many of which have not before found their way out of periodical literature. There appears to be throughout the work a personal coloring which reflects the author's very wide experience with the pathogenic bacteria. Probably no other man, in this country at least, has been brought so intimately in contact with the hygienic aspects of bacteriology. Accordingly this point of view is apparent throughout the volume, from the section on tuberculosis to the concluding paragraph in which the muzzling of dogs in some localities is shown to have stamped out hydrophobia.

Many important details it is impossible to mention here. It is hardly necessary to recommend the chapter on the diphtheria bacillus, which should attract attention on account of the author's contributions in this particular field. The reviewer finds in various sections many new and original observations based on the author's experience, which have not before appeared in print, such, for example, as the estimate of the value of Neisser's and other differential stains for the diphtheria bacillus.

The present work, then, instead of adding to the list of routine compilations, occupies a somewhat unique position, in which it is practically indispensable to every physician who would be well informed. It will prove a very valuable guide to health officials, offers a very clear exposition of applied bacteriology for students, and presents a mass of new facts and well-sifted old ones for the bacteriologist.

The Hygiene of Transmissible Diseases: their Causation, Modes of Dissemination, and Methods of Prevention. By A. C. Abbott, M.D., Professor of Hygiene and Bacteriology, and Director of the Laboratory of Hygiene, University of Pennsylvania. Illustrated. Philadelphia: W. B. Saunders, 1899. Pp. 3 to 311. [Price, $2.]

The scope of this work is sufficiently described by its title, and when one has read the book his only regret is that it had not been made more comprehensive. That the transmissible diseases (*i. e.*, "the preventable specific diseases") comprise the more important of disorders against which hygiene is effective is true, and one can not but have satisfaction in so able a treatise upon the subject, at the same time that he would wish the work might have been made to include the whole field of hygiene. We have classic works on the subject of hygiene, it is true, but none that do not admit of improvement in the light of modern research, and the time is now ripe for a systematic treatise upon the subject that shall represent our present knowledge. In short, Professor Abbott's work is a very excellent one of which there is not enough.

The introduction to the work is, of course, general in its nature and refers chiefly to the history of hygiene. Following this is a section upon the causation of diseases in general in which are described what are familiar to us all as predisposing and exciting causes. The second section constitutes the bulk of the book, and in it each of the transmissible diseases is taken up and thoroughly considered so far as its cause, its mode of dissemination and infection, and its prophylaxis are concerned. Necessarily there is much in this portion of the work that will be found in every text-book upon medicine, but, very naturally also, the scope of the discussion is more ample than is permitted in the case of the text-book or even the ordinary "system." The list of diseases treated of in the prophylactic sense is very complete and includes not only the acute infectious diseases, but such conditions also as hydrophobia and affections due to intestinal parasites. The third section of the book treats of prophylaxis in general as directed against infections. Naturally this covers immunity, vaccination, and protective inoculation as well as isolation and quarantine. The work is excellent throughout, and the physician will find in it both pleasure and profit. As we have already said, we wish it might have been made to cover a wider field.

The Surgical Diseases of the Genito-urinary Tract. Venereal and Sexual Diseases. A Text-book for Students and Practitioners. By G. Frank Lydston, M. D., Professor of Surgical Diseases of the Genito-urinary Organs and Syphilology in the Medical Department of the State University of Illinois (The Chicago College of Physicians and Surgeons), etc. Illustrated with Two Hundred and Thirty-five Engravings. Philadelphia, New York, and Chicago: The F. A. Davis Company, 1899. Pp. xiv–1011. [Price, $5.]

The author in preparing this work has followed the plan of the lectures delivered by him at the Medical Department of the University of Illinois. For the sake of convenience the work has been divided into ten parts. The first is devoted to the general principles of genito-urinary and sexual hygiene and includes venereal pathology and therapeutics. The chapter on the bacteriological relations of genito-urinary affections and toxæmias of urinary origin is especially interesting; in it the reader will find the latest ideas on the subjects expressed in a succinct yet lucid style, which leads us to read carefully and, furthermore, tends to make us feel safe in accepting the author's views.

In part ii we find an excellent treatise on non-venereal diseases of the penis. The first chapter gives us an exhaustive study of the anatomy and of the physiological functions of the penis, and, further, we find a careful review of acute and chronic inflammations of the organ, including a scientific consideration of neoplasms. The chapter concludes with a description of the proper method of amputating the penis. Diseases of the urethra and gonorrhœa are taken up in part iii. Although this section is instructive and well written, it is hardly so full as might be expected, considering the importance of the subject discussed. We should have liked to see more attention paid to the ætiology of gonorrhœa and the consideration of the pathogenic action of the gonococcus, together with the proper methods of staining the microbes for their ready demonstration. The treatment of urethral strictures is fully considered.

As concerns part iv, we find nothing which does not meet with our approval. The author's treatment of the chancroid and the frequently complicating bubo is quite in accord with the most advanced ideas. Following in natural order, we find the subject of syphilis discussed in part v. The remaining sections are devoted to the consideration of the diseases affecting sexual physiology, those of the prostate gland and seminal vesicles, those of the urinary bladder, surgical affections of the kidney and ureter, part x concluding with the diseases of the testes and spermatic cord.

The work is freely illustrated, and the illustrations are mostly woodcuts. The volume is presented in good style by the publishers. The print and bookmaker's work are excellent, and we feel after carefully reading it that a most useful book has been added to our literature.

Burdett's Hospitals and Charities. 1899. Being the Yearbook of Philanthropy and the Hospital Annual. Containing a Review of the Position and Requirements, and Chapters on the Management, Revenue, and Cost of the Charities. An Exhaustive Record of Hospital Work for the Year. It will also be found to be the Most Useful and Reliable Guide to the British, American, and Colonial Hospitals and Asylums, Medical Schools and Colleges, Religious and Benevolent Institutions, Dispensaries, Nursing and Convalescent Institutions. By Sir HENRY BURDETT, K. C. B. London: The Scientific Press (Limited). New York: Charles C. Scribner's Sons. Pp. 1103.

THE author states that unavoidable circumstances are responsible for the delay in the appearance of this volume, which maintains the excellent character established by its predecessor. It is a mine of information in statistical data of eleemosynary institutions in England and America, and the author's analysis of the facts presented adds materially to the value of the work.

He advocates the establishment of pay wards in general hospitals, in which the patients can be attended by the visiting staff or by their own physician. The fees collected from them should be expended, in part, in remuneration of the visiting staff. Various methods of accomplishing this purpose have been employed in the United States for many years.

The work is a necessity to every one connected with the administration of a hospital.

BOOKS, ETC., RECEIVED.

Care and Treatment of Epileptics. By William Pryor Letchworth, LL. D., Ex-President of the New York State Board of Charities, etc. Illustrated. New York and London: G. P. Putnam's Sons, 1900. Pp. x–1 to 246. [Price, $4.]

A Manual of the Practice of Medicine Prepared Especially for Students. By A. A. Stevens, A. M., M. D., Professor of Pathology in the Woman's Medical College of Pennsylvania, etc. Fifth Edition, revised and enlarged. Illustrated. Philadelphia: W. B. Saunders, 1898. Pp. xv–16 to 519. [Price, $2.]

Christian Science. An Exposition of Mrs. Eddy's Wonderful Discovery, including its Legal Aspects. A Plea for Children and Other Helpless Sick. By William A. Purrington, Lecturer in the University and Bellevue Hospital Medical College, etc. New York: E. B. Treat & Co., 1900. Pp. 10–11 to 194. [Price, $1.]

Consumption and Chronic Diseases. A Hygienic Cure at Patient's Home of Incipient and Advanced Cases. A Popular Exposition of the "Open-air Treatment," with Latest Developments and Improvements. By Emmet Densmore, M. D., New York: The Stillman Publishing Company. Pp. v–198. [Price, $1.25.]

How Surgery became a Profession in London. By D'Arcy Power, M. A., F. S. A., F. R. C. S. Eng [Reprinted from the *Medical Magazine.*]

Histology and Pathology. A Manual for Students and Practitioners. By John Benjamin Nichols, M. D., Demonstrator of Histology, Medical Department, Columbian University, Washington, D. C., and Frank Palmer Vale, M. D., Assistant in Pathology, Medical Department, University of Georgetown, Washington, D. C. Series edited by Bern B. Gallaudet, M. D. Illustrated with Two Hundred and Thirteen Engravings. Philadelphia and New York: Lea Brothers & Co., 1900. Pp. 7–19 to 458. [Lea's Series of Pocket Textbooks.] [Price, $1.75.]

A Simple and Successful Method of Treating Hæmorrhoids, when Operative Interference is Required. By T. Griswold Comstock, M. D., Ph. D., St. Louis. [Reprinted from the *Homœopathic News.*]

The Effect of Certain Occupations on the Larynx. By Seymour Oppenheimer, M. D. [Reprinted from the *Medical Record.*]

Forty-sixth Annual Report of the New York Infirmary for Women and Children.

Miscellany.

Hæmorrhagic Encephalitis and Myelitis.—At a meeting of the New York Neurological Society, held on January 2d, Dr. Charles L. Dana and Dr. M. G. Schlapp presented the report of a case, which was read by Dr. Dana. The subject was a man sixty-seven years of age who had come under observation last June. There was no clear history of intemperance. His previous health had been good. During the last seven years of his life he had been somewhat of an invalid. On June 4, 1899, he complained of headache and, after taking two cups of tea, went to bed. He fell out of bed a few hours later, and was then discovered to have left hemiplegia. He was removed to Bellevue Hospital. At that time his temperature was 104° F., but it fell quickly. On examination, he could not protrude the tongue, and it was almost immobile. He was paralyzed almost completely on the left side. The lips were decidedly affected. The abdomen was somewhat rigid. The patellar reflexes were normal, and the ankle clonus was absent. Sensation to heat and cold was normal. The urine showed nothing abnormal. Four days after his admission he had a chill, the temperature rose to 105.5° F., and examination of the blood showed the malarial plasmodium. After he had been in the hospital for a week it was noted that there was no paralysis of the right arm or leg, and the most notable feature was the paralysis of the tongue and lips. He was unable to make any distinct articulate sounds. He could swallow and cough, and understood perfectly what was said to him. Death took place on June 25th.

At the autopsy, made by Dr. Dana, only the brain and spinal cord were examined. There were slight œdema and congestion of the arachnoid. The vessels of the base were not atheromatous. In the right hemisphere there was an area of capillary hæmorrhage and softening in the lower portion of the posterior central convolution and the superior part of its marginal gyrus. It involved mainly the deep part of the upper lobe of the fissure of Sylvius. In the centrum ovale there were two or three smaller areas of hæmorrhage. There was no evidence of hæmorrhage or softening in any other part of the cerebrum, cerebellum, or pons. The spinal cord showed two foci of softening, one in the upper dorsal and the other in the lumbar regions. The brain was hardened in formalin, and then stained by various methods. The microscopical examination showed in the affected area much dilatation of the blood-vessels, small extravasations of blood, and a great proliferation of cells, showing an irritative reaction to the hæmorrhages—in other words, the evidence of an encephalitis, apparently secondary to the disease of the blood-vessels. There were also small areas of softening of the brain in the neighborhood of these hæmorrhages, also the result of the breaking and obliteration of the vessels. The walls of the latter were somewhat thickened, but gave no evidence of a syphilitic process. Sections and drawings were exhibited. The examination of the rest of the brain had failed to show any evidence of sclerosis. The medulla oblongata showed no evidence of softening or of inflammation. Examination of the spinal cord had not yet been completed. The cord showed a small centre of poliomyelitis in the dorsal region. Below this was a more extensive poliomyelitis, involving both the anterior and posterior horns. The appearances presented very closely resembled those described by other writers on encephalitis hæmorrhagica.

Regarding the occurrence of speech disturbance in a case of this kind, Dr. Dana said that in the great majority of cases of this form of hemiplegia there was no speech disturbance except a few days after the attack, which might easily be ascribed to shock. In another class of cases of hemiplegia there was a slight uncertainty in speech, lasting for several months. In still another class the hemiplegia was associated with some difficulty of speech, and sometimes true aphasia. Dr. Dana had never observed any sensory aphasia in these cases. When the lesion was well below the cortex, involving the motor axones and the collaterals going to the opposite hemisphere, there would be some hesitation in speech; when the lesion was still lower down, there would be no disturbance of speech at all. There was a very general opinion prevailing to the effect that bulbar palsies of cerebral origin were due to lesions in the lenticular nucleus, but it seemed to him that our present knowledge of the anatomy of the brain made such a view untenable. Concerning the disturbance of the tongue, Dr. Collins, who had given a critical description of this subject, placed the tongue centre in the anterior and upper part of the foot of the anterior central convolution. Some of the centres of the movements of the tongue were probably deep in the fissure of Sylvius, and not subject to experimental stimulation.

In the case under discussion it was interesting to note that mastication and deglutition had not been impaired. The case also brought up the subject of nonsuppurative encephalitis. It seemed to be established that there was an infectious hæmorrhagic encephalitis in infants; also that there was a hæmorrhagic poliomyelitis in adults, also an acute hæmorrhagic encephalitis of adults due to some acute infection, such as that of influenza. In the case presented there was a distinct history of malarial infection and of alcoholism, and this combination, it was reasonable to suppose, was responsible for the lesions discovered. Such a case might be classified under the name of degenerative hæmorrhagic encephalitis. An examination of the autopsy records of sixty-seven cases of apoplexy showed that forty-two of them were hæmorrhagic, eleven embolic, eleven thrombotic, and three encephalitic.

The Dropsical Dronings of a Poetical Patient.—The *Écho médical du Nord* for December 17, 1899, cites the following from the *Scalpel*. Patients, even when suffering badly, do not always become downcast, as the following verses from an ascitic patient to his physician attest:

"Audi, doctor, me clamantem,
Trista voce lamentantem!
Aqua horrida interna
Ventris plena est caverna!
Diaphragma, in thoracem
Aquæ vi impressum, pacem
Rapit jam pulmoni, omnes
Fere noctes sunt insomnes.
Nunquam autem tulit venter
Meus aquam—phy!—libenter!
Ergo, doctor fae me salvum
Aqua liberando alvum,
Ne sis Fabius *Cunctator,*
Veni Masius *Punctator.*"

The Buncombe County (North Carolina) Medical Society recently elected officers for the ensuing year as follows: President, Dr. H. L. Baird; vice-president, Dr. T. P. Cheesborough; treasurer, Dr. C. V. Reynolds; recording secretary, Dr. J. T. Sevier; corresponding secretary, Dr. E. R. Morris.

The Late Dr. Joseph C. Mulhall, of St. Louis.—The faculty of the Beaumont Hospital Medical College have passed the following:

Whereas, In the loss we have sustained by the decease of our respected friend and esteemed associate, Dr. Joseph C. Mulhall, we, the faculty of the Beaumont Hospital Medical College, are desirous of testifying our respect for our departed member and of expressing our earnest and sincere sympathy with the family in their great bereavement and with the medical profession in the loss of one of their ablest and most enlightened fellows. Therefore, be it

Resolved, That we express our sincere condolence to the family of our deceased *confrère* in this their hour of affliction.

Resolved, That the Beaumont Hospital Medical College has lost one of its most valued and efficient teachers.

Resolved, That the entire medical profession, of which our departed fellow was a shining light, has sustained an irreparable loss.

Resolved, That these sentiments be duly inscribed in the records of the college and that an engrossed copy thereof be presented to the family of the deceased.

The Medical Society of City Hospital Alumni, of St. Louis.—The programme for the meeting of January 18th included a paper entitled Studies of Lactoserum and Other Cell-sera, by Dr. Carl Fisch, and one on The Climate of Tucson, Arizona, and its Value as a Health Resort, by Dr. Arthur W. Olcott.

The Late Dr. William A. Hammond.—The board of directors of the New York Post-graduate Medical School and Hospital record with profound sorrow the death of their former colleague, William A. Hammond, M. D., surgeon-general of the United States Army, retired. On the 4th of April, 1882, Dr. Hammond, who was then professor of diseases of the mind and nervous system in the University Medical College of this city, assisted in the organization of the faculty for the Post-graduate Medical School. He was professor in the college from the date of its opening, in October, 1882, at 209 East Twenty-third Street, until 1888, when he resigned his position and removed to Washington, D. C., where he suddenly died on January 5, 1900.

Dr. Hammond was an accomplished executive officer, punctual, scientific, and thorough in his work as a clinician, and he always attracted large classes by the force and clearness of his teaching. It was, perhaps, owing to his effort, more than to any other member of the faculty who resigned from the University of the City of New York, that the initial step was taken which led to the organization of the Post-graduate Medical School. During the early years of its struggle for existence, Dr. Hammond gave most unsparingly of his talents, his time, and his pecuniary resources toward its successful establishment, which he saw achieved during his term as professor.

He was most genial and courteous in his relations with his fellows. His memory will always be cherished by them with hearty appreciation of his great qualities.

The directors order this record to be spread upon their minutes, and a copy thereof sent to the surviving members of his family.

[Signed.] D. B. ST. JOHN ROOSA, *President;*
ANDREW H. SMITH, *Vice-President;*
GEORGE N. MILLER, *Secretary.*

The Medical Society of the State of New York.—The ninety-fourth annual meeting will be held in Albany on Tuesday, Wednesday, and Thursday, January 30th and 31st and February 1st, under the presidency of Dr. Willis G. Macdonald, of Albany. Besides the president's address (to be given at the close of Wednesday's morning session), the programme includes the following:

Carcinoma of the Stomach, with Report of Cases, showing Increased Hydrochloric Acid, by Dr. A. MacFarlane, of Albany; Age, Sex, and Season as Factors in Nervous Disorders, by Dr. William C. Krauss, of Buffalo; Facial Paralysis, by Dr. William M. Leszynsky, of New York; Strabismus, by Dr. D. B. St. John Roosa, of New York; Non-operative Treatment of Strabismus; its Possibilities, by Dr. A. Edward Davis, of New York; The Differentiation and Treatment of Ocular Affections commonly met with in Family Practice, by Dr. Frank Van Fleet, of New York; The Significance of Earache in Children, by Dr. T. H. Halsted, of Syracuse; The Teaching of Therapeutics to Undergraduates, by Dr. Eli H. Long, of Buffalo; The Teaching of Therapeutics to Post-graduates, by Dr. Reynold W. Wilcox, of New York; Weil's Disease, with a Pathological Study, by Dr. Harlow Brooks, of New York; The Treatment of Temperatures and Heart Failure, by Dr. A. Jacobi, of New York; The Pathogenesis and Treatment of Acute Croupous Pneumonia in the Light of the Newer Pathology, by Dr. James K. Crook, of New York; The Classification of Infectious Diseases, by Dr. William H. Thomson, of New York; Human and Bovine Anthrax, by Dr. Frank W. Ross, of Elmira; Bovine Tuberculosis, by Dr. James Law, of Ithaca; The Preparation and Use of Tuberculin, with Remarks upon Our Present Knowledge of the Difference between Human and Bovine Tuberculosis, by Dr. V. A. Moore, of Ithaca; a discussion on Prophylaxis in Gynæcology, by Dr. Henry C. Coe, Dr. W. Gill Wylie, Dr. Ralph Waldo, Dr. J. Clifton Edgar, and Dr. William M. Polk, of New York; The Medical Examiner for Life Insurance and his Responsibilities, by Dr. S. Oakley Vander Poel, of New York; The Value of the Neisser-Fränkel Stain in the Routine Examination for the Diphtheria Bacillus, by Dr. J. S. Billings, Jr., of New York; Experience with the Angeiotribe, by Dr. J. Riddle Goffe, of New York; a discussion on State Care of Tuberculous Patients, by Dr. Edward O. Otis, of Boston, Dr. Vincent Y. Bowditch, of Boston, Dr. Edward R. Baldwin, of Saranac Lake, Dr. George Blumer, of Albany, Dr. Enoch V. Stoddard, of Rochester, the Hon. Horace White, of Syracuse, and the Hon. Otto Kelsey, of Geneseo; Catheterization of the Female Ureters, by Dr. Charles P. Noble, of Philadelphia; The Modern Urethroscope, its Value and Limitations, by Dr. W. K. Otis, of New York; A Unique Case in Obstetrics, by Dr. F. H. Parker, of Auburn; Uterine Fibroids Complicated by Pregnancy, by Dr. W. F. Ford, of Utica; Cirsoid Aneurysm of the Ear, by Dr. William S. Cheesman, of Auburn; The Importance of Early Recognition of Acute Inflammation of the Middle Ear by the General Practitioner, by Dr. Edward B. Dench, of New York; Further Investigations into the Cause of Cancer, by Dr. Roswell Park, of Buffalo; Ureteral Calculus, by Dr. Francis H. Markoe, of New York; The Curability of Leprosy, by Dr. George Henry Fox, of New York; Some Questions about the Care of the Hair, by Dr. George Thomas Jackson, of New York; The Surgery of the Nasal Sæptum and the Turbinal Bodies, Illustrated with Anatomical Specimens, by Dr. Robert C. Myles, of New York; A Contribution to the Surgery of the Stomach, by Dr. H. Beeckman Delatour, of Brooklyn; The Spleen, its Shape and Relation to the Chest Wall and Abdominal Viscera, by Dr. Luzerne Coville, of Ithaca; Surgical Operations in Hospitals for the Insane, by Dr. William Mabon, of Ogdensburg; Supravaginal Hystero-myomectomy, by Dr. I. S. Stone, of Washington, D. C.; Intraabdominal Adhesions, by Dr. A. L. Beahan, of Canandaigua; Atresia of the Vagina, by Dr. F. W. Higgins, of Cortlandt; The Management of Puerperal Infection, by Dr. F. W. Seers, of Syracuse; an address on Education and the Profession of Medicine, by A. V. V. Raymond, D. D., LL. D., president of Union University; an address on Rational Therapeutics *versus* Christian Science and Similar Superstitions, by James M. Bulkley, D.D., LL. D., of New York; Report of Two Cases of Rupture of the Liver, with Recovery, by Dr. H. Beeckman Delatour, of Brooklyn; Cerebro-spinal Fluid Discharged through the Nose, by Dr. W. Freudenthal, of New York; The Nervous Relation of Disturbances in Nutrition, by Dr. H. S. Drayton, of New York; and Recent Advances in the Treatment of Insomnia, by Dr. Reynold W. Wilcox, of New York.

Dr. Beck's Article on the Detection of Biliary Calculi.—In this article, published in our last issue, Fig. 1 was accidentally turned bottom upward.

The St. Louis Medical Society of Missouri.—The programme for the meeting of Saturday evening, January 20th, included the presentation of a hundred and seven nasal polypi removed at one sitting, by Dr. H. W. Loeb; the presentation of a case of complete exstrophy of the bladder, by Dr. Bransford Lewis; and a paper entitled Fifty Years' Study and Practice of Rhinology, from 1849 to 1899—Comments to Date on the Practice and Methods of that Period, by Dr. Thomas F. Rumbold.

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Original Communications.

A VISIT TO THE PLAGUE DISTRICTS IN INDIA.

By LEWELLYS F. BARKER, M. D.,
AND
JOSEPH MARSHALL FLINT, M. D.,
JOHNS HOPKINS UNIVERSITY, BALTIMORE.

WHILE returning to America from the Philippines, the writers crossed the wider part of British India, and were able to observe at Poona one of the severest outbreaks of bubonic plague that the Eastern Empire has experienced. In addition, opportunity was afforded of noting the methods used in dealing with plague in other parts of India, notably in Calcutta and Bombay, where since the first epidemic the disease has never entirely died out, and has become practically endemic. West of Suez outbreaks of plague have recently occurred in Alexandria on the Mediterranean and Oporto on the Atlantic, in Astrakhan, and very recently cases have been established in New York, imported from Brazil.

In the old foci in Hongkong and India the disease is still endemic, and from the former of these points came the infection of the cases recently reported in Manila and Honolulu. Conditions exist among the natives and Chinese of these two American colonies that favor the spread of the plague. Only the most stringent measures on the part of the American sanitary officers can prevent the outbreak of serious epidemics and the repetition of scenes not unlike those we saw in Poona.

These facts indicate that for the present, at least, the disease is spreading rapidly enough to make it worth the while of any power with a long, exposed coast line and a large foreign trade to follow its advance carefully, though it is probable that if it appeared in a well-ordered Western city rigorous quarantine and stringent sanitary measures would soon stamp it out. A *résumé* of personal impressions and of notes gathered from various sources may, it is thought, prove of interest to the readers of this journal.

The ordinary clinical and pathological features of the disease are now well known; it constitutes a symptom-complex, notably in the bubonic form, that affords little difficulty of diagnosis. The appearance of fever, associated with painful glandular enlargements in the groin, axilla, neck, or region of the epitrochlear gland, after a period of incubation lasting variously from three to nine days, with severe headache, nausea, and vomiting at the onset, roughly indicate the cardinal symptoms of typical bubonic plague. The fever varies between 103° and 105° F., but often rises as high as 108° F. During convalescence the fever falls by lysis usually, by crisis rarely.

As in many other acute infectious diseases, there is a leucocytosis varying between 12,000 and 28,000 and a synchronous oligochromæmia, the hæmoglobin varying between sixty-five and eighty per cent. of normal. Some of the buboes suppurate, others resolve, but all are painful; the pain, in fact, is so severe that continuous application of the ice-bag is often necessary for its relief. The course of the disease is variable; in fatal cases it may terminate within forty-eight hours after the onset or, as often happens, five or six days intervene before the death of the patient. The death-rate varies with the race and sanitary environment of the sufferer. Cases with suppurating buboes often drag on for months before the pyæmia ceases, but, fortunately, after the first few days the pus in such cases is usually sterile.

In certain of the obscurer forms of plague—namely, the pneumonic, tonsillar, and hæmorrhagic types, as they are classified in Bombay—the disease simulates more or less closely other conditions, and the problem of diagnosis is accordingly rendered more complex. Microscopic examination of the sputum and cultures from the blood in pneumonic cases lead to a diagnosis; the plague bacilli are found in great quantities in the sputum in true plague pneumonia. The observer should bear in mind, however, that occasionally double infections of the pneumococcus associated with the *Bacillus pestis* are to be expected. In those cases in which the tonsils or postlingual adenoids form the portal of entry, buboes in the deep cervical chain of lymphatic glands usually develop. Moreover, hæmorrhages into the serous surfaces of the stomach and intestines associated with buboes in the mesenteric glands occur in the hæmorrhagic type. In these cases it is supposed by many that the infection takes place through the alimentary tract. One should remember, however, that in all cases of plague there is a general tendency to hæmorrhage, and that among the commonest autopsy findings are cutaneous petechiæ and hæmorrhagic extravasations into the mucous membrane of the stomach, the great serous membranes, and the serosa of the great veins.

Clinically, it is sometimes difficult to distinguish the plague from early malaria or relapsing fever, but the microscope can be relied upon to show either the malarial parasite in the one instance or Obermeier's spirillum in the other, and so at once a positive and satisfactory diagnosis can be made. But in the East, especially in large epidemics where the cases are many and the trained assistants are few, the aids of clinical microscopy can rarely be obtained. At the Arthur Road Hospital in Bombay we have seen cases of combined infection—malaria with plague, and plague with relapsing fever. It is said that the infection combined with malaria is not so fatal as simple plague alone, an observation which gains in interest when it is recalled that the Italians assert that the presence of bacteria other than plague bacilli attenuates the virulence of the most virulent plague bacilli. Another rather rare form of the disease which we saw with Khan Bahadur Dr. Choksey in Bombay is that associated with a unilateral or bilateral parotiditis, the portal of entry in these cases being probably through Stenson's duct. Enlargements of the cervical chain of lymph glands usually accompany these infections of the parotid.

Three years ago (1896–'97) there was an outbreak of bubonic plague in Bombay which attracted for a time the attention of the world. The world, however, soon lost its interest, but the epidemic, unfortunately, did not lose permanently its severity, for with alternating periods of repression and recrudescence the plague in Bombay, like the intermittent eruptions of a volcano, has been a constant source of danger to the rest of India. Each year, in fact, has been worse than the preceding, as the total death-rate has progressively increased, and at no time since the original outbreak has the disease been entirely stamped out. The greatest number of fatalities occur during the spring months, but throughout the year the death-rate follows tolerably definite curves, which repeat themselves annually with great regularity. Besides the high spring mortality, there is a recrudescence in the autumn at the beginning of the rains. This is believed to be due to two causes: on the one hand, the increased humidity protects the plague bacilli from desiccation, and, on the other, the rains drive the natives into their poorly ventilated houses, where they are more exposed to infection. The country is protected, so far as the necessities of commerce and racial prejudice will permit, by an inefficient system of quarantine established at the principal railroads. Foreign countries are more or less guarded by the loose provisions of the Venice convention. The situation, accordingly, is equivocal, to say the least, and so far as Bombay is concerned, the plague has been increasing, and the outlook, in the eyes of the plague authorities there, is indefinite and unhopeful.

We do not think we exaggerate when we say that it is impossible for any one who has not some acquaintance with the Indian character to appreciate the difficulties and obstacles faced by Colonel Weir, the chief health officer of Bombay, and his staff in dealing with the plague epidemics in the Bombay presidency. In Europe or America the authorities, under similar conditions, would at least meet with intelligent appreciation on the part of the people, and probably with active and sympathetic assistance. In India the authorities encounter nothing but prejudice, bigotry, and resistance. Opposition to every measure, resistance to every effort intended for the good of the sufferers greet the health officers. Hatred, resentment, and deception on the part of the natives are the only rewards that the plague authorities get for fulfilling a duty that is as dangerous as it is arduous. But, notwithstanding these facts, they have persevered, yielding to tradition and prejudice only when necessary to avoid the shedding of blood. All that was possible under the existing circumstances and conditions appears to have been done. The government and the authorities have spared neither time, trouble, nor money in testing every measure that offered the least possible hope of aiding in any way either the cure or prevention of the disease. Anywhere but in the Orient sanitary regulations would be of service, but, especially with the Aryan, stringent measures are impossible. As Kipling says:

"Now it is not good for the Christian's health to bustle
the Aryan brown,
For the Christian riles and the Aryan smiles, and he
weareth the Christian down."

And Colonel Weir adds, more sadly than poetically, the results of his own experience: * "So bitter was the opposition to the capture of rats that monstrous stories were invented of our officers throwing live rats on the fires, as if to give pleasure to men tired and weary, and knowing the danger of handling rats, doing what they need not do, even if a sense of humanity did not forbid them. And so events proceeded; we were opposed on all sides, whether in the treatment of buildings, in the treatment of human beings, or in the treatment of animals. People whom we found sitting up and whom we begged to lie down, even before we left their doors, were again sitting up, and more than once before we left the building we heard that they were dead. Dr. R. said to me, 'It is useless to give advice to the people.' We had to deal with some people more careful of the lives of animals than of their own. We had to carry out measures opposed to the interests, the customs, and the dearest feelings of some classes of the people. Such a pass had we come to that picking up a few sick pigeons caused excitement and nearly led to a riot, and peaceful bunniahs † for ten sick pigeons threatened to raze the city."

The plague measures which were first instituted could only be enforced at the point of the bayonet, and culminated finally in the plague riots, in which several soldiers and policemen were killed and many injured. The natives became convinced that a sacrifice was necessary to palliate the gods who control the plague. This sacrifice must be some of the sahibs. Strangely enough, after the death of a few soldiers in the riots, the death-rate from plague suddenly diminished—to the natives, seemingly a strange confirmation of a stranger fetich, so firmly do the natives believe in the acceptability and potency of their sacrifice that Colonel Weir says that more Europeans will be killed as an offering to the gods at the next great recrudescence of the pest. In this connection we recall that at the palace of the maharajah in the deserted city of Ambér,‡ in the blood-

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* *Report on the Outbreak of Bubonic Plague in Bombay, 1896–'97.* Bombay, 1897.

† Traders.

‡ See Kipling. *Letters of Marque.*

besmeared temple, to this day a sheep is sacrificed each morning to Kali in lieu of the human sacrifices made there a few years ago.

The people in Bombay believed further that when their sick were removed from the crowded, smoky houses, the air draughts of a well-ventilated hospital injured them. They said: "We would rather die of plague than have you enter our houses, interfere with our mode of life, and move our sick." Plague rules interfere with the strict caste lines of the Hindu; house-to-house inspection violates the seclusion in which the Mussulmans guard their women. It is dishonor for a Hindu to be touched by any one of low caste; it is disgrace for a Mohammedan to permit his women to be seen. Religious customs were violated by the plague regulations, and the religious love of animals by the natives prevented the authorities from killing even pest-afflicted rats. The friendliness and goodwill of the authorities were misinterpreted; sanitary measures were regarded as oppressive; everything was misunderstood. Incredible stories about the doctors and health officers were current among the natives, and in view of the arduous labor and self-sacrificing devotion of these men such stories as the following have an almost pathetic note: "At times the patients were found dead when brought to the hospitals in ambulances, and the corpses were sent direct to the burning grounds. Added to this heavy mortality, the means used to resuscitate and support their strength, especially subcutaneous injections, were misconstrued, and it was openly said that the doctors were killing the patients in order to stop the further ravages of the epidemic. It was also freely stated that the patients were purposely killed and their hearts taken out in order to send them to her Majesty, the Queen-Empress, to appease her wrath, on account of the disfigurement of her statue, which occurred in the beginning of the epidemic. All this culminated in a raid on the hospital in the forenoon of the 29th of October, 1896, when a large number of mill hands, estimated from eight hundred to a thousand, with a view to wreak their vengeance on the hospital staff for the alleged killing of patients, took part. Road metal was freely thrown at the hospital staff, some of which, reaching the wards, broke the tiles and injured some patients." *

To fully understand all this opposition and antipathy it would be necessary to review the entire history of the Indian people; to trace the resulting forces of environment and heredity, that have given them these strange prejudices and traditions; the conservatism that leads them to strenuously resist progress, decline innovation, prefer dirt to cleanliness, darkness to light, hot, smoky atmospheres to good, fresh air, and dirty, packed houses to open chawls. The explanation of it all is partly religious, partly economical, and partly social, as these traditions are all cemented by the heredity of hundreds of generations.

But, notwithstanding the ingratitude and opposition, the plague authorities went steadily forward, applying the measures just as far as they were tolerated; but it must be said that in great part the native had his way and was busy in "wearing the Christian down." The authorities came to realize that the stringent measures could not be enforced and did more harm than good. Rather than endure them, trade was abandoned and the people fled, while the rebellious rioted; so from an Occidental point of view the modified measures were and are practically of no value, but they represent the maximum Oriental toleration of Occidental innovation. A visit to India impresses one decidedly with the truth of Kipling's verse—

"Oh, East is East and West is West,
And never the twain shall meet
'Till earth and sky stand presently
At God's great judgment seat."

During our stay in Bombay we were taken through the hospitals, bazaars, and native quarters by Colonel Weir, the chief health officer, whose kindness and courtesy to us were not exceeded even by the energy with which he fights the plague. And he is perhaps the one plague official in India who, above all others, is regarded by the natives with a mixed feeling of respect, admiration, and devotion. He has done his duty, but he leavened that duty with a degree of toleration and respect for Indian prejudices and traditions that was made possible only by his profound knowledge of the native character. As in all countries with cheap food and a high birth-rate, the life of the poorer classes in India is one of filth and squalor. Before the epidemic Bombay had a population of about eight hundred thousand, and of this number probably a hundred and fifty thousand did not earn more than six annas (twelve cents) a day. The overcrowding is shocking, for in one six-story tenement, with about one hundred feet frontage, Captain Howell told us he counted fifteen hundred people, enough population for a large-sized American village. These houses are veritable human ant hills. Some of the rooms are no larger than ordinary steamer cabins, many without any light or ventilation except through doors that open on long, narrow halls; they have damp dirt floors and the walls are begrimed with smoke, for cooking fires are kindled directly in the rooms. A ghostly light from the small fire on the floor or a flickering tallow dip revealed to us the rooms and their occupants. In such places, especially in the Kamathipura districts, we frequently found eight or ten inmates making a picture of life as dark and gloomy as the walls of the chambers in which they lived.

One morning we were taken to the Arthur Road Hospital, out near the Matalaksmi and Chinchpokli, the chief asylum for contagious diseases in Bombay. Large,

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* Khan Bahadur Dr. Choksey's *Report on the Arthur Road Hospital*, p. 213; *Report on the Outbreak of Bubonic Plague in Bombay, 1896-'97*. Bombay, 1897.

well-ventilated, permanent pavilions, with free air spaces between the floor and walls and walls and roof, form the nucleus of the hospital, while a great many temporary chawls, built of bamboo with palm thatch, accommodate the extra patients during the epidemic. There the sufferers are carefully treated by a native staff under Khan Bahadur Dr. Choksey, who has charge of the hospital. The wards are under the control of English trained nurses who are especially enlisted in England for plague service in India. They are assisted by native ward boys, who do most of the work. While we were in Bombay the plague was at its quiescent period, but notwithstanding there are on an average from ten to twenty patients in the hospital even when the mortality is lowest. Besides plague we saw some fifteen cases of relapsing fever and small-pox in the hospital, as these diseases are also treated there. A bad case of relapsing fever, Dr. Choksey says, is worse than plague. The temporary wards are thoroughly whitewashed and kept scrupulously clean. The floor, singularly enough, is made of cow dung and quicklime in alternate layers, which solidify and become as hard and level as a billiard table. Instead of washing it, a new layer is put down at intervals. It is odorless and much more agreeable than its composition would warrant one to believe. From September, 1896, to February, 1897, inclusive, some 939 cases of plague were treated at this hospital. Of this number, 306 died within twenty-four hours of admission, 165 within forty-eight hours, with a total of 683 deaths, or a mortality of 73.26 per cent. This can be said to be an average, although the mortality varies among Mohammedans and the various Hindu castes, depending possibly on their hygienic conditions. Among the Chinese in Hongkong the death-rate is over ninety per cent. The persistent kindness with which he is treated is sure in the end to win the confidence of the native. But in the mean time, until that confidence is won, the sacrifice of life will be enormous, and at the same time distrust and suspicion more than double the difficulties in dealing with the disease.*

Religious belief and caste restrictions make it impossible to treat all cases indiscriminately in common hospitals. The Hindus, for example, never eat meat, while the Mussulmans do. Parsees demand one thing, the Weaves another. Some natives receive the European treatment, others flatly refuse it. So, to avoid strenuous opposition resulting in the secretion of cases, which is regarded as the most effective way of spreading the disease, there has been a general relinquishment of the stringency of the plague measures; sectarian and class hospitals have been established in various parts of the city to meet the prejudices of the people. In many of these the treatment of cases by native doctors is permitted. Many rich and enlightened natives have rendered the government valuable assistance in the work, and not a few have built and equipped hospitals from their own private means for the benefit of those of lower caste or sect. This has progressed, so that in May, 1897, there were some forty-one of these hospitals in Bombay open for the reception of plague patients.

The general preventive measures advised after the disease once appears include the immediate rigid quarantine of the infected region by an effective, if necessary military, cordon. Plague is a disease which not only affects rats but is spread by them. Accordingly, measures should also be taken to quarantine them or encompass their death speedily. Cases should be removed to hospitals ventilated and lighted to the maximum as the absolute essentials, whatever other conveniences they may have, for the experience in the East yields this conclusion: "The organism does not seem to be able to develop virulently or to survive where there are free currents of air, and hence it passes by and little affects well-ventilated buildings." All those who have been exposed to infection or have been in contact with cases are known as "contacts," and should be kept for a certain period in segregation camps, where daily inspection can be held until the period of incubation is over. All infected dwellings should be disinfected and limewashed. The earlier custom in Bombay of opening the roofs to admit light and air has since been abandoned, proper disinfection being deemed sufficient to kill the virus. The proper disposal of the dead and the fumigation of effects are, of course, looked out for as in an epidemic of any infectious disease. A house-to-house inspection for new cases in places where they are not reported is wise if it is tolerated, but in the Orient this has been one of the most fertile means of causing the concealment of cases, and concealment is regarded as probably the most effective means of spreading the disease. An example of the extremes and cruelty to which relatives will go to prevent the plague inspectors from finding their sick is shown by the following experiences of Colonel Weir:* "During an inspection in Majpoda a curious incident occurred in the ground floor of a dwelling occupied by dhobies.† The room was filled with clothes, and, on examining them, we saw protruding from underneath one bundle of clothes a pair of elbows, and, pulling the bundle off, we found a dhobie underneath, almost dazed and suffering from plague. All the clothes were disinfected and the dhobie taken to a hospital. In the same district we detected a Seedee, or negro boy, suffering from plague. His mother most fiercely resisted his removal, and, in order to pacify her, we had to send for the king of the Seedees, who, on his arrival, had the boy removed to a hospital."

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* The courtesans of Bombay are relegated to the Kamathipura district, where the slums of the city are located. There the squalor is greatest and the life is most unsanitary. The plague naturally rages here, and the death rate is higher than in any other part of the city, but strangely enough not a single case has been reported among this unfortunate class, although they are surrounded by the disease. The explanation, the authorities believe, is to be found in the fact that the houses of these women are open always to air and light, and that their life is more sanitary than that of their plague-stricken neighbors.

* *Loc. cit.*, p. 189.

† Washerwomen.

As a preventive measure against plague, Haffkine, an investigator formerly in the Pasteur Institute but now in the service of the Indian government, has, as is well known, prepared a prophylactic consisting of dead cultures of the *Bacillus pestis*, injections of which are said to confer a considerable degree of immunity against the disease. Haffkine has been given a part of the magnificent old Government House at Parel as a plague laboratory. This has been thoroughly equipped for the production of the prophylactic on an extensive scale. One morning during our stay in Bombay we were driven to the laboratory by Captain Howell, of the Indian Medical Service, and presented to Dr. Melne, the chief assistant, who in Dr. Haffkine's absence controls the manufacture of the serum. Step by step we were enabled to follow the production of the prophylactic, from the preparation of the medium to the packed cases ready for shipment. Briefly, the methods are as follows: A kilogramme of finely chopped goat's mutton is placed in a solution of HCl and heated in an autoclave at a pressure of three atmospheres for six hours in order to make the albumin and peptones. The fluid is then filtered and neutralized, and the filtrate diluted to three litres, when it is sterilized, forming the medium on which the pure cultures of the bacillus of plague are grown. These are obtained from a fresh case of plague in rather an unusual way. In India, ordinary Petri dishes are almost useless, owing to the humidity of the atmosphere, which enables molds to grow up between the dish and its cover and thus to infect the plate. A flask of bouillon is inoculated with plague material and the diagnosis of the organism is made from a peculiar cultural characteristic of the plague bacillus first described by Haffkine as the stalactite growth.* It is an extremely aerobic organism and grows on the surface of a bouillon culture, but after eight days or two weeks sends down long processes into the depths of the medium that resemble not a little the stalactites from the roof of a grotto. Such a culture flask illuminated by a candle held behind it displays a surprising and characteristic picture not given by any other organism. The purity of such a culture is then tested microscopically, when it is transferred to a Pasteur flask, from which the larger three-litre vessels are inoculated. Hundreds of these are planted at once and placed on long tables in a dark room, as thermostats are unnecessary in India on account of the high mean temperature. Here they remain until the stalactites are formed, when the flask is well shaken and another crop allowed to grow. In this way three successive formations of stalactites are obtained, a process which takes on an average about six weeks. The culture is killed by placing the flask in a water bath at 60° C. for three hours, when it is transferred to small bottles, tested, dated, and is then ready for use.

Haffkine's experiments indicate that the precipitate of dead bacteria without the clear fluid injected into animals excites a marked local reaction with only slight constitutional phenomena, while injection of the clear fluid without the dead bacilli causes marked general phenomena with slight local reaction. The whole sterilized culture is used as the vaccine against the plague.

The bottles are shipped from the laboratory all over India, and also to other parts of the world. Haffkine advises about two centimetres of the prophylactic at a dose, but at Hubli, where it has been used most, the dosage was somewhat larger, but was varied with the personal equation of the patient and the virulence of the dead culture. The injections are made with a large hypodermic syringe, and as a rule two successive inoculations are advisable. Accordingly, the first dose is put into the loose subcutaneous tissue over the insertion of the left deltoid, while the second, a week or so later, is injected over the triceps. The reaction consists in an elevation of temperature, headache, and a feeling of general malaise, but this is only transitory and soon disappears. According to Colonel Weir, who was himself inoculated, the local reaction is not as violent as it is generally believed to be, for associated with the slight tumefaction there is pain only about as severe as that resulting from slight bruises. In patients twice inoculated an agglutination reaction toward virulent cultures of the organism is always obtainable with the serum of the individual. The duration of the immunity thus conferred is at present unknown, and naturally could only be determined either by analogy from the persistence of the Widal test or from the accumulation of a mass of statistical evidence bearing upon this point. Like every other innovation, the antiplague inoculation has met with the bitterest opposition on the part of the natives. As the prophylactic fluid is made from meat broth, the high-caste Hindus will have none of it, but Haffkine, to meet this opposition, is endeavoring to prepare the substance by using as a substratum gluten or other substances free from meat extracts. In Bombay for a time the natives were paid for being inoculated, but for political reasons this procedure was abandoned by the government. At present the only concessions granted are immunity from certain of the quarantine regulations; that is to say, an inoculated individual is permitted to pass the quarantine after a detention of two instead of ten days upon the exhibition of his inoculation certificates. For a time after the institution of this custom certificates were stolen and sold in the bazaars. Inasmuch as physical descriptions are inadequate for purposes of identification, the authorities determined to use the thumb print as a means of establishing identity, a proceeding that will remind Americans of Mark Twain's Pudd'nhead Wilson and the Fortune Teller in his *Life on the Mississippi.*

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* Haffkine, W. M. Remarks on the Plague Prophylactic Fluid. *British Medical Journal*, London, 1897, vol. ii, p. 1461.

The most extensive application of Haffkine's plague prophylactic was made by Surgeon-Captain Leumann * at Hubli, where some twenty-four thousand natives were inoculated twice, and some ten thousand others received a single dose of the prophylactic. Hubli is a mercantile town of some fifty thousand inhabitants, so that the majority of the citizens have been protected, even allowing a large percentage for the outsiders who received injections. The advantage of double or single inoculations in heightening the degree of immunity is shown by the following significant figures from the report of E. L. Cappel to the plague commissioner.†

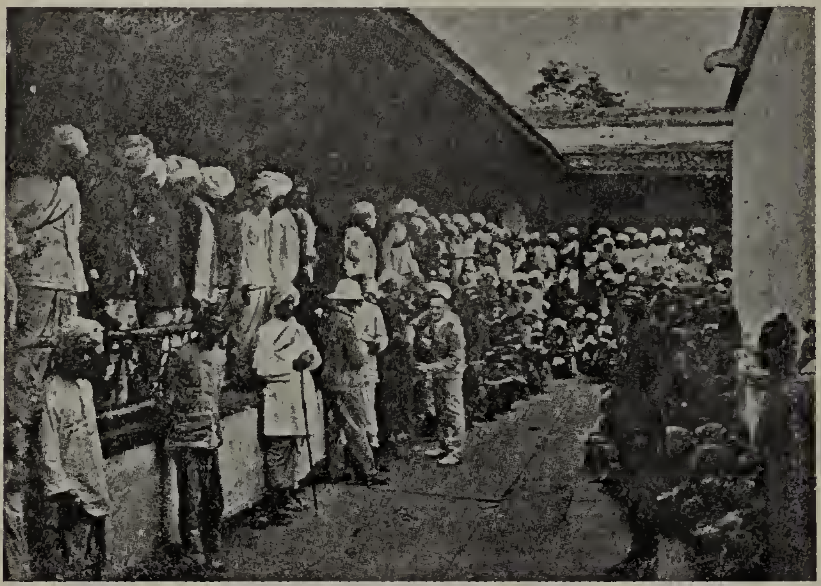

Fig. 1.—Preventive inoculation for plague in India. (From Surgeon-Captain Leumann's report.)

Of 4,926 single inoculations, forty-five persons contracted the disease, with fifteen fatalities.

Of 3,387 double inoculations, two persons contracted the disease, with one fatality.

Even more significant is the fact that among the uninoculated at this period of the epidemic 657 persons to the thousand died in a single week, although the inoculated were exposed to the same general conditions and environment. Mr. Cappel's own words on this point sound almost incredible. "If this experiment had failed, the results, judged by the actual mortality among the uninoculated, would have been appalling. All possible sanitary measures in the shape of disinfection, unroofing of houses, and segregation were applied concurrently with inoculation, as the government is already aware; but the rate of mortality among those who held back from inoculation rose at one time to a height which I believe has never been approached elsewhere—standing in the third week of September at the figure of 657 per thousand per week." Perhaps the results of this gigantic experiment can best be presented by the following table, which we have excerpted from Surgeon-Captain Leumann's report. The conclusions to be drawn from it are self-evident:

Dates.	Census of Hubli.	Number of non-inoculated inhabitants.	Number of inoculated inhabitants.	Plague deaths among the non-inoculated.	Plague deaths among the inoculated.
Five weeks, from May 11, 1898, to June 14, 1898	Fell from 50,000 to 47,427	44,573	2,854	47	1
Week ending:					
June 21, 1898....	47,082	41,494	5,588	22	3
June 28, 1898....	47,485	39,042	8,443	29	1
July 5, 1898.....	46,537	36,020	10,517	55	6
July 12, 1898....	46,518	33.255	13,263	34	6
July 19, 1898....	45,240	29,716	15,524	82	7
July 26, 1898....	43,809	24,112	19,697	100	15
August 2, 1898...	43,707	21,031	22,676	140	16
August 9, 1898...	42,768	15,584	27,184	272	19
August 16, 1898..	40,441	10,685	29,756	386	61
August 23, 1898..	39,400	6,367	33,033	371	41
August 30, 1898..	38,210	4,094	34,116	328	28
Sept. 6, 1898....	38,382	2,731	35,469	227	34
Sept. 13, 1898...	38,408	1,116	37,292	138	47
Sept. 20, 1898...	39,142	937	38,205	106	55
Sept. 27, 1898...	39,315	603	38,712	58	20

Another form of treatment used in the Bombay hospitals is the *Heilserum,* also prepared under the patronage of the government at the Parel Government House by the assistants of Professor Lustig,* whose name it bears. The specific toxine of the plague bacillus, according to Lustig, is a nucleoproteid (in the sense of Hammarsten) residing within the body of the organism, and, owing to its insolubility, fluid cultures like those employed in the preparation of the diphtheria antitoxine can not be employed. Accordingly, the bacillus is grown on special agar plates some twelve to fifteen centimetres in diameter, and in two or three days at room temperature the typical ground-glass appearance of the plague bacillus is patent on the surface. The growth from three such plates is scraped off and dissolved in 0.75 or one-per-cent. KOH. The nucleoproteids are then precipitated with acetic acid and can, after filtration and desiccation, be kept for any length of time in the form of a powder. The serum is manufactured in the body of the horse, into which the toxine, after having been dissolved in a solution of Na_2CO_3, is injected. The factors concerned in the violence of the reaction are (1) the age and virulence of the culture used, (2) the concentration of the potash solution used to dissolve the bacteria, and (3) the condition of the horse. So these conditions determine the frequency with which the operation is repeated. In three months the jugular may be tapped, some blood withdrawn, and the serum prepared in the usual way. The serum has not yet been extensively employed in India, principally because of its scarcity and also on account of the prejudice of the natives. It has, however, been used in some five hundred cases, with sixty per cent. recoveries and a forty per cent. mortality, while the death-rate in untreated natives may run as high as eighty per cent. Those who are engaged in making the serum maintain that much better results than those indicated in the above percentage can be obtained by increasing the number of healing units in the serum. In one of his articles Lustig states that he succeeded in curing completely twenty-six out of thirty cases of plague with his serum.

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* *Report No. 7,569 of 1898.*

† *Ibid.*

* *Cf.* Lustig, A. Relazione sul risultato delle ricerche fatte in India negli animali e nell' uomo intarno alla vaccinazione preventiva contro la peste bubbonica e alla sieroterapia. *Rendic d. R. Ist. d. stud. super. prat. e d. perfez.*, Firenze, 1897; also, Lustig, A., and G. Galeotti. Versuche mit Pestschutzimpfungen bei Thieren. *Deutsche medicinische Wochenschrift*, Berlin, 1897, p. 227; and Schutzimpfung gegen Beulenpest. *Ibid.*, p. 289.

Another treatment based entirely on empirical grounds has been used at the Mahratta Hospital in Bombay. It consists in the administration of about four drops of a one-per-cent. solution of atropine every few hours until its effects are observed in the pupils. This treatment, it is stated, has a marked influence in clearing up the furred and coated tongue of plague, and seems to exercise a general beneficent effect on the condition of the patient. Unfortunately, however, only a small number of cases have been treated thus far, so that at this time absolutely nothing as to the real value of the drug is known. The serum of Yersin, somewhat similar to that of Lustig, has been used in India, but the results obtained by its use were not satisfactory, although it must be acknowledged that the number of cases upon which it was judged was ridiculously small. It may be worthy of note that Yersin's serum possesses agglutination power toward virulent cultures of the plague bacillus.

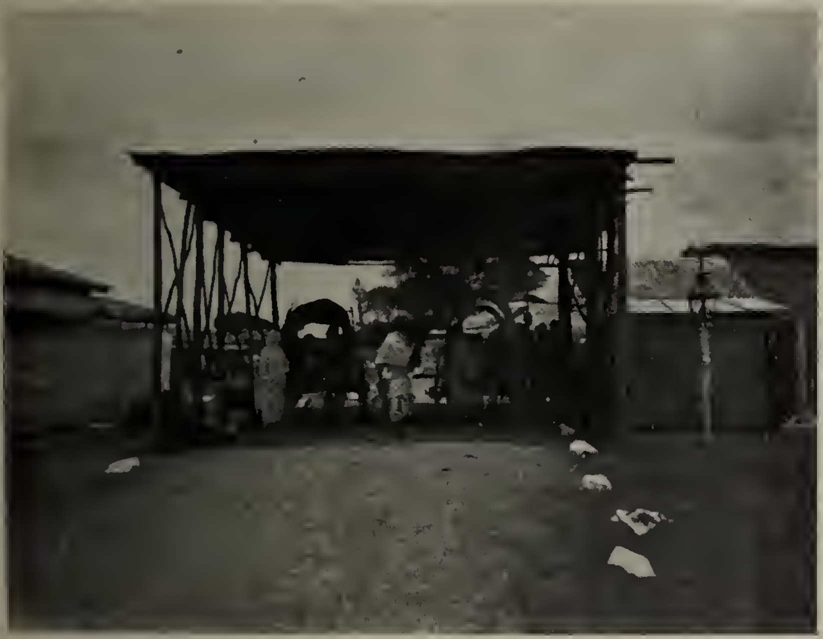

FIG. 2.—Entrance to Plague Hospital at Poona; plague patients arriving on bullock carts.

Bombay, like Hongkong, has great opportunities for the study of plague, and the English authorities do everything in their power to facilitate the investigations of visiting scientists. The German government sent a pest commission to Bombay in 1897. It consisted of Messrs. Gaffky, R. Pfeiffer, Dieudonné, and Stricker, and was subsequently joined by R. Koch. The full report of the commission has been published in the *Deutsche medicinische Wochenschrift,* and makes interesting reading. The commission sent out in the same year by the Royal Academy of Sciences in Vienna also did excellent work. The main results attained were published in the *Wiener klinische Wochenschrift* of that year. Wyssokowitz and Zabolotny also studied plague in Bombay on behalf of the Russian government, and we learned further that even the Egyptian authorities had delegated experts to study the disease in the same city. These researches, together with the brilliant studies of Dr. James Lowson, Dr. Aoyama, and Dr. Wilms in Hongkong, have since the discovery of the causative

FIG. 3.—Major Windle, I. M. S., in charge of Plague Hospital, Poona.

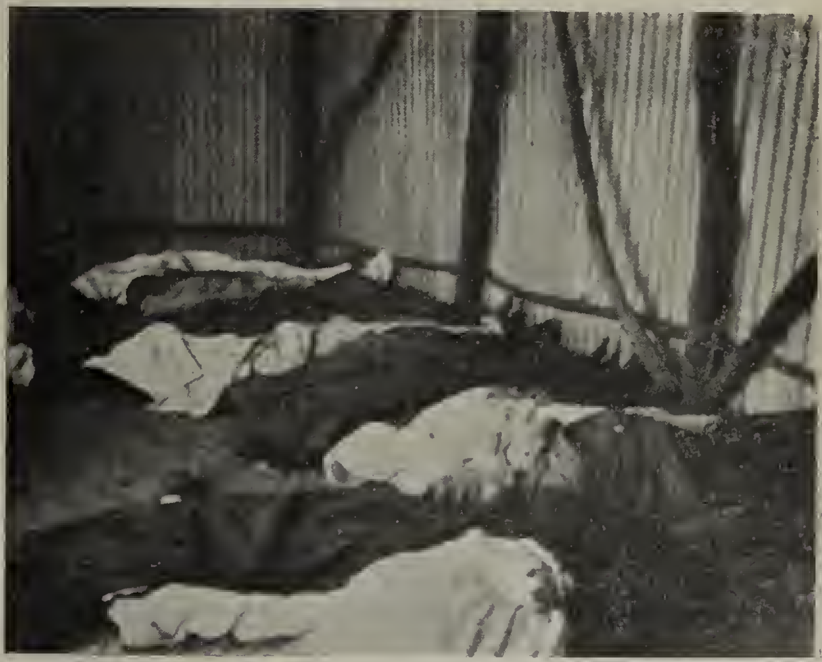

FIG. 4.—Bodies of patients dead of plague on floor of one of the compartments of the mortuary, Plague Hospital, Poona.

bacillus advanced very considerably our knowledge of the disease.

The sanitary regulations enforced in India depend on the amount of innovation and degree of control that the conservative natives will tolerate. Briefly, the points observed are (1) isolation of the infected area; (2) immediate report of cases and instant removal to the hospitals; (3) segregation of contacts; (4) death of rats; (5) disinfection of premises and effects that have been exposed to the disease; (6) prevention of overcrowding and general sanitary improvement of the infected area. Domestic commerce between infected and non-infected districts is controlled and protected by railway inspection and the establishment of detention plague camps for suspects. At certain stations outside of an infected city the railway compartments are locked. These are opened at the next stopping place under police supervision, when every native is forced to undergo plague inspection. The doctor takes the temperature and feels for buboes, but the examination, however, is superficial, and naturally those cases in the incubation period prior to the appearance of the fever are not apprehended. In Kurrachee all natives are compelled to bathe in a weak solution of carbolic acid, while their effects are at the same time sterilized by steam. International commerce from the infected ports and the world in general is governed by the tenets of the Venice convention, which provide that the effects of Lascars and native passengers shall be sterilized on shore before the ship sails. These rules are more or less impracticable, so that they are observed only in the letter and not the spirit of the law.

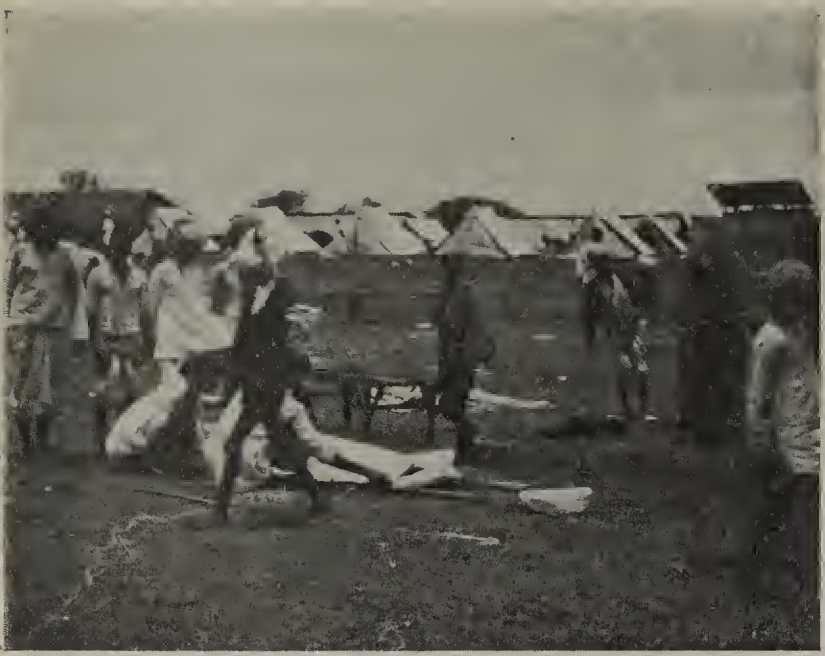

FIG. 5.—Preparation for burial, Plague Hospital, Poona.

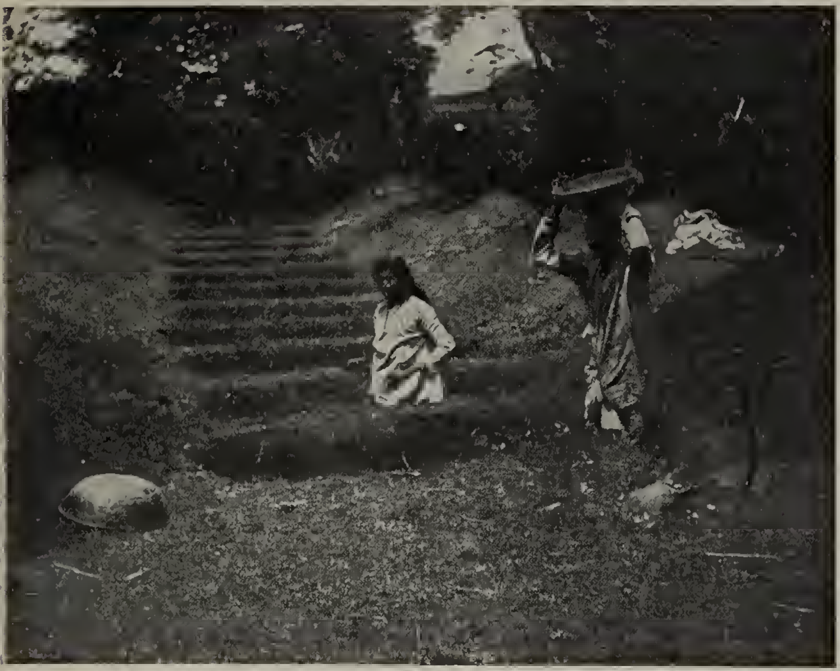

FIG. 6.—Graves for Mohammedan dead, Plague Hospital, Poona.

Our observations of plague in India ended with a visit to Poona, where the real ravages of the disease can be appreciated. Here the words plague-stricken and the "abomination of desolation" seem inadequate because they do not convey the horror of it all. Poona lies about a hundred and fifty miles southeast of Bombay in the Western Ghâts, and is, during the hot season, the seat of government of the Bombay presidency. For the south it forms one of the hill stations, and in the outlying cantonments a regiment of the Indian army is garrisoned. As the train rolled into the crowded station and we alighted after a cool and refreshing ride in the mountains we were astonished at what we saw. The population of the city had already been reduced one third by flight and the disease, but the panic still prevailed and the exodus continued. Hundreds of natives rushed into the third-class compartments, and when these were full those left fell asleep on the platform waiting for the next train. The palm-bordered road from the station to the hotel led through the English quarter, and it was hard to realize from the picturesque bungalows and pretty tropical gardens that this was a pestilence-ridden city, and at the time we believed that the reports concerning the city must have been exaggerated. The quiet, deserted streets seemed

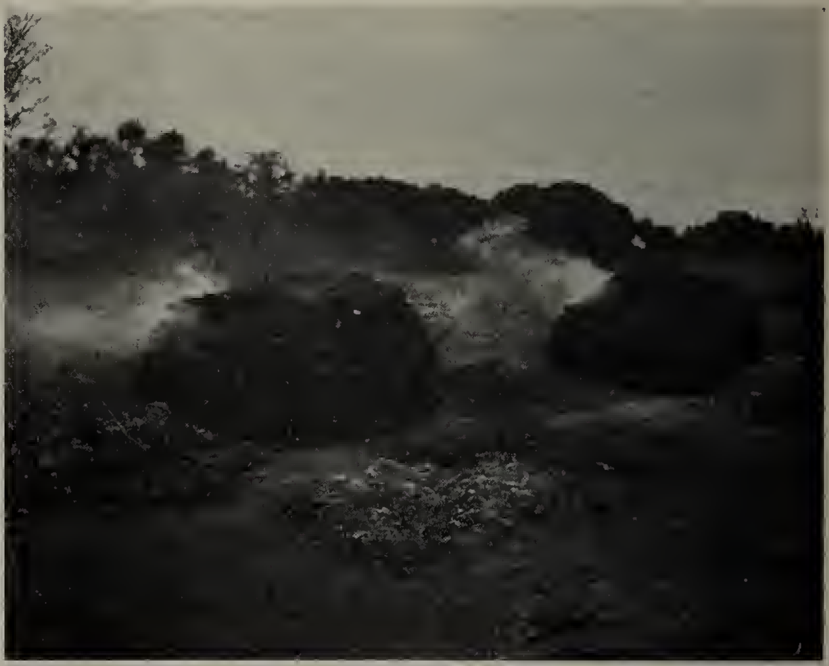

FIG. 7.—Funeral pyres of Hindus, Plague Hospital, Poona.

natural enough in the early morning, but we noted that most of the villas on either side of the road bore the legend "To Let." After a bath and a substantial breakfast we drove into the main city.

Twice before Poona has been ravaged by the plague, and each succeeding epidemic, unfortunately, has been worse than the preceding. In February of the present year the chief plague authority stated that the disease had been stamped out of the city. In March and April the death-rate considerably increased; and in July the disease appeared in its worst form, carrying off from a hundred and fifty to a hundred and sixty people a day. Normally the city has a population of a hundred and forty thousand people, but in five months it had dwindled to sixty thousand. But as the population went down the mortality went up, and even at the time of our visit still persisted at the rate of a hundred and fifty deaths a day. Such a rate of mortality in New York would mean about ten thousand deaths a day, seventy thousand a week. Even in Poona enough people die in a month to populate a prosperous American city. We immediately went down to pay our respects to Major Reed, the chief plague authority, who kindly delegated one of his district inspectors, an intelligent native editor, to take us through the plague houses.

In driving through the streets it was obvious that some serious calamity overshadowed the place. The bazaars, instead of being crowded with a shouting, laughing mass of natives, were nearly deserted. The few pedestrians who were left walked slowly, talked quietly, and seemed silent and frightened. The whole town maintained the quiet of a gigantic sick-room. All the characteristic joyousness of an Indian city had vanished and an abnormal stillness prevailed. This quiet of night persisting in broad daylight tended to depress the visitor, and, to heighten the general dismal effect, a drizzling rain began to fall. At the turn of a corner a Mohammedan funeral passed, headed by chanting Mullahs bearing clanking cymbals in their hands. The body, borne shoulder high on a litter, was covered with a white muslin cloth and a few wild flowers, while the emaciated face with its open, staring eyes gazed blankly at the cloudy sky. People at the roadside looked on with apparent unconcern, for in these past months funerals had been frequent occurrences; that they felt keenly was, however, obvious to a close observer, for they never laughed nor smiled. Who among them knew that Kismet might not name him next? Even the children played quietly at the roadside as if they too felt the horror of the situation, for most of them, no doubt, had seen mothers or relatives carried either to the burning ghâts or the large fields of new-made graves.

Our guide a little further on led us into the court of an old Hindu temple. Here on the floor of a little room at one side of the yard lay a girl of sixteen in a comatose condition. The rapid, irregular plague heart, the blood-stained vomitus oozing from the corner of her mouth, and a bubo in her right axilla established a diagnosis which probably sealed her fate. She was waiting to be carried to the hospital in a bullock cart, to be numbered, perhaps, among the forty per cent. who die within twenty-four hours of admission. As we stepped into the court the naked yogi before the shrine, with ash-covered body and hideously painted face, bowed and leered at us, seeming to typify all of the horrid superstitions and traditions of his race.

At the outskirts of the city lie the segregation camps, where "contacts" and the inhabitants of the infected quarter report for daily medical examination. Otherwise they are unmolested and unrestricted, and go to their vocations in the morning and return to the camps at night. Accordingly, the chief value of the camps is to provide more sanitary dwellings, and in a measure to protect the natives from exposure to the disease. The huts are rude and simple and afford protection but no comfort. The Poona police, who have suffered severely during the plague because of their arduous duties in protecting so many deserted houses and assisting the district plague inspectors, have been removed to camps in the suburbs, where they live in airy, sanitary tents. On the road to the general plague hospital bullock carts laden with plague patients were frequently passed. Those recently attacked may be seen sitting up, older cases lie in the bottom of the cart, while occasionally a patient walks unassisted into the hospital. On arrival at the hospital the carts stop under a rude *porte cochère*, where each patient is registered and, accompanied by a history sheet and a temperature chart, is assigned to a ward. During August there were on an average one hundred admissions a day and eighty daily discharges which left by way of the morgue. So the size of the hospital, then holding about eight hundred patients, was increasing every day, as new wards were constantly under construction.

Major Windle, of her Majesty's Indian Medical Service, is in charge of the hospital, but the task of Hercules in the traditional stables was simple compared with the problem confronting the British officer. With insufficient European help he is handicapped by the prevailing panic among the natives. His dhobies desert daily, and the gravediggers, soon fear-stricken by the endless procession of the dead, usually run away before they have accomplished much. Ward boys to attend the patients are almost impossible to obtain. Money or large salaries prove unattractive because the fear of the pest has thoroughly frightened the few natives who remain.

Nevertheless, the task is faced cheerfully by the trained nurses and the medical supervisor, who do all in their power for the comfort of the suffering patients. They overcome the insurmountable with a cheerfulness that is worthy of emulation.

The wards are cheap bamboo and matting shacks, made with corrugated-iron wainscoting and large air spaces beneath the roof, protected by wind sails so arranged that they can be lowered at night. The interior is frequently limecoated and the floors, like those in the temporary hospitals in Bombay, are made of alternate layers of cow dung and quicklime. The cow dung is diluted with water until it is about the consistence of thin porridge and is then spread over the floor in an even layer. It dries and is covered with lime, making it odorless and sanitary. The patients rest on mattresses of knotted rope, something like a thick fishing net stretched over a rude frame, but covered by woven red blankets that are frequently sterilized and washed. The food is good and the treatment symptomatic, consisting chiefly in the frequent administration of stimulants. During the height of the epidemic, one patient on an average died every fifteen minutes and was carried from the wards to the morgue on a stretcher. Four corrugated-iron shanties placed side by side constituted the mortuary, one compartment being reserved for each of the great religious castes—that is to say, the Christian, Mohammedan, and high and low caste Hindus. The Parsees were placed in the mortuary with the Christians.

We stood by the mortuary for twenty minutes, and in this time saw eight bodies prepared for burial. On stepping into a compartment reserved for one of the Hindu castes we counted thirty-two bodies stretched on the floor waiting to be claimed. The caste funeral rites were interesting. The body is laid upon the bottom of an upturned bath tub and put through some sort of ablution, after which it is removed either to the burying ground or the burning ghat beside the river, depending on the religious persuasion of the deceased.

Mohammedans are covered with white cloths and wild flowers and are buried in shallow graves, while Hindus are placed upon a funeral pyre consisting of dried cakes of cow dung, which is fired from the top and slowly cremates the body. Relatives often leave when the skull explodes, but others remain until the incineration is complete. Some of frugal inclination sell the ashes to speculators, who scratch away the ruins of the pyre and search for melted jewelry.

The trip to Poona was a rare experience in the horrible! Even to those inured to scenes of suffering and accustomed to the presence of the dead, it left the impression of a dreadful nightmare that weeks of residence in one of God's own countries have not yet removed. The terms *plague-stricken, pestridden,* and *pestilence* can only have their full meaning to those who have actually witnessed such scenes; and when we left them it was with a profound sense of gratitude that, after all, the West was not the East.

The Influenza in Southern Europe.—A Rome dispatch to the *Sun,* dated January 27th, stated that influenza was so prevalent in Italy and Spain that the Pope had ordered special prayers for its cessation.

MALARIAL HÆMATURIA.

By BAT SMITH, M. D.,
ACTING ASSISTANT SURGEON, U. S. ARMY.

History.—A disease known for many years in many lands, under different names, such as hæmorrhagic malarial fever, hæmorrhagic paludal fever, *fièvre mélanurique des pays chauds,* pernicious icteric fever of Madagascar, up-country yellow fever, yellow chills, swamp yellow fever, black jaundice, bronze jaundice, lead jaundice, malarial hæmaturia, etc.

Prior to the civil war between the States, malarial hæmaturia seems not to have attracted the attention of American physicians in any great degree. As late as 1867, in the March number of the *New Orleans Medical and Surgical Journal,* we find the following from the pen of Dr. Francis Barnes: "In the interior of Louisiana, in the most malarial regions of it, there is a singular and very fatal affection, which has not yet received a name, which I shall describe, and let another give it one."

Dr. R. T. Michel, an able and eminent physician of Montgomery, Alabama, calls it a malignant malarial fever, and gives an admirable and accurate description of the symptoms, yet, strange to say, he dates the history of the disease from the year 1867, and, furthermore, states that it is a fever peculiar to the southern part of the United States.

In 1886 Dr. R. H. Day read a paper before the state medical society at Baton Rouge, Louisiana, in which appears this statement: "The literature of hæmorrhagic malarial fever is very meagre, and dates back only a few years in the past. Our old authors do not mention it, if I recollect rightly, and even our recent standard authors are nearly if not quite as silent."

Strange, indeed, it is that the history of a disease which has for the last thirty years engrossed so much of the attention of the medical profession should have been so entirely overlooked.

More than twenty-three centuries ago Hippocrates (B. C. 480) recognized the disease and accurately described its symptoms, rightly classing it among those of malarial origin.

This hæmorrhagic malarial fever was well known to the Greek, Roman, Arabian, and Egyptian physicians, as a careful examination of their literature will plainly show. From the earliest ages it has been frequent and fatal in the countries bordering on the Euxine and Mediterranean Seas.

Aretæus, the famous physician of Cappadocia, who lived in the first and second centuries of the Christian era, and who was considered to rank next to Hippocrates, clearly describes hæmorrhages from the kidneys in malignant malarial fever, as distinguished from those hæmorrhages produced by other causes. His works, written in singularly elegant and concise Ionic Greek, are in a state of almost complete preservation.

In the reign of the emperor Trajan, Rufus described, with minute accuracy, the different shades and colors of the urine in malignant malarial fever. Cornelius Celsus, called the Roman Hippocrates, flourished in the reign of Augustus Cæsar and introduced the Hippocratic system among the Romans. He called attention to the dangerous symptom of blood in the urine during severe attacks of fever, portending danger, and pointing to a fatal termination. He also affirms that the bilious and malignant fevers are most frequent in low and marshy countries, and prevail to the greatest extent in the latter part of the summer and autumn.

Galen, also, did not fail to recognize the disease, and alludes to blood in the urine of patients suffering with malarial fever as one of the gravest symptoms. Hæmaturia in malarial fevers was carefully noted by many more of the older writers; among others we may mention Prosper Alpinus, who states that malignant malarial fevers are both frequent and fatal in Egypt after the recession of the Nile. He thus describes the symptoms: "They begin with nausea, great sickness at the stomach, extraordinary inquietude, vomiting of acrid bile, putrid bilious stools, and alarming hæmorrhages from the kidneys."

Paulus Ægineta, the celebrated Greek physician of the seventh century, fully corroborates the statements of his earlier predecessors, and gives an interesting account of hæmorrhages from the kidneys in malarial fever. His descriptions of diseases are brief, succinct, and also complete and exact.

Henry de Mondeville, physician to Philip the Fair (le Bel), King of France, A. D. 1306, and, perhaps, the foremost medical man of his age, was well acquainted with hæmaturia in malignant malarial fever, and looked upon it as a symptom of great danger.

London, before the great fire of 1666, was frequently visited by malignant forms of fever, causing great mortality, especially among the poorer classes. The water supply was very deficient, the sewerage bad, the streets narrow and dirty. The houses, built of wood, were very inferior and overcrowded. The fevers were characterized by frequent and alarming hæmorrhages, yet, whether hæmorrhagic malarial fever prevailed, I am unable to say.

Hæmorrhagic malarial fever has been described by numerous reliable physicians in many lands: In France, by Jean Senac, physician to Louis XV; by Le Roy at Montpellier; by Boullon and Alibert in central France, in the early part of this century. In Italy, by Lancisi in 1695, and later by Torti and others.

Dutrouleau, surgeon in the French navy, found it to exist in the Danubian provinces, and also in French Guiana, where Dr. Lauré pronounced it to be more fatal than yellow fever. Daullé declares this hæmorrhagic malarial fever to be identical with the fever of Madagascar, as described by Lebeau (pernicious icteric). The name *fièvre mélanurique des pays chauds* was given to it by Béranger Ferraud, of the French navy, and it was looked upon as an endemic fever by the French physicians on the west coast of Africa.

James Lind, in the last century, observed the fever in many of the West Indian islands, and remarked upon its great mortality among the Europeans.

Daniel Blair also reported the disease in the West Indies, Trinidad, and the Guianas. It exists in Brazil, and we have ample proof of its existence at the Mauritius, at Surinam, and in Java, proving very fatal to the Hollanders.

The reports of John Huxham, written nearly a century and a half ago, as well as those of J. Ranald Martin, Robert Jackson, and others of more recent date, show to what an alarming extent the disease prevails in India.

In our own country the disease was observed by a number of physicians many years before the close of our civil war. Among others, I may mention Dr. C. Glidden Young, of Louisiana, 1843. Dr. T. H. Anderson, of Mobile, Alabama, was acquainted with the disease prior to 1850. Dr. A. G. Maby, a much-beloved and highly respected member of the medical profession, said in 1870: "It is a mistake to suppose that this is a new disease. More than twenty-five years ago I treated in the vicinity of Selma, Alabama, cases of intermittent fever presenting in a marked degree all the symptoms characteristic of these cases at the present day."

Much more could be written relative to the history of malarial hæmaturia, but I have only attempted to adduce proof that the disease is not peculiar to the southern part of the United States; that it is not a new disease, but that it was well known to the ancient physicians from the earliest ages.

Ætiology. — Malarial toxæmia of long standing seems, as a rule, to be the *conditio sine qua non.* Usually the alarming symptoms of malarial hæmaturia do not manifest themselves until the subtle poison has wrought through the economy such destructive changes as to render the organs unfit to perform their proper functions. The universality of the presence of malaria in alluvial regions is a well-established fact; there springs from the soil an enemy which, though silent and unseen, instills into the system a virulent poison which deteriorates the constitution of those whom it does not immediately kill.

That malarial poison is specific admits of but little doubt. There is no other known agent capable of producing the same morbid phenomena.

It is true, many have at different times claimed to have discovered the identity of the bacteriological characters of the poison, but no one has as yet demonstrated its specific poisonous action upon the system. There is no doubt, however, that the malarial poison, whatever be its nature, brings about an extensive destruction of the red blood-corpuscles, and also to a greater extent in malarial hæmaturia than in any other form of the disease. The most destructive forms of malignant malarial fever, producing splenic and hepatic enlargement, hæmaturia, heart clot, heart failure, and failure of the nerve centres, are brought about by the almost unobserved action of the malarial poison upon the constituents of the blood, and more particularly upon the red blood-corpuscles.

Anatomical Changes.—The anatomical changes here described are based upon autopsies made by the writer at different periods of his professional career.

The exterior of the body generally is of a yellow color; as a rule, somewhat darker than in yellow fever. Sometimes the skin is of a bronze color. There is usually quite an extensive discoloration of the more dependent portions of the trunk and extremities, due to hypostasis. Muscles are of a dark reddish color. Rigor mortis is strongly marked.

In yellow fever we find a soft, flabby heart, due to fatty degeneration, the sarcous elements of Bowman having undergone a retrograde metamorphosis and become converted from albumin into fat. In malarial hæmaturia, however, we find a firm, natural heart, except as to color, which is of a dark purplish red; the sarcous elements of its muscular structure seem to be in a normal condition, and but few fat globules are to be found.

Occasionally I have found evidences of congestion in the lungs, but, as a rule, they were in an apparently healthy condition.

The stomach is usually in a congested condition, containing at times a quantity of a blackish or greenish substance, in which are found a few blood-corpuscles and large quantities of bilious matter; reaction acid. The entire mucous membrane of the stomach is generally found discolored by bile.

The liver is enlarged and of a dark slate color, and when cut into the color is of a deep bronze. Under the microscope a large number of dark pigment particles are to be seen; in many of the hepatic cells a large number of pigment granules are deposited.

The gall bladder is much distended and filled with a viscid bile, of a very dark green, almost black, appearance, and of a granular consistence.

The lesions found in the kidneys were by far the most important revealed by these autopsies. The exterior of the kidneys were of a dark bluish color, presenting here and there on their surface dark blackish spots. When opened, the same dark bluish-red color was found. The whole organ was heavily congested—in fact, the lesion amounted to an active inflammation. All the blood-vessels, from the largest to the smallest, were distended with blood. There was also evidence of hæmorrhage in the Malpighian corpuscles, filling a large number of the tubuli uriniferi with coagulated blood; these latter structures were, in addition, desquamated, and almost entirely denuded of their pavement endothelium, in many instances entirely so.

Among the anatomical changes presented to us in fatal cases of malarial hæmaturia is the remarkable condition of the brain. A due appreciation of the morbid process in this organ is of great importance, as it furnishes an explanation of the cerebral disorders accompanying these paroxysms.

The dura mater nearly always presents a normal appearance, except that in a few instances I have found it very slightly tinged with bile. Its larger blood-vessels were filled with blood, as also were the capillaries. The gray substance of the cerebrum and cerebellum is usually of a dark-gray color, and its different layers are difficult to distinguish. This dark ashy color of the cortical substance was, as the microscope demonstrated, due to an engorgement of the capillaries with blood of a dark granular appearance. The dirty yellowish color of the white substance was due to the same cause. The increased amount of blood in the brain rendered its weight abnormally great. This congestion is ordinarily attended by a considerable effusion in the subarachnoid space, and is not infrequently accompanied by an opacity of the arachnoid membrane. The anterior and posterior horns of the lateral ventricles, but especially the posterior horns, were in most cases found filled with an abnormal amount of yellowish serum. The vessels of the walls of the lateral and fourth ventricles, like the vessels of the pia mater, gave evidence of a heavy congestion. Urea was found in large amount throughout the substance of the brain.

The spleen was always found enlarged far beyond its normal size, and in one case I found it ruptured. The pulp is of a muddy color, soft, so as to be easily torn, and, though it does not turn red, yet it assumes a slightly brighter color when cut into and exposed to the air. The changes in this organ seem, in the earlier stages of malarial fever, to be nothing more than a simple hyperæmia—that is to say, a heavy congestion of the veins belonging to it—but as the disease progresses a profuse exudation seems to occur within the parenchyma of the organ, accompanied by a heavy deposit of pigment, imparting to it its peculiar dark muddy color. The capsule is frequently subject to inflammatory action. All the ganglia of the sympathetic are of a yellow tinge, due to bile.

The ganglia of the sympathetic in yellow fever are of a rose color, showing active congestion. This fact was pointed out by the writer in 1874 in the May number of the *New Orleans Medical and Surgical Journal.* This statement was subsequently corroborated by Professor H. D. Schmidt, of New Orleans, in 1878, and again in 1885.

The blood in malarial hæmaturia is generally thin and watery; its serum of a golden yellow color, due to bile pigment, which imparts a yellow color to the different organs. The red blood-corpuscles are greatly diminished in number, and are, as a rule, unusually pale, and some of them contain small pigment granules. Under the microscope a large number of pigment granules are to be seen; the white corpuscles also contain pigment granules. No chemical analysis of the blood was made by me; but it is admitted that the fibrin of the blood is diminished in a very marked degree in quantity as well as being deficient in quality. Albumin is present in less than its usual quantity, and the salts of the blood are also wanting to a great extent.

Symptoms.—As stated before, malarial hæmaturia does not manifest itself, as a rule, except in those who have been exposed to malarial influences for a considerable length of time. The attack is sometimes ushered in with a chill; then, again, the first indications are a feeling of languor, weariness, and great faintness, accompanied by yawning, stretching, pain in the back and limbs, a feeling of pressure in the epigastric region, headache, and nausea. These symptoms are soon followed by a sensation of chilliness, not infrequently alternating with flashes of heat. These cold sensations increasing, the chill soon becomes fully developed. The limbs tremble involuntarily, rapid and successive shudders run through the frame, the teeth chatter and the lips quiver, the respiration becomes irregular and hurried. This latter symptom, together with the quivering of the lips, renders the speech indistinct and interrupted. At this stage vomiting often sets in, and it soon becomes severe and distressing. The pulse at this stage is hard and frequent, changing in character as the disease progresses. The tongue is broad and heavily coated, of a greenish cream color, the posterior portion thereof being, as a rule, darker than the anterior; the borders of the tongue are indented, showing the print of the teeth. The gums are generally of a bluish leaden hue. The average duration of the chill is about an hour, but it varies greatly in different cases, exceeding at times not more than a few minutes, and again lasting from three to four hours, and even more. It may assume the form of a mere chilly sensation or shudder, or the attack may be ushered in with the manifestations of the worst symptoms of the disease in all of their terror. The hot stage does not make its appearance suddenly. The chill gradually gives way, being, at first, only interrupted by occasional sensations of heat, a permanent feeling of warmth only coming on by degrees; eventually all traces of the cold stage disappear, when the patient is affected by a universal burning heat, which in some cases becomes almost intolerable. The skin now assumes a golden yellow color, growing deeper as the disease progresses. This color of the skin is always uniform all over the body. At times it comes on very slowly, and again the change is very sudden. Not infrequently it becomes of a deep yellowish green or bronze. The conjunctiva is always very much discolored by bile, but its blood-vessels do not show the heavy congestion which we meet with in yellow fever. The headache, which existed in the cold stage, now increases in intensity, and often becomes very distressing; the vomiting increases, and is in many cases almost incessant. The substance vomited is usually a dark, viscid, grumous bile, with occasionally a trace of blood. Blood, however, is not, as a rule, present in the vomit of malarial hæmaturia. Sometimes we find it, but not often, and even then in small quantity.

Physical examination shows unusual enlargement of the liver and spleen. This condition of the liver and spleen causes the patient to suffer in the right hypochondriac, but more especially in the epigastric, region, just below the ensiform cartilage. This is owing to the pressure upward of the liver against the diaphragm, preventing the lungs from expanding to their full extent and impeding the respiration.

In all cases of malarial fever complicated with hæmaturia which have come under my observation the hæmorrhage has come on during the cold stage, or in a very short time after. The urine is generally of a muddy, brownish-red color, and sometimes of a brighter red, and we frequently find it of brown or greenish black. Microscopical examination shows numerous cells from the kidneys, tubuli uriniferi, discolored by the coloring matter of the bile and blood, and large numbers of blood-corpuscles, a few of them unchanged, or apparently so, but most of them crenated and disintegrated. Chemical examination shows the presence of blood and albumin, also bile, the latter in large quantity. Specific gravity rather low, ranging from 1.013 to 1.017. Reaction of urine *acid.* The pulse in this disease, after the initial chill, is not in keeping with the temperature, its rate being much lower than in other forms of malarial fever. This slow pulse may be due to the effect of the bile in the blood over the nerve centres governing the heart's action.

In some cases death results from exhaustion, brought about by the incessant vomiting and loss of blood through the renal organs. These patients die in a collapsed state, with a small, thready pulse and cold, clammy skin.

In the severer forms of the disease the discharges of bloody urine cease suddenly, followed by a total arrest of the renal functions, and if this missing function of the kidneys is not promptly restored, convulsions, delirium, and death will ensue.

We sometimes meet with cases where, although no suppression of the renal functions exists, a sudden collapse occurs, followed by prostration and coma; the pulse becomes fast and small, the temperature of the body approaches that of the surrounding atmosphere, and death quickly closes the scene. These collapses are due to sudden effusions of liquor sanguinis into the ventricles of the brain.

Many fatal cases are accompanied by intense jaundice, uncontrollable vomiting, and profuse renal hæmorrhages, denoting congestion of the kidneys, rupture of the Malpighian vessels, and almost total desquamation of the tubuli uriniferi.

(*To be concluded.*)

THE
DEVELOPMENT OF THE FEMALE GENITALS AND THEIR LIFE HISTORY.

BY BYRON ROBINSON, B. S., M. D.,
CHICAGO.

THE genitals develop from the Wolffian body. Development is the key to adult structures, as malformations are only arrested growths. From a knowledge of genital development one can understand more intelligently the absence of all or part of the genitals and their non-symmetrical or double development. Inflammatory processes may begin at any time and check growth, resulting in atrophy. Hypertrophy and atrophy are explained by the variation in blood supply. To the scientific physician the genito-urinary development is of the highest interest, as it indicates to him how the flaws of malformation occur. If one takes the fœtus of a pig four weeks old or the human fœtus six weeks old and opens the abdomen, it will be noted that almost the entire abdomen is filled with two organs—viz., the Wolffian body and the liver. The Wolffian bodies lie on each side of the vertebral column, extending from the thoracic to the pelvic diaphragm. They are spindle-shaped, and from the anterior end of each two ducts can be observed coursing to the rectum—the Wolffian and Müller's ducts.

There are three distinct stages to the Wolffian body: The first stage consists of the pronephros, or head kidney, and its ureter or duct. The head kidney quickly ceases to act in the human fœtus, but its ureter or duct in the female becomes the oviduct; in the male it dies out, leaving only the hydatid of Morgagni. Its ureter originally conducted urine, but it soon becomes transformed into an egg channel. The two oviducts coalesce at about their middle third to form the single uterus, the sæptum disappearing from below upward; the distal thirds coalesce to form the single vagina; the proximal thirds do not coalesce, but remain separate and are known as the oviducts. Thus, by coalescence of the ducts (ureters) of the first kidney are formed the vagina and uterus, while the oviducts represent the non-coalesced portions. The hydatid of Morgagni represents the drawn-out end of the duct.

The second stage of the Wolffian body is known as the mesonephron or middle kidney, with its ureter; this is the kidney of fœtal life. The middle kidney atrophies in a fœtal pig in some seven weeks; in the human, in about six weeks. In the female its ureter becomes the duct of Gärtner, while the kidney itself becomes the parovarium—both fœtal relics located in the broad ligaments of adults. In the male the ureter becomes the vas deferens, while its kidney is transformed into the head of the testicle or epididymis. Observe that the duct of the first kidney conducted urine, and finally eggs, while the duct of the second kidney carries urine, and finally semen.

The third stage of the Wolffian body consists of the adult kidney, the metanephron, and its ureter.

The genital ridge grows out of the internal surface of the Wolffian body, and does not show whether it will become testicle or ovary until after ten weeks of human fœtal life.

Notice the important fact that the genitals and the kidney have an identical origin—*i. e.*, the Wolffian body—and are therefore anatomically and physiologically associated in an intimate nerve and vascular blood supply. A disturbance, congestion, and reflex irritation in the one will produce disturbances in the other.

The uterus results from the coalescence of the middle segments of Müller's ducts forming a single tube, as does the vagina from coalescence of the distal third. Coalescence may not be completed, whence double uterus may occur, or at least there may be two uterine cavities with a partial intervening sæptum. The uterus of the infant is almost straight, has a disproportionately long cervix, and a small and imperfectly developed body, which may persist in adult life as infantile uterus. The slight concavity on the anterior surface of the infant uterus develops into the normal anteflexion of adults. In the infant the uterus lies above (outside) the pelvic cavity, behind the bladder, and chiefly rotated toward the right. The demarcation line between the large cervix projecting into the vagina and the short body is the internal os, the narrowest point of the uterine lumen. The peritonæum covers less of the cervix in the infant and girl than in the adult. The cervix lies imbedded in a large mesodermic tissue bed. The uterus gradually sinks into the pelvis by increase in size and also by slowly increasing anteflexion. The growth of the uterus to the completion of puberty is chiefly by addition to its cervix. At puberty the hypogastric plexus and pelvic brain rapidly increases and the uterus suddenly develops in size from a vast increase of blood supply, and the anterior uterine surface lies on the saucer-shaped bladder. Pregnancy still further changes the uterus by increasing the body mass and changing its anteflexion to extension. On the cessation of menstruation, from atrophy of the hypogastric plexus diverting the blood supply, the uterus atrophies and assumes the form and size which existed before puberty. The uterine lumen partially or completely obliterates.

The uterine serosa remains the same during life. It consists of endothelial cells, at the common junction of several of which exists a stoma verum, a little mouth, which is surrounded by granular, nucleated, polyedral cells. The stomata veræ are sphincters to regulate secretion and absorption in the peritonæum. There also exist interendothelial spaces crossed by poloplasmic processes. The uterine subserosium exists slightly on the fundus, considerably on its lateral surfaces, and abundantly about the cervix.

The uterine parenchyma, the myometrium, in the infant consists of smooth muscular fibres with preponderating spindle-shaped connective-tissue cells in both fundus and cervix. In adults the musculature preponderates in the fundus, while the connective tissue preponderates in the cervix. After the menopause the connective tissue prevails over the musculature, becoming hard and tendinous. The arteries atrophy.

The uterine mucosa, the endometrium, possesses cylindrical epithelium and tubular glands. The endometria of the body and cervix differentiate themselves from each other in fœtal life. The endometrium of the body in the fœtus is slightly folded, but soon becomes a smooth, foldless lymphoid membrane about one twenty-fifth of an inch thick, abounding in spindle- and round-shaped elements. The endometrium of the cervix in the fœtus preponderates in connective tissue, forming folds radiating from anterior and posterior rhaphe, known as the arbor vitæ. In parous adults the spindle- and round-shaped cells are quite equal in the uterus. After the menopause the endometrium atrophies and the spindle cells increase over other elements. The presence of muscular fibres in the endometrium is a characteristic feature which explains the frequency of myometritis, as there is no submucous membrane to check infectious invasion from the endometrium to the myometrium. In general the development of the endometrium shows a glandular and interglandular substance.

The glands of the body are tubular, bifurcated, chiefly existing obliquely parallel, lined in adults with cylindrical ciliated epithelia. The glands are relatively few in the infant endometrium and of a cryptlike form. In general, in parous adults the glands are straight and only slightly tortuous, at a distance from each other equal to four times the diameter of the gland, and secrete very slightly. Irregular distribution is pathologic. After the menopause the glands atrophy, disappear, and return to the irregular condition of the infant. Irregular contraction of the interstitial tissue constricts the glands, resulting in obliteration, glandular cysts, and also in irregular distances between them. The glands of the cervix in infants are not regular in structure, partake of the cryptlike and acinous character, and are relatively few.

The principal mass, perhaps two thirds, of the endometrium consists of connective tissue rich in cells. It is a network or support for the lymphoid structures. It is lymphadenoid tissue. In general, the interstitial substance of the endometrium consists of star-, spindle-, and round-shaped cells. The star- and spindle-shaped cells form a reticulated meshwork by the coalescence of their protoplasmic processes in whose spaces lie the round cells.

The oviducts develop by the invagination of the cœlom epithelium of the Wolffian body, beginning about the fifth fœtal week. They are the anterior segments, or thirds, of Müller's ducts, which course parallel to each other from the Wolffian body to the rectum, forming the genital cord; Müller's ducts, gradually approaching each other in the middle line and coalescing to an unpaired canal at their distal two thirds, forming the vagina and uterus. The parts of Müller's ducts which remain as the intraperitoneal portion, and that almost surrounded by peritonæum, the intraligamentous portion, with the segment passing through the uterine wall, the intramural portion, persist as the oviducts.

The oviduct is first an epithelial tube, quite developed at six months, possessing ciliated epithelium at the ninth fœtal month.

The spiral condition of the fœtal and infant oviducts may be due to the rotation during development—*e. g.*, lateral deviation of the proximal and median deviation of the distal segment. The tortuous condition is more probably due to the excessive growth of the length of Müller's duct over that of the mesosalpinx forcing the duct into a looped condition. The object of the developed parous oviduct is to transport an ovum from the ovary to the endometrium, which is accomplished by means of the following factors—viz., (*a*) the fimbria ovarica by contraction draw the infundibulum, the intraperitoneal portion of the oviduct, over the ovary to secure the ovum; (*b*) the oviduct passes through rhythmical peristalsis; (*c*) the ciliated epithelium whips toward the uterus; (*d*) the oviduct secretes fluid, making a canal to float the ovum to the endometrium, and (*e*) the process is due to the oviduct sharing in the rhythm of menstruation.

In pregnancy the oviducts share in the general hypertrophy of the genitals. With the atrophy of the hypogastric plexus at the menopause the oviducts atrophy, the muscular element disappears, and the connective tissue increases while the vessels shrink.

The ovary develops from the median and distal portions of the Wolffian body. That part of the Wolffian body from which the ovary arises, the sexual gland, is covered by germinal cœlom epithelium. At this point of the Wolffian body is developed the well-known primordial follicles so typically seen in sections of embryos of animals. The ovary and testicle can be distinguished from each other macroscopically in the Wolffian body about the tenth fœtal week in the human. The ovary does not possess typical stages of sudden development similar to the uterus and oviduct (the menstrual organ). The ovary ovulates from before birth until the ovarian tissues are worn out. At puberty the ovary simply becomes highly congested and develops ova more rapidly. The life history of an ovum is not yet known, for a human ovulation is not a periodical process, but a progressive process with unknown intervals.

The vagina is the coalesced portion of the distal segment or third of Müller's ducts. It is first distinguished from the other segments of Müller's ducts by a changed form of epithelium which becomes cubic and flat. The hymen is an active proliferation of the vaginal epithelium. In an embryo half an inch long the vaginal epithelium begins to form; the vagina is short, a mere depression or pouch, but it soon assumes a rapid growth. Imperfect coalescence of the distal ends of Müller's duct may result in a double vagina, which is, however, generally accompanied by a double uterus.

The vulva may be observed at the fifth fœtal week as a sagittal slit, known as the cloaca. Opening into the cloaca are two epithelial tubes, the rectum and the urogenital canal. The coalesced distal end of Müller's ducts becomes the introitus vaginæ. There arises on the anterior commissure of the sinus urogenitalis a small elevation, which later becomes the clitoris, and on its lateral borders arise the labia minora.

The labia majora develop from folds of skin on the lateral margins of the cloaca.

The vigorous change in the life history of the genitals must be sought for in the hypogastric plexus and the automatic menstrual ganglia of the sympathetic. The hypogastric plexus remains in a quiescent stage until puberty. At puberty the hypogastric plexus and automatic menstrual ganglia suddenly spring into activity, and an abundant supply of blood is vigorously forced into the genitals, which assume their wonderful monthly rhythm and continue it until the menopause.

After the menopause the hypogastric plexus and automatic menstrual ganglia begin to atrophy. The uterine artery begins to shrink and the abundant blood supply of youth becomes the scant supply of old age. Menstruation ceases. The menstrual rhythm, the first function of woman, arises and subsides in the hypogastric plexus and automatic menstrual ganglia. They are nerves of limited life. The menstrual life of woman is ushered in by nervous phenomena and cessation occurs through the same. The genitals are first most intimately associated with the sympathetic (hypogastric, renal, and ovarian plexuses) nerve, and next most intimately associated with the cranial nerves which are closely related to the sympathetic, as the pneumogastric and trigeminus, and thirdly with the sacral (cerebro-spinal) nerves. Hence, on the advent of womanhood, a change of voice (pneumogastric) and a change of face (trigeminus) are observed. Puberty is often associated with changes in the vocal cords. The breasts assume activity. Their nerve influence enlarges the activity of the blood current. The external genitals rapidly enlarge and become covered with hair and pigmented.

The sudden development of the nerves supplying the genitals invigorates the blood current.

In this article I wish to give credit for the excellent labors of Dr. Gebhard, Dr. Minot, the Hertwigs, and others.

Small-pox in Mississippi.—The latest information shows the disease still widely prevalent, and that the secretary of the State Board of Health has recommended compulsory vaccination.

AN EXPERIMENTAL RESEARCH ON THE TENSILE STRENGTH OF THE SCIATIC NERVE.

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ASSISTANT IN SURGERY AND LECTURER ON GENITO-URINARY SURGERY IN THE COLLEGE OF PHYSICIANS AND SURGEONS, CLEVELAND.

Remarks.—The operation of stretching the sciatic nerve for intractable sciatica is frequently performed, and inasmuch as different surgeons have expressed such widely different views on the question of the tensile strength, a research was undertaken to determine, if possible, a ratio between the weight of the animal and the tensile strength of this nerve. The animals upon which these experiments were performed had been used for other purposes in the laboratory, and these observations were made directly after death. The method of estimating the strength consisted in freeing the nerve as in the ordinary operation of nerve stretching and attaching to it a spring scale which had been previously tested as to its accuracy; then traction was made as nearly as possible at right angles to the axis of the nerve. While an assistant was making the traction, the indicator was closely watched and the number of pounds read off. Inasmuch as the histological structure of the dog is so nearly like that of man, we have assumed the comparison to be fairly applicable.

Literature.—John Marshall * reviews the literature of this subject up to 1883. He states that the breaking weight of the sciatic nerve has been tested by Symington,† Tillaux, Gillette, Trombetta, and others, and they differ most extraordinarily. Their weights vary from eighty-two pounds to two hundred and eighty pounds. Stintzing was of the opinion that the great sciatic nerve would bear 1.8 of the body weight. There have been sciatic nerves broken at a strain of eighty-two pounds. Stintzing was of the opinion that the living nerve may be stretched to the extent of one half the weight of the animal body. Symington experimented with nine bodies within from one to three days after death, and came to the conclusion that a loop of the sciatic nerve would sustain a weight equal to the body. In a greater part of the cases the nerve gave way at the point at which the strain was applied; in the remainder of the cases it gave way at its attachment to the spinal cord.

Physics of Nerve Stretching.—In Valentin's *Physiology*, translated by D. W. Bunton, there is a table showing the relative cohesion of the tissues of the body as follows, in kilogrammes, for the square millimetre of section: Muscle, .06; arteries, .14; veins, .23; nerves, .96; tendons, 5.3; bone, 8. It will be noticed that tendons are given as about six times as strong as nerves. In the *Annales de clinique et de physique* for 1847 is a valuable Mémoire sur l'élasticité et la cohésion des principaux tissus du corps humain, by Wertheim. The following was his method and the result obtained: As long a portion of the sciatic nerve, presenting a tolerably uniform size, as could be obtained was removed from the body, measured, and weighed. One end of it was then fixed and a weight attached to the other. The increase in the length of the nerve was observed, and the weight being removed, its length was taken immediately, and again after a short interval. This process was repeated, the weight being gradually increased each time until the nerve was broken. This was accomplished in a man, aged thirty-five years, by forty-seven pounds; and in one, aged seventy-four years, by fifty-one pounds; in two females, aged twenty-one and sixty years, by fifty-nine and thirty-nine pounds. From experiments on various nerves, Wertheim came to the conclusion that, in proportion to their size, the branches of the nerve were stronger than the main trunk.

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* John Marshall, Bradshaw Lecture at Royal College of Surgeons, England, December 6, 1883. *Lancet*, London, December 15, 1883, 1027-1036.

† Symington, J. *British Medical Journal*, London, 1882, i, 770.

These experiments of Wertheim's did not appear to give the surgeon a reliable guide to the amount of force he might safely apply in the ordinary operation of nerve stretching for two reasons:

1. His experiments being made chiefly with a view to ascertain the elasticity of the nerves, these were subjected to a considerable amount of stretching for some time before a force sufficient to rupture them was applied, and, as is well known, time is an important factor in testing the cohesion of a substance.

2. The nerves being first removed from the body, his experiments afford no information as to the strength of the upper and lower attachments of the nerve.

In order to obviate these objections, I made a series of experiments in which the force was applied, as nearly as possible, in a manner similar to that in the operation of nerve stretching. The subject being placed on its face, the nerve was exposed at the point where it is usually stretched—viz., at the lower border of the glutæus maximus. One end of a strong S-shaped hook was passed beneath it, special care being taken to include the whole of the nerve. The body was then turned on its back and the buttocks supported on one table and the knees upon another. To the lower curve of the hook weights were then rapidly attached until the nerve gave way. By this means the force was applied at right angles to the thigh, as in the operation when the limb is lifted by the nerve; and, by the rapid addition of the weights until the nerve ruptured, the force acted only, as in the operation, for a short time.

Experiments.

Experiment 1.—A man, thirty-seven years old, well developed, but lower limbs œdematous; heart and lungs healthy; liver markedly cirrhotic; a clot in left iliac vein. During life the left limb had become dropsical before the right one. Right sciatic: One hundred pounds failed to break, even after it had been on fifteen minutes; had no heavier weight at this time. Left sciatic: One hundred pounds—the nerve came away, with its connections to the spinal cord in less than one minute.

Experiment 2.—A woman, fifty years, average size and muscular development; aortic disease; lower extremities slightly œdematous. Right sciatic: One hundred pounds—came away from spinal cord in less than a minute. Left sciatic: One hundred pounds—came away as on right side, but almost immediately.

Experiment 3.—A man, twenty-two years old, well developed. Right sciatic: One hundred and twenty-six pounds failed to break. Left sciatic: One hundred and twenty-six pounds failed to break. I had no more weights but turned the body and lifted the lower extremities and as much of the trunk as I could by the nerve, and I failed to break the nerve.

Experiment 4.—A girl, seventeen years old, small for her age and ill developed. Died of phthisis, waxy disease, etc. Right sciatic: Ninety-eight pounds—gave way in less than a minute from spinal cord. Left sciatic: Eighty-four pounds—same result as above.

Experiment 5.—A man, thirty-six years old, well developed; aortic disease, slight dropsy of lower limbs. Right sciatic: One hundred and fifty-eight pounds—nerve broke across immediately at the point of attachment of the hook. Left sciatic: One hundred and fifty-four pounds—same result.

Experiment 6.—A woman, sixty years old, died from fracture of skull. Right sciatic: One hundred and forty pounds—broke as in Experiment 5. Left sciatic: One hundred and twenty-six pounds—same result.

Experiment 7.—A woman, thirty-six years old, well developed, died of cardiac disease. Right sciatic: One hundred and forty-five pounds—immediately broke from the spinal cord. Left sciatic: One hundred and sixty pounds—same result as on the right side.

Experiment 8.—A man, forty years old, very muscular; height, six feet. Died of injury of head. Right sciatic: One hundred and seventy-six pounds—broke immediately at the point where hook was applied. Left sciatic: One hundred and seventy pounds—same result.

Experiment 9.—A woman, thirty-five years old, very well developed. Right sciatic: One hundred and sixty pounds—detached from the spinal cord in less than a minute. Left sciatic could not be tested at the time.

In all these cases the experiments were performed from one to three days after death. In applying the weights, an amount rather less than it was considered probable would be needed to rupture the nerve was first attached to the hook, and then, with the help of assistants, small weights were rapidly added until the nerve gave way.

Excluding Experiment 4, all the subjects were adults, and in these the average weight required to rupture the nerve was a hundred and forty pounds and three quarters. In Experiment 1 the nerve gave way with an exceptionally small force—viz., a hundred pounds; but in the other two male subjects (Experiments 5 and 8) the average weight required was a hundred and sixty-four pounds and a half. On an average, a loop of the great sciatic would, I think, bear for a short time nearly the entire weight of the body. Even more interesting than the amount required to rupture the nerve was the position at which it gave way. Out of fourteen cases, six broke at or near the point where the hook was applied. In the other eight cases, the nerve itself did not break, but its connections with the spinal cord and its membranes were detached. All the specimens thus obtained presented essentially the same appearance, and consisted of the nerve roots of the last lumbar and first and second sacral nerves. These were torn at the point where they joined the spinal cord. Tracing these nerve roots downward to the dura mater, a small portion of this membrane was found connected with each pair of spinal nerve roots a short time before the latter joined. The dura mater, in fact, was torn near the point where it is prolonged from the main sheath on to each nerve. Then the anterior primary divisions of the last lumbar and the two upper sacral nerves could be traced down to the point where they became continuous with the great sciatic. The branch from the fourth lumbar, to join with the fifth to form the lumbar branch, was always present. The posterior primary divisions and other small branches were broken near their origin.

	Weight of animal,	Right sciatic.	Left sciatic.	Side not specified.
	Lbs.	Lbs.	Lbs.	Lbs.
Mongrel bitch (poor condition)	26½	..	..	24
Mongrel dog (good condition)	23½	..	..	25
Crossed bulldog (good condition)	44	64	58	
Water spaniel (good condition)	38	56	50	
Mongrel dog (good condition)	19½	26	32	
Bitch (good condition)	47½	50	46	
Rat terrier (poor condition)	22	40	38	
Crossed St. B. and Newf. (fair condition)	90	80	79	
Crossed St. B. and Newf. (fair condition)	68	48	56	
Mongrel dog (good condition)	22½	30	23	
Bitch mongrel (good condition)	16½	24	19	
Mongrel dog (good condition)	26½	48	46	
Mongrel bitch (good condition)	21½	48	46	
Mongrel dog (fair condition)	26½	40	44	
Mongrel dog (young, good condition)	22½	40	28	
Skye terrier (poor condition)	21	25	26	
Mongrel dog	21½	32	30	
Mongrel dog	19½	32	36	
Young mongrel (good condition)	21½	28	28	
Mongrel dog (good condition)	24½	38	38	
Scotch terrier (fair condition)	15½	26	25	
Mongrel bitch (poor condition)	20½	32	32	
Bitch bull and mastiff (good condition)	44½	68	70	
Crossed dog (good condition)	42½	50	44	
Crossed bitch (good condition)	35	44	40	
Spaniel	25	..	..	44
Shepherd dog	20	32	23	
Mongrel dog	18	32	24	
Shepherd dog	25	..	..	31
Bitch (old)	19½	32	32	
Bitch mongrel	13	..	..	23
Dog mongrel	20	..	..	31
Black and tan	20	..	..	18
Bitch (young)	20	..	..	26
Bitch (old pug)	10	..	..	18
Mongrel bitch	15	..	..	30
Mongrel dog	13	24½	26	
Mongrel bitch	16	28	28	
Black cur	19	26	25	
Mongrel dog (poor condition)	5	..	..	21
Pug dog (good condition)	16	..	..	23½
Mongrel dog (mangy)	22½	42	35	
Mongrel dog (good condition)	14½	24	18	
Mongrel dog (healthy)	32	30	24 cocaine	
Bitch pup	19	24	24	
Mongrel dog (young)	21½	..	..	28
Mongrel dog (young)	21½	..	..	26
Mongrel dog (good condition)	31½	..	..	32
Terrier	16	..	..	35
Mongrel dog (good condition)	29½	53	55	
Mongrel dog (good condition)	30½	36	38	
Shepherd dog (good condition)	44	48	48	
Mongrel bitch (good condition)	19½	28	28	
Mongrel dog (good condition)	21½	38	38	
Mongrel bitch (good condition)	23½	32	24	
Mongrel dog (good condition)	32½	69	68	
Mongrel bitch (good condition)	24½	48	48	
Mongrel bitch (fair condition)	14½	20	18	
Mongrel dog (good condition)	23½	34	32	
Mongrel dog (fair condition)	17½	32	24	
Mongrel bitch (poor condition)	16½	30	18	
Mongrel dog (good condition)	22	..	..	45
Mongrel dog (good condition)	22	..	..	44
Mongrel dog (good condition)	26	..	..	37
Mongrel dog	27	..	..	35
Mongrel dog (good condition)	18	33	35	
Mongrel dog (young, good condition)	27	..	..	48
Mongrel dog (fair condition)	16	52	51	
Black hound (young, good condition)	42	47	47	
Mongrel dog (young, good condition)	30	42	45	
Bitch, mixed terrier and beagle	14	20	16	
Bitch mongrel (good condition)	26	50	48	

SUMMARY.

Total number of observations	72
Total weight of animals	1,786½ lbs.
Total of sciatic tensile strength *	2,507 lbs.
Average ratio of weight of dog to tensile strength is as 3 to 4.	
Number of cases in which both sciatics were tested	51
Number of cases in which the right was the stronger	29
Number of cases in which the left was the stronger	11
Number of cases in which they were equal	11
Greatest preponderance of right over left	12 lbs.
Greatest preponderance of left over right	8 lbs.
Number of cases in which tensile strength was less than weight	4

This was in a black and tan dog, weight, 20 lbs.; tensile strength, 18 lbs.

Mongrel bitch (poor condition), weight, 26½ lbs.; tensile strength, 24 lbs.

Crossed St. Bernard and Newfoundland (fair condition), weight, 90 lbs.; tensile strength—right, 80 lbs.; left, 79 lbs.

Crossed St. Bernard and Newfoundland (good condition), weight, 68 lbs.; tensile strength—right, 48 lbs.; left, 56 lbs.

Number of cases in which the tensile strength is greater than weight, 68.

Greatest disparity between weight and tensile strength: †

Mongrel dog (good condition), weight, 22 lbs.; tensile strength, 45 lbs.

Mongrel dog (fair condition), weight, 16 lbs.; right sciatic, 52 lbs.; left, 51 lbs.

Mongrel dog (good condition), weight, 32½ lbs.; right sciatic, 69 lbs.; left, 68 lbs.

Mongrel dog (poor condition), weight, 5 lbs.; tensile strength, 21 lbs.

Mongrel bitch (good condition), weight, 21½ lbs.; right, 48 lbs. left, 46 lbs.

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* In cases where there is a difference between right and left the average between the two is taken.

† These are all the cases in which the tensile strength was more than double the weight.

Average ratio of weight of dogs noted as being in good condition to the sciatic tensile strength is as 7 : 9. (This ratio is $\frac{1}{30}$ more than the ratio for all the dogs.)

Average ratio of weight of dogs, marked as being in poor condition, to the sciatic tensile strength is as 2 : 3. (This ratio is $\frac{1}{12}$ less than ratio for all the dogs and $\frac{1}{9}$ less than ratio for dogs in good condition.)

Average ratio of weight of dogs, marked as being young, to tensile sciatic strength is as 7 : 10. (This is $\frac{1}{20}$ less than ratio for all the dogs.)

Average ratio for bitches, between their weights and the tensile strength of sciatics, is as 8 : 11. (This is $\frac{1}{44}$ less than ratio for all the dogs.)

Average ratio, for dogs weighing from 10 and 15 lbs. (inclusive), between their weights and their sciatic tensile strength is as 3 : 5.

Average ratio for dogs weighing from 16 to 20 lbs. (inclusive), between their weights and their sciatic tensile strength, is as 2 : 3.

Average ratio for dogs weighing between 21 and 30 lbs. (inclusive), between their weights and their sciatic tensile strength, is as 2 : 3.

Average for dogs from 31 to 40 lbs. (inclusive) is as 2^{1}: 3.

Average for dogs from 41 to 50 lbs. (inclusive) is as 6 : 7.

Above 50 lbs. there are only two dogs:

Crossed St. Bernard and Newfoundland (fair condition), weight, 90 lbs.; right, 80 lbs.; left, 79 lbs.

Crossed St. Bernard and Newfoundland, weight, 68 lbs.; right, 48 lbs.; left, 56 lbs.

ANEURYSM OF THE SUBCLAVIAN ARTERY AND ITS TREATMENT.

By A. H. BARKLEY, M. D.,
LEXINGTON, KY.

Ligation of the second part of the left subclavian artery is not so easy as one would think, the same portion being easier to tie on the right than on the left side; this difference is due, of course, to the anatomical relations on the respective sides. Ligation of arteries for aneurysm or other causes is not followed by the happiest results sometimes. Distal ligation for aneurysm is, I believe, not followed by such good results as proximal, but once in a while there is nothing left to do, as in the case I shall report later, but to place a ligature on the distal side of the aneurysm.

C. H., a man, aged forty-five, consulted me on November 13, 1899, complaining at the time of intense pain in the left side of the head and in the left arm, also of difficulty in breathing. The man appeared to be in good health, and said he felt well except for the pain.

On questioning him I found he had begun to complain of pain and difficulty in breathing about six weeks prior to his visit to me. He gave a specific history of twelve years' standing; no evidence of endarteritis could be detected.

On examination of the chest I noticed a fullness in the left supraclavicular space; no distinct tumor could be felt; the external jugular was very much engorged, showing some obstruction to the return of venous blood. He also perspired very freely on the left side of his face and neck. Auscultation did not disclose anything except in the left sterno-clavicular region, where a bruit could be heard, which was systolic in time. A slight hypertrophy of the heart was present. The left radial pulse was of much smaller volume and slower than the right. The left vocal cord was paralyzed, causing a change in the voice.

After several methods of treatment had been thoroughly tried by other physicians and myself, I advised him to be operated upon; he consented. So, on November 16, 1899, he was sent to the hospital and prepared for operation on the following day. An incision was made half an inch above and parallel to the left clavicle, extending from the outer border of the sterno-mastoid muscle to the inner border of the trapezius; the skin was pulled down over the clavicle and cut, thus avoiding injury to the external jugular vein; the platysma and cervical fascia were divided on a grooved director; the sterno-mastoid was divided to its outer third in order to have more room; dissection was carried deeper until the outer third of the subclavian artery was exposed; this part not giving any trouble, the second part was exposed; the scalenus anticus muscle was now divided in its outer two thirds, care being taken not to wound the phrenic nerve or internal jugular vein. The aneurysm was found in the first part of the artery. As it was impossible to ligate the artery on the cardiac side, a ligature of stout silk was passed from above downward and inward around the artery as near the junction of the first and second parts as possible. The wound was closed with catgut sutures without drainage.

He does not complain of any pain either in the side of the head or in the left arm. He is now able to be at work. The pressure on the recurrent laryngeal nerve is evidently much less, as his voice is much improved.

THE USE AND ABUSE OF POULTICES.

By SAMUEL E. EARP, M. S., M. D.,

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Oftentimes much harm results from the use of a poultice because the proper instructions are not given to patients and they remain in ignorance as to what is to be expected from its use. Their injudicious employment may produce an anæmic, flabby condition of the part, and consequently a lowering of the vitality and possibly a necrosed condition of the tissues. After the evacuation of pus, when especial stimulation is needed, very frequently the poultice is used when it is likely to produce a greater detriment than benefit. As a rule, the poultice should be non-irritating; it should be used hot and renewed often. Its virtue depends on the heat and moisture, and hence it is of but little importance whether it consists of flaxseed meal, cornmeal, bread and milk, chamomile leaves, or hops, except so far as these are capable of retaining the heat, and the selection is a matter of convenience. It acts as a sedative, softens and relaxes the tissues, and in high-grade inflammations favors the formation of pus and hastens the time for evacuation. This applies to superficial inflammations mainly, but in the deep-seated varieties, such as pneumonia and peritonitis, if its use is deemed advisable, it should be sufficiently large to cover a surface equal to the inflamed organs underneath, and reapplied often to get the effect of the heat. It should be covered with sheet rubber, oiled silk, or an oiled newspaper, but should not remain in contact when cold. While these comments apply to the true poultice, still it may also be a medium through which certain active medicaments can be used in order to obtain the therapeutic effect of the agent, as in the use of an absorbent, disinfectant, counter-irritant, or anodyne.

The charcoal poultice is used in cases of foul ulcers as a deodorant or where there is evidence of gangrene. The surface becomes healthier and the odor eradicated by virtue of the absorbent powers of the charcoal. As an application to old sores or sloughs, to act as a deodorant and antiseptic, Hare says: "This is accomplished by the absorption of any liquids which may be present, thereby depriving germs of a nidus, and by its distinct oxidizing power." However, unless this agent is resupplied frequently, it soon gets saturated with the gases and becomes useless. In addition to the admixture, a layer of powdered charcoal should be sprinkled on the surface.

The *British Pharmacopœia* recognizes the following mixture, with the affixed proportions: Wood charcoal, 1; breadcrumb, 4; linseed meal, 3; boiling water, 10. For a fermented poultice: Beer yeast, 3; wheat flour, 7; water at 100° F., 3.

Any one adept in making a linseed-meal poultice will add the meal in small quantities, constantly stirring during the process to avoid lumpy masses, the proportion being of linseed meal, two parts, to boiling water, five parts. Perhaps the latter has been given some preference on account of its oleaginous nature, which prevents its drying quickly, as in the case of the bread poultice; this difficulty may be overcome by the addition of some mucilaginous substance, such as marshmallow, glycerin, or oil of vaseline.

The statement of many authors that the antiseptic solution has superseded the poultice in the treatment of open wounds is somewhat misleading, and should not be a reflection on the virtue of the latter from the fact that poultices were frequently used in such cases when they should not have been, when such agents as the antiseptics were distinctly the appropriate remedies; however, even now the poultice is occasionally used as a medium for the application of an antiseptic.

In a broad sense, the benefits of the poultice *per se* or as a medium may be summarized as follows:

(1) To relieve congestion; (2) to reduce inflammation; (3) to promote absorption, favor resolution, or hasten suppuration; (4) to diminish tension; (5) to soften incrustations; (6) to encourage tissue relaxation; (7) to stimulate healthy granulations; and (8) to perform the office of a deodorant and, in a sense, of an antiseptic.

The Plague in Hawaii.—Contrary to our hope and reasonable expectation, the plague is reported to have extended beyond the Chinese quarter, and the situation is regarded as serious.

SCHOOL HYGIENE.*

By G. D. HAMLIN, M. D.,

BROOKLYN.

Some time ago I received a note from our president saying that I was expected to bring to this meeting a short paper upon some school topic. The first injunction—viz., to make the paper short—is very cheerfully and easily complied with, and it seemed to me that an appropriate topic would be a plea for better heating, lighting, and ventilation of public buildings, particularly schoolhouses.

We are all agreed that the grandest and noblest service that is rendered to the community at large by the medical profession is in the field of preventive medicine, and one of the most productive, and at the same time neglected, portions of the field is that which deals with the sanitary conditions of all public buildings, but particularly schoolhouses. This question is second only to that of sewerage and water supply, and a very close second at that.

Fabulous sums of money have been, and continue to be, lavished upon beautiful public buildings that when completed are so unsanitary as to be practically unfit for use. A notable example of this is the Capitol building at Washington, which was so poorly ventilated that it was almost suicidal to remain in the gallery more than an hour or two at a time while the chamber below was occupied. More than a hundred thousand dollars have been spent recently in an endeavor to remedy the evil, but without much success. There is hardly a medical lecture room in this city that is properly and scientifically heated, lighted, and ventilated. I am now convinced that the loss of twenty pounds in weight, which I sustained during the six months prior to my graduation in medicine, was caused, not by excessive study (as I informed my friends), but by the atrociously foul air that I used to breathe in the amphitheatre of the university for five hours a day, six days in the week, where I used to sit industriously inhaling carbonic-acid gas and other deleterious substances exhaled by five hundred fellow students. After such an ordeal, we might well count ourselves fortunate to take up an eighteen months' residence upon a green island swept by ocean breezes.

The room in which we have been accustomed to assemble was selected by a thoroughly scientific and unusually careful committee. But, notwithstanding its beauty and sumptuousness, it is not a fit place for any number of human beings to remain in for any length of time, with the windows and doors shut, for they are the only means of ventilation. We have all noticed during our fullest meetings, after we have been exchanging breath for an hour or more, the atmosphere of the room became so impure and oppressive that the members began to feel sleepy and depressed, and even the brilliant minds that assembled there began to feel dull and inactive. But, great as is the effect of the sanitary condition of a room upon vigorous adults, it is much greater upon the tender children of our public schools, who are just entering the formative period of their lives, during which they not only develop character and intelligence, but also acquire the habits and physique that are to make them either successful or unsuccessful as breadwinners, and useful or burdensome to society. Seven eighths of the children under fifteen years of age in school are in the public schools. And when we consider that in the city of Greater New York we have about four hundred and fifty thousand children assembled in the public schools for five hours each day, five days in the week, for ten months of the year, we begin to realize what an important matter the sanitary supervision of our public-school buildings is. At the beginning of the present school term in this city about ten new public-school buildings were thrown open to the public, some of them costing for site and building the considerable sum of five hundred and thirty thousand dollars. These buildings, under the master hand of Mr. C. B. J. Snyder, the superintendent of school buildings, have been designed and constructed according to plans that are infinitely better and more sanitary than those in use twenty or even ten years ago, but Mr. Snyder said to me recently that there were many imperfections yet to be eliminated and many sanitary problems yet to be solved in connection with schoolhouse construction; and, as guardians of the public health, it is our duty, and should be our aim, to take an intelligent and helpful part in this work.

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* Read before the Society of the Alumni of the City (Charity) Hospital, October 11, 1899.

As physicians we can realize the great injury that is done to the youth of tender years by unsanitary surroundings, and we can appreciate what a vastly elevating and invigorating effect ideal surroundings and influences have upon children of school age, particularly upon those whose parents are poor and ignorant. The subject of sanitation does not receive the attention that it deserves in the average medical college, and consequently many very excellent practitioners are not so familiar with the subject as they might be. Many could be found who would frankly confess that they did not feel competent to intelligently inspect and pass upon the sanitary arrangements of a private house, to say nothing of a large public building. This important branch of medical science deserves to be brought more prominently before the profession, and as medical men we should strive to so influence public opinion and instruct public officials that greater consideration shall be shown for scientific laws and sanitary requirements in the construction of the public buildings that are being so rapidly built at enormous expense in all parts of this city. Public School No. 42, at Hester, Orchard, and Ludlow Streets, is an example of what our schoolhouses ought to be. It has just been completed at a cost for site and building of five hundred and thirty thousand dollars, and shelters during school hours nearly twenty-three hundred children, nearly all of whom are of Hebrew parentage, live in the most densely populated section, in most unsanitary homes, and their school life should and does stimulate their ambitions and lift them up to higher and more healthful lives. Every room in this building is high and roomy, and is ventilated so perfectly that the air is always pure and wholesome. It is heated by the combined direct and indirect method, and the temperature is regulated by an automatic thermostat, which restricts the variation to about 2° F. The furniture is of the most approved pattern. The light is supplied from the proper direction and by a sufficient number of fifteen-foot windows to flood the room with light, even in the darkest weather. The wardrobes are all in the corridors, are of open wirework, and dried by coils of steam pipes. The stairways are all open, plentiful in number, and of easy ascent. Drinking facilities are abundant, and there are two large playgrounds, one in a well-lighted basement and one on the roof.

But what a different state of affairs is found across the street, at Hester and Allen Streets, in Public School No. 144, which also shelters over two thousand children. Here you will find in each room on a rainy day in the winter from thirty-five to fifty-five children, mostly of Hebrew parentage, huddled together in a low room about twenty feet long by eighteen wide.

The children are of various sizes, but the desks are all of the same height, whereas modern adjustable desks should be insisted upon. Many of the rooms have only one small window, which performs the double function of illumination and ventilation, and in many instances opens upon a small tenement-house courtyard, containing ash barrels, garbage cans, and dead cats, and is netted overhead by a meshwork of pulley lines, from which hang all sorts of damp and half-washed clothing of various colors. There are no playgrounds worthy of that name. The rooms are heated by the direct method, and, as there is practically no means of ventilation except through the few small windows, the air of the rooms changes so slowly that in cold or damp weather the atmosphere soon becomes almost stifling, and the occupants are constantly inhaling an insidious unseen poison. The children's wardrobes open directly into the class rooms, and in wet weather the evaporation from the wet wraps helps to make the atmosphere still more damp and unwholesome. The plumbing of the building is old and imperfect and the water-closets are located in the basement, immediately under the class rooms, and the gases from the closets at times find their way into some of the rooms above. A physician can see at a glance how terrible will be the effects of such surroundings upon tender, growing children. The imperfect lighting is a most productive cause of myopia, astigmatism, and other optical difficulties. The ill-fitting desks are productive of curvatures, and, as they are all double desks, communicable diseases and pediculi are transmitted with great facility. The atrociously foul air of such rooms renders both pupils and teachers prone to diseases of the respiratory tract, and the tone of their systems is so reduced by lack of oxygen that the amount of sickness arising therefrom is appalling. Particularly toward the end of each term many of the teachers are compelled to relinquish their duties on account of illness, and the medical certificates that they send to the board of education show clearly that the attending physicians are often in the dark as to the ætiology of their complaints, and, instead of having the rare and obscure diseases that are frequently diagnosticated, they are quite probably suffering from the inhalation of foul air, an overloaded course of study, or an uncorrected myopia; and rest, exercise in the open air, or a properly fitting pair of glasses is generally what they need more than the elaborate course of therapeutics or electricity that is so generally prescribed.

The design of this paper is not to deal with any of the technical aspects of this subject, but to call the attention of my fellow members to the fact that the army of eight thousand teachers and four hundred and fifty thousand pupils who are to-day in the public schools of this city constitutes quite an important part of our *clientèle*, and that many of their ailments are the direct result of their educational work and surroundings, a thorough knowledge of which will often assist their medical attendant in diagnosticating their diseases. There is a crying need for radical improvement in their environments, a simplification and abridgment of our school curriculum, and increased advantages for physical development. The medical profession should be more thoroughly alive to their duty in this matter, and should make their influence felt in every way possible, and every school board should contain a goodly percentage of physicians. School buildings should be constructed under the supervision of sanitarians and educators rather than politicians, and the overzealous pedagogues should be compelled by a properly educated public opinion to give suitable time and attention to physical development, and to keep their ever-increasing course of study within reasonable limits. Our schools will then produce fewer intellectual prodigies and also fewer physical and nervous wrecks.

143 KENT STREET.

A CASE OF NEUROSIS OF THE HEART:
PALPITATION.

By ABRAHAM GOLTMAN, M. D.,
C. M. MONTREAL; L. R. C. P. AND L. R. C. S. ED.; L. F. P. G. GLASGOW.

MARY D., aged twenty-eight years, married, came to my office (November 12th) complaining of "her heart thumping" and "nervousness."

History.—She has had such attacks since her menses first appeared (fourteen years), becoming worse at each monthly period; they are aggravated by emotional disturbances, noises, frights, and the slightest reprimand from her husband. She has one child, aged three years. She states that her attacks of "heart trouble" have become more frequent since the birth of her child.

Family History.—Her mother and father are alive, also one brother. She says her mother was and is a very nervous woman, often requiring a physician to treat her "fits."

Physical Condition.—The patient is anæmic, but flushes at the least provocation. There is visible tremor of the hands and fingers. She is very emotional and nervous, and restless when sitting.

Her pulse is rapid and increases while noticed to 140 or 150. Temperature, 99° F. Heart, nothing abnormal. The sounds are sharp; the second is somewhat accentuated. No murmurs.

Treatment.—Rest—as much as possible in the recumbent posture. Regular hours for eating, prohibiting alcohol, tea, and coffee. Sexual excitement must be avoided, a point which I impressed on her.

I saw her about three weeks later, and found the following signs of improvement: She was not so restless when sitting; the tremor of the hands was slight; anæmia was not marked; no flushing of the face was noticed; she felt stronger and less nervous; her pulse was 100, full and regular; her temperature was 99° F.; and her heart sounds were normal.

On December 18th she was still improving under the same treatment. Her pulse was 98 and her temperature 98.4° F. She had avoided physical exertion and had rested as much as possible.

Of drugs, strychnine ranks as one of the best, in increasing doses, given in the form of tincture of nux vomica, fifteen to twenty drops, three times a day. Where sleeplessness occurs, bromide of potassium is of service. During an attack, cold applied over the heart may be tried.

102 WEST NINETY-EIGHTH STREET.

Therapeutical Notes.

Huchard's Pills for Jaundice.—The *Riforma medica* for October 30, 1899, gives the formula as follows:

℞ Resin of podophyllum, Extract of hyoscyamus, Medicinal soap,	each ..	4½ grains;
Extract of rhubarb	....	15 "

M. Ft. massa in pil. No. x div.
S.: One or two daily.

A Collutory for Painful Dentition.—The *Gazzetta degli ospedali e delle cliniche* for November 12, 1899, gives this formula:

℞ Citric acid, Distilled water,	each	2,250 grains;
Cocaine hydrochloride	....	1½ grain;
Syrup	....	300 grains;
Tincture of vanilla	....	12 drops.

M. To be rubbed on the gums.

THE
NEW YORK MEDICAL JOURNAL.
A Weekly Review of Medicine.
Published by D. Appleton and Company.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, FEBRUARY 3, 1900.

PUBLIC INSTITUTIONS FOR CONSUMPTIVES.

The report of a special commission appointed to consider the advisability of establishing a New York State sanitarium for consumptives in the Adirondacks is said to be to the effect that it would be better to have a number of small institutions, to be maintained by local boards of health, and that, to enable such boards to find it among their duties and prerogatives to establish hospitals for the tuberculous, the disease should be legally declared contagious. If it is so declared, we take it, physicians will be required to report their cases, on pain of being fined, and the local boards will have the power of removing consumptives from their homes under certain circumstances. The commission included two eminent medical men, Dr. Stoddard, of Rochester, and Dr. Stephen Smith, of New York, and it is difficult to understand that they have been accurately reported as founding their recommendation on two such arguments as that the poor are averse to being taken far away from their homes and that a cure is more likely to be permanent if it is effected in the locality where the disease was contracted.

As for the first of these arguments, it does not appear to involve any medical question, and we may pass it by with the remark that the poor who object to being taken away from their homes are more likely, it seems to us, to resent the removal itself than to find a grievance in the distance to which they may be taken. It is, of course, forcible removal that we have in mind, and that is what a local board would find within its power were the scheme to be carried out unmodified. As regards the second argument—that a cure is more likely to prove permanent if it takes place in the locality in which the infection was contracted—the statement may be true, but how often would a cure take place?

It is only within a few years that the State of New York has emancipated itself from the highly unsatisfactory system of county asylums for the insane, and substituted State hospitals of which it may well be proud. We should hesitate, it seems to us, to subject our poor consumptives to a system that had to be given up in the case of the insane. Small local institutions are not economical, and they are not apt to be well managed from the professional point of view. The State Board of Charities, we think, should give heed to other considerations than the two that are reported to have been set forth by the commissioners.

THE REPORT OF THE SURGEON-GENERAL OF THE ARMY.

A summary of the report of Surgeon-General Sternberg for the fiscal year ending June 30, 1899, was some time ago given in our columns. The report has now been published in its complete form. It makes three hundred and fifty-four closely printed octavo pages. As actual hostilities were almost confined to the island of Luzon during the year, and were there not on a scale to exemplify the medicine and surgery of war to any extent comparable to that which was constantly presented to us throughout the four years of our bloody civil war, we can not give to the world as a result of the Spanish-American war and the rebellion in the Philippines any such colossal additions to medical literature as those to which our civil strife gave rise. Nevertheless, much that is of professional interest to the non-military medical man is to be found in the various documents included in the surgeon-general's report, and the announcement is made in it that Captain and Assistant Surgeon W. C. Borden is now preparing a report on the surgery of the Spanish-American war, in which special attention will be given to the history and study of cases in which the Röntgen ray was used.

In his recommendations, the surgeon-general remarks that the value of the aphorism "In time of peace prepare for war" has received additional support during our recent experience. This preparation, he says most truly, should include the formation of a corps of trained medical officers larger than is absolutely necessary for the army on a peace basis; systematic instruction in military medicine and hygiene for the medical officers of the National Guard, as well as for those of the regular army; and instruction of line officers in the elements of hygiene, and especially in camp sanitation. He recommends also the establishment of camping grounds in various parts of the country, having an ample supply of pure water, a proper system of sewers, etc. If, he says, our volunteers could have been assembled in such camps during the late war, there would have resulted such a saving of lives and money as would have demonstrated beyond all doubt the economy of such preparation for war in time of peace. There can be no question that General Sternberg is perfectly right in all these recommendations, and we hope they will promptly be carried out.

The report is adorned with a number of handsome pictures of operating rooms in hospitals and on transports, hospital buildings and grounds, field hospitals, hospital ships, and the Munson ridge-ventilated hospital tent. Many of these illustrations show a degree of excellence in devising requisites for the health and comfort of troops which is most creditable to the medical corps of the army. The work of improvement must be kept up, and with that necessity in view the people should not grudge liberal appropriations; we must not again lapse into the false sense of security that prevailed before we began to play our part in the world's affairs.

WOMEN PRACTITIONERS OF MIDWIFERY.

In spite of the revolution which has taken place during the last half-century in the status of women from the business point of view, a voice is still raised now and then in more or less pessimistic protest, as if it were possible to undo the work of emancipating women from a condition in which they were practically doomed to be either the dependent pets or the drudges of men. Somewhat of this nature appears to be a recent work by Dr. Runge, of Göttingen, entitled *Männliche und weibliche Frauenheilkunde.* We have not seen the essay itself, but an interesting summary of its chief features, signed by Dr. Stoeckel, of Bonn, appeared in the *Centralblatt für Gynäkologie* for January 6th.

Runge presents the subject from the historical point of view. For hundreds of years, he says, obstetrics and gynæcology remained in the hands of women, and their surrender of them to men was the natural outcome of the advance of civilization. So long as women held these branches, although there were notable examples among them of great industry, careful observation, and satisfactory compilation, they never displayed a broad grasp or put forth a path-breaking idea. All the inventions, notably that of the obstetric forceps, came from men. The author appears to sum up the evidence of women's lack of progressiveness in this statement: "Where woman has been her own assistant, the assistance has remained on a low plane" (*Wo die Frau sich selbst geholfen hat, blieb die Hilfe auf niederer Stufe*).

So far as our information goes, the times of Madame Lachapelle, Madame Boivin, and a number of other women obstetricians mentioned by the author did not sparkle with discoveries and inventions in other branches of medicine than the one in which women were predominant—we say the one branch, meaning obstetrics, for in those times there was no gynæcology worth speaking of. Discoveries and path-breaking ideas were few and far between. Moreover, it seems hardly fair to apply such old memories as a test of the fitness of the women of the present day. Nevertheless, it rests with the medical women of this and coming generations to make up for the deficiencies of their remote predecessors, however demonstrable it may be that those shortcomings were due to the restrictions then set upon women.

THE CHEMICAL COMPOSITION OF THE NEWBORN INFANT.

M. Camerer (*Gazette hebdomadaire de médecine et de chirurgie*, November 9, 1899) has set himself to the unique study of the chemical composition of newly born infants. He made use for his investigations of the bodies of three children who had lived for only a few minutes, and after freezing them cut them up into small pieces, treating them successively with alcohol and ether. The tissues, thus deprived of their water and fat, were powdered and submitted to chemical analysis, as were also the alcoholic and ethereal extracts. The difference between the weight of the cadaver before incineration and the weight of the two extracts and of the powdered tissues gave the proportion of water. The analyses of the three bodies furnished the following mean results to each one hundred grammes of tissue: Water, 71.2; dry substances, 28.8; fat, 13.3; ash, 2.40; albumin and gelatin, 11.5; extractive matters, 1.6; nitrogen, 1.92. By comparison with similar examinations conducted on the bodies of adults the author finds that the infant's body contains a larger quantity of water and fat, the latter being nearly half of the dry matter; while the body of the adult has a greater proportion of mineral ash and nitrogen.

"BLOOD DUST."

This strange name has been proposed for certain "small dancing bodies" discovered by Müller and Stokes and supposed by them to be "a new constituent of the blood." Some time ago, in the *Lancet* for October 14, 1899, Edward G. Horder, F. R. C. S. Edin., of Pakhoi, South China, declared that he had observed the same bodies and regarded them as granules extruded from the leucocytes. He prefers to call them blood granules, for, he says, they are so called before their extrusion.

THE *MARYLAND MEDICAL JOURNAL.*

Our valued Baltimore contemporary puts forth its January issue in a new form. It is much improved in appearance, and is now published monthly in Baltimore and Washington. The charming metropolis of Maryland is growing more and more important in medicine, thanks in great measure to the excellent work done in the Johns Hopkins Hospital, and the *Maryland Medical Journal* no doubt finds a correspondingly growing field of material to draw upon.

AN EXTREMELY EARLY OPERATION FOR HERNIA.

At a recent meeting of the Paris Society of Obstetrics (*Presse médicale*, December 30, 1899) Dr. Audion showed a child on whom he had operated for umbilical hernia an hour after its birth. The hernia was as large as a plum and contained a portion of intestine and a bit of the lower edge of the liver. Three layers of sutures were inserted, and the hernia was completely cured, but subsequently there was slight eventration when the child coughed or cried. It is stated that the hernia was easily reduced, and the reason for operating so very early is not apparent.

EOSINOPHILOUS BRONCHITIS.

The pathogeny of this affection is not yet understood, though in some cases it appears to be syphilitic. Dr. W. Teichmüller (*Deutsches Archiv für klinische Medicin*, lxiii, 5, 6; *Centralblatt für innere Medicin*, January 6th) gives the histories of fifteen cases and describes the features of the disease. It is apt to be chronic, but intermissions occur characterized by all the appearances of health. The appearance of numerous eosinophilous cells in the sputum is pathognomonic, but, if they play any part in the ætiology, it is not known.

TYPHOID FEVER AND PREVENTIVE INOCULATION.

According to a special London dispatch to the *Sun*, dated January 27th, inoculation for the prevention of typhoid fever is a prominent topic of consideration in England at the present time, and the correspondent cites facts which go to show that, while the degree of immunity and that of mitigation conferred by inoculation are not great, they are sufficient to save many lives, as has been shown by the experience of the Indian army.

THE *NEW YORKER MEDICINISCHE MONATSSCHRIFT.*

This excellent monthly journal, edited by Dr. A. Ripperger, said to be the only medical journal in the German language published in the United States, has been under new management since January 1st. It is the official organ of the Deutsche medicinische Gesellschaft der Stadt New York and the Deutsche medicinische Gesellschaft der Stadt Cleveland. In its January number it presents in English a notable article on "Experts," by W. J. O'Sullivan, M. D., LL. B.

THE INFLUENCE OF THE THYREOID GLAND UPON THE CONSOLIDATION OF FRACTURES.

Steinlin (*Archiv für klinische Chirurgie*, 1899, vol. lx, p. 247; *Gazette hebdomadaire de médecine et de chirurgie*, December 3, 1899) has shown experimentally that in animals which had been subjected to extirpation of the thyreoid gland the growth and resorption of callus after fracture are defective. These researches would seem to give a rational support to the lately advocated use of thyreoid extract in fractures.

BIRDS AND PHTHISIS.

In our issue for June 10, 1899, we cited from the *Lancet* a warning of Dr. Tucker Wise's that song birds, from their liability to phthisis, might become a source of infection to human beings, and he recorded ten cases in which such infection actually appeared to have taken place. The *Indian Medical Record* for November 15, 1899, contains a letter from a correspondent in which he describes the case of a tuberculous woman who had a pair of young pigeons. The male was able to feed itself, but the mate, being too young, was fed by the lady's masticating food and allowing the bird to take it from her mouth. In a month the bird so fed died, and an autopsy showed the lungs to be consolidated and filled with miliary tubercle. The male bird remained sound. Thus it would seem that tuberculosis can be conveyed both from birds to human beings and from human beings to birds.

THE MILK SUPPLY OF NEW YORK.

The president of the Medical Society of the County of New York, Dr. George B. Fowler, has performed a distinct service to the community in arranging for such a many-sided presentation of the subject of the milk supply of large cities as took place at the society's last meeting, on Monday evening. We believe also that great credit is due the milk inspectors of the Health Department of New York for maintaining the quality of our milk as regards richness, but worse things than added water may be found in milk, and too much care can not be exercised in excluding them.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported for the two weeks ending January 27, 1900:

DISEASES.	Week ending Jan. 20.		Week ending Jan. 27.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	24	10	28	7
Scarlet fever	245	13	228	16
Cerebro-spinal meningitis	0	4	0	5
Measles	777	28	824	32
Diphtheria	287	41	285	53
Laryngeal diphtheria (croup)	10	11	28	8
Tuberculosis	200	180	223	156
Chicken-pox	33	0	41	0
Small-pox	1	0	3	0

Earth Eating.—Baccarani (*Gazzetta degli ospedali*, October 1st; *British Medical Journal*, December 23, 1899) records three cases of earth eating. The first was in a young man, aged twenty-one, who from childhood had been in the habit of eating dust and earth; the second in a girl of seventeen, who had been in the habit of doing the same thing since birth. In each of these two cases there was an enlargement of the liver and spleen, a backward intellectual condition, diarrhœa alternating with constipation, vague abdominal pains, anæmia, etc. The third patient was a girl, aged ten, whose habit it was to eat charcoal on every possible opportunity. In this case the habit seemed inherited, as the father was a charcoal eater. The habit is probably a cause of the dyspeptic disturbances which frequently arise, and the fact that the charcoal eater displayed many of the signs and symptoms of the earth eater seems to weaken the theory that they are due to parasites or germs taken in with the earth, as these would not be so likely to be included in charcoal dust.

The South Atlantic Squadron in Quarantine.—It is announced from Washington that Rear Admiral Schley has reported the arrival of his squadron at Montevideo and an order by the local authorities for its detention in five days' quarantine on account of its having touched at the plague-infected port of Enscñada, Argentina.

Marine-Hospital Service Health Reports.—The following cases of small-pox, yellow fever, cholera, and plague were reported to the surgeon-general during the week ending January 26, 1900:

Small-pox—United States.

Denver, Col	Jan. 7	1 case.	
Huerfano County, Col	Jan. 9	3 cases.	
Washington, D. C.	Jan. 12–18	3 "	
Blackshear, Ga	Jan. 11	16 "	
Brunswick, Ga	Jan. 11	10 "	
Darien, Ga	Jan. 11	2 "	
Jesup, Ga	Jan. 11	2 "	
Liberty, Ga	Jan. 11	1 case.	
Evansville, Ind	Jan. 13–20	2 cases.	
Covington, Ky	Jan. 13–20	4 "	
Louisville, Ky	Jan. 11–18	1 case.	
Calcasieu, La	Jan. 7–13	3 cases.	
East Feliciana, La	Jan. 13	50 "	
Livingstone, La	Jan. 13	Several cases.	
New Orleans, La	Jan. 14–21	84 cases,	2 deaths.
Shreveport, La	Jan. 13–20		2 "
Malden, Mass	Jan. 13–20	1 case.	
Omaha, Neb	Jan. 13–20	1 "	
New York, N. Y.	Jan. 13–20	1 "	
Cleveland, Ohio	Jan. 13–29	20 cases.	
Youngstown, Ohio	Jan. 15–22	7 "	
Beaver County, Oklahoma	Jan. 10	Reported.	
Blaine County, Oklahoma	Jan. 10	1 case.	
Noble County, Oklahoma	Jan. 10	Reported.	
Pawnee County, Oklahoma	Jan. 10	Reported.	
Allegheny, Pa	Jan. 13–20	1 case.	
Satte, Texas	Jan. 1–16	75 cases,	1 death.
Houston, Texas	Jan. 6–13	4 "	
Portsmouth, Va	Jan. 13–20	20 "	1 "

Small-pox—Foreign.

Bahia, Brazil	Dec. 2–9	1 case.	
Rio de Janeiro, Brazil	Dec. 1–8		52 deaths.
Ontario, Canada	Nov.–Dec. 30	243 cases.	
Cairo, Egypt	Dec. 23–31		7 "
London, England	Dec. 23–Jan. 6	15 "	
Southampton, England	Dec. 31–Jan. 6	1 case.	
Lyons, France	Dec. 7–23		2 "
Marseilles, France	Jan 2	Epidemic.	
Nice, France	Dec. 19–31	1 case.	
Nice, France	Jan. 1–8	1 "	
Athens, Greece	Dec. 31–Jan. 6	3 cases,	1 death.
Calcutta, India	Dec. 8–16		2 deaths.
Chihuahua, Mexico	Jan. 6–13		9 "
Vera Cruz, Mexico	Jan. 6–13		1 death.
Campbelltown, New Brunswick	Jan. 13–20	5 "	
St. Petersburg, Russia	Dec. 23–30	12 "	7 deaths.
Leith, Scotland	Dec. 31–Jan. 6	1 case.	
Corunna, Spain	Dec. 23–Jan. 6	3 cases,	4 "
Smyrna, Turkey	Dec. 17–24		3 "

Yellow Fever—United States.

Key West, Fla	Jan. 16	1 case.	

Yellow Fever—Foreign.

Rio de Janeiro, Brazil	Dec. 1–8		8 deaths.
Barranquilla, Colombia	Dec. 23–30	1 case,	1 death.
Havana, Cuba	Jan. 6–13	4 cases,	3 deaths.

Cholera.

Calcutta, India	Dec. 8–16		38 deaths.

Plague—United States.

Honolulu, Hawaii	From outbreak to Jan. 8		19 deaths.

Plague—Foreign.

Calcutta, India	Dec. 8–16		54 deaths.
Kurrachee, India	Dec. 8–23	3 cases,	3 "
Tamsui, Formosa, Japan	Nov. 28–Dec. 12	14 "	7 "
Asuncion, Paraguay	Nov. 7–21		9 "
Portugal	From outbreak to Jan. 6	287 "	108 "

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending January 27, 1900:*

Harris, H. N. T., Surgeon. Ordered to the *Albany* via the *Prairie*.

Von Wedekind, L. L., Passed Assistant Surgeon. Ordered to duty on the *Richmond*.

(*Changes by Cable from Asiatic Station.*)

Holcomb, R. C., Assistant Surgeon. Detached from the *Solace* and ordered to the *Helena*.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the United States Marine-Hospital Service for the Seven Days ending January 25, 1900:*

Williams, L. L., Surgeon. Granted extension of leave of absence for ten days.

Pettus, W. J., Surgeon. Granted leave of absence for one month and twenty-nine days from February 10th.

Parker, H. B., Assistant Surgeon. Directed to report at Washington, D. C., for special temporary duty.

Frick, John, Acting Assistant Surgeon. Granted leave of absence for thirty days from February 28th.

Board Convened.

Board convened to meet at 378 Washington Street, New York, on Wednesday, February 7, 1900, for the purpose of examining candidates for appointment as assistant surgeon in the service. Detail for the board: Austin, H. W., Surgeon, chairman; Banks, C. F., Surgeon, and Williams, L. L., Surgeon, recorder.

Society Meetings for the Coming Week:

Monday, *February 5th:* New York Academy of Sciences (Section in Biology); German Medical Society of the City of New York; Morrisania Medical Society, New York (private); Brooklyn Anatomical and Surgical Society (private); Corning, New York, Academy of Medicine; Utica, New York, Medical Library Association; Boston Society for Medical Observation; St. Albans, Vermont, Medical Association; Providence, Rhode Island, Medical Association; Hartford, Connecticut, Medical Society; South Pittsburgh, Pennsylvania, Medical Society; Chicago Medical Society.

Tuesday, *February 6th:* New York Neurological Society; Buffalo Academy of Medicine (Section in Surgery); Elmira, New York, Academy of Medicine; Ogdensburgh, New York, Medical Association; Syracuse, New York, Academy of Medicine; Hampden, Massachusetts, District Medical Society (Springfield); Hudson, New Jersey, County Medical Society (Jersey City); Androscoggin, Maine, County Medical Association (Lewiston); Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

Wednesday, *February 7th:* New York Academy of Medicine (Section in Public Health); Society of Alumni of Bellevue Hospital; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond, New York (New Brighton); Penobscot, Maine, County Medical Society (Bangor); Bridgeport, Connecticut, Medical Association.

Thursday, *February 8th:* Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; New York Laryngological Society; Medical Society of the County of Cayuga, New York; South Boston, Massachusetts, Medical Club (private); Pathological Society of Philadelphia.

Friday, *February 9th:* Yorkville Medical Association, New York (private); Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties, New York.

Saturday, *February 10th:* Obstetrical Society of Boston (private).

Letters to the Editor.

VOMITING AFTER THE USE OF HEROINE.

170 West One Hundred and Thirtieth Street,
January 22, 1900.

To the Editor of the New York Medical Journal:

Sir: Dr. Manges's article on the therapeutics of heroine, just completed, is a very exhaustive and interesting study of the most useful of the newer drugs.

Every practitioner must agree with him in his favorable opinion of the value of heroine. I think, however, that a citation of two cases of mine will emphasize the fact more clearly that *continued vomiting* sometimes follows the use of this remedy.

I have used heroine with great success while connected with the New York Polyclinic and also in my private practice, and in the last two years have had only two cases out of probably four hundred where the symptom has been pronounced.

Case I.—A woman, sixty-five years old, a private patient. On November 21, 1899, I was called to the house and diagnosticated the case as acute bronchitis in the dry stage. I ordered heroine, a twelfth of a grain, every four hours. On the 22d I found she had vomited continuously since taking the first dose. She was certain that the heroine was the cause. Its use was stopped and that of ammonium carbonate substituted. There was no vomiting after this until, on the 23d, when the cough had increased, heroine was ordered again, a twentieth of a grain, every four hours. During the evening I was again called in. The patient was vomiting and straining. She was quite exhausted. I prescribed tincture of iodine, and the nausea passed off quickly.

Case II.—A girl, five years old. On January 13, 1900, she was examined in my office. I found her to have a bad mitral regurgitation and suffering from pertussis. Heroine, a twenty-fourth of a grain, every five hours, was ordered. On the 15th I was called to the patient's house and found her very weak and exhausted. She had been vomiting thirty-six hours. I taxed the family with not calling me soon enough, but they seemed to have no idea of the gravity of the case. The use of heroine was stopped, and strychnine sulphate, a hundredth of a grain, and nitroglycerin, one two-hundredth of a grain, every four hours, were ordered, also whisky every two hours. By night the patient was very much weaker, but the vomiting had ceased. On the 16th she died in syncope.

The fatal ending in Case II can not be fairly attributed to heroine alone. The heart lesion was pronounced and the child was anæmic. Probably any great strain or shock would have ultimately been fatal. Still, the heroine, by causing the excessive vomiting, was the indirect cause of death. In conclusion, I suggest that every physician should bear in mind this symptom, or a possible idiosyncrasy, and be on his guard against it.

W. Ross Thomson, M. D.

Pith of Current Literature.

The Rôle of the Kidneys in the Production of Hæmoglobinuria.—*Treatment* for December 14, 1899, says that any research tending to throw light on that curious malady hæmoglobinuria is most welcome, for at present our knowledge of the ætiology of the condition leading up to the morbid appearance in the urine is practically nil. Dr. Ferruccio Schuffer (*Il Policlinico,* August 30, 1899) points out that at the present time there are two theories regarding this disease. The first maintains that the function of the kidney is merely to remove the hæmoglobin from the blood, in which it already exists as the result of destruction of red corpuscles. In this case the action of the kidneys would naturally be merely passive —indeed, that of a filter. In the other view, the kidneys themselves are the real agents at work actively destroying the red corpuscles, whence it is inferred that the hæmoglobin originates in them only. It was to determine which of these theories was correct that the author undertook the experimental researches of which the results are now recorded. It is, of course, clear at the outset that the experimentally evidenced hæmoglobinuria must differ in many and important particulars from that which is generally met with in the human subject. On the other hand, there are certainly *toxic* forms of hæmoglobinuria affecting man which may legitimately be regarded as being akin to experimental forms of the affection. Prominent in this sense is the hæmoglobinuria which sometimes occurs as the result of the administration of quinine, that form of the malady about which so much discussion has arisen in connection with "black-water fever of West Africa." The author next describes the means taken to observe the results obtained. These consisted in tying one of the emulgent veins of the kidney, and in collecting separately the urine passed from each renal organ. The next step was to note the result of the ligature upon the removal in the urine of certain substances injected into the circulation. Methylene blue was selected for this purpose, and it was found that the result of the ligature of the efferent vessels was that the extrusion of the blue was delayed about an hour and a half on the side which was ligatured. Other experiments confirmed this observation. The next proceeding was to provoke hæmoglobinuria by the injection into the veins of distilled water, or subcutaneously of glycerin. Among other things, it is clearly proved that, as regards hæmoglobinuria set up by distilled water or glycerin, used in the manner referred to above, the quantity of hæmoglobin found free in the circulating blood is invariably less than that contained in the urine, from which and other considerations the view which attributes the occurrence of the hæmoglobinuria to the action of the kidneys deserves great support. The absence of lesion of the kidneys, or at all events of permanent lesion of these organs, in cases of hæmoglobinuria may be due to the morbid change being quite transitory, but what the real nature of the lesion may be is as yet undetermined. It is of great importance, however, to get exact knowledge as to the organ which is the seat of lesion in this obscure malady, and the present paper, containing the result of a most able research, does much to enable us to say that the kidney is the organ primarily at fault in this disease.

The Therapeutic Uses of the Strawberry.—In our issue for July 22, 1899, we cited from the *Lancet* some remarks concerning strawberries in gout, and the opinion of Linnæus thereupon.

The *Boston Medical and Surgical Journal* for December 21, 1899, quoting the *Medical Press*, says that Dr. John Knott has culled the most important evidence on the subject from the pages of the prominent herbal authorities of the past centuries. The quaint and always entertaining John Gerard gives his readers the following information on the subject of the therapeutics of the strawberry:

"THE VIRTUES.

"*The Liquid Juice.*—Taken to the quantity of three or four spoonfuls or more, either mixed with the Syrup of the ripe Berries, or with a little Mutton Broth, Morning and Night, it cools the Blood and Liver, allays Inflamations of the Reins and Bladder, provokes Urine, takes away the heat, sharpness and scalding thereof; stops Women's Courses and the Bloody Flux, and decreases the Tumour or Swelling of the Spleen. Applyed to the Gums it fastens loose Teeth, stops Catarrhs, or Defluxions of Rheum to the Mouth, Throat, Teeth, and other Parts, and is singular good for hot, red, and inflamed Eyes, being dropt into them: As also to repel hot, red, and sharp Tumors or Eruptions in the Skin, whether Face, Hands, or other parts; and to take away redness of the Face, Spots or other Deformities of the Skin.

"*The Decoction of Roots, Leaves or Unripe Fruit in Water and Wine.*—It has all the former Virtues, being used in the same manner, and may be taken to half a Pint at a time Morning and Night.

"*The Lotion or Gargarism.*—Take of the Liquid Juice or Decoction a Pint, Honey three or four Ounces, Spirit of Wine two Ounces, mix and dissolve. It cleanses and heals foul Ulcers in the Mouth, Throat, Privities, or other parts, heals Ulcerated and Spungy Gums, and fastens loose Teeth.

"*The Distilled Water of the same Roots, Leaves and Berries.*—It is good for hot and inflamed Eyes, redness of the Face and Skin, and other Deformities of the same; hot Eruptions of the Same, Anthonies Fire, &c.

"*The Ophthalmick.*—Take of the former Distilled Water a Pint, Honey three Ounces, Spirit of Wine two Ounces, mix and dissolve. Dropt into the Eyes 3 or 4 times a day it is good against an Ophthalmy, redness, inflamation, and hot Rheums in the Eyes.

"*The Ripe Berries.*—They cool a hot and cholerick Stomach; as also the Blood, Liver, and Spleen; quench Thirst, and refresh weak and fainting Spirits.

"*The Syrup of the same Berries.*—It has all the same Virtues, and may be given two or three Ounces at a time upon Occasion.

"*The Distilled Water of the Ripe Berries.*—It is a Cosmetick for the Skin, good against Fever, and Inflamations of the Eyes; Anthonies Fire, and other like hot Eruptions; Melancholy, Faintings and Passions of the Heart.

"All readers of the above record must admit that the *latest* of the '*new*' remedies for gout has in former ages occupied a rather prominent position in the therapeutic armamentarium. And that the judicious internal administration of strawberries—with or without cream or other correspondingly pleasant adjuvant—will always prove 'comfortive and cordial' as well as 'arthritick,' to the gouty as well as to those not so afflicted, the present compiler, for one, entertains no doubt whatever." We occasionally feel, says the *Journal*, that the vaunting of new remedies in our own day bears a certain resemblance to this optimistic view of the strawberry's virtues.

Syphilis in Relation to Life Insurance.—Kelch (*Virginia Medical Semi-monthly*, October 27, 1899; *Charlotte Medical Journal*, December, 1899) points out that there is syphilis and syphilis. The case, he says, may be benign, yielding readily to treatment, or it may be menacing, malignant, and resistant, and so he considers the ordinary questions in regard to this disease on insurance blanks as too loose and vague. Cases of syphilis that are bad for insurance are those which from the multiplicity and intensity of their accidents may be characterized as grave; it may be on account of the nature of their manifestations—*e. g.*, ulcerations, deep, extensive, phagedenic, menacing, etc.; again, it may be on account of their tendency to the visceral form, or to morbid determinations, which ordinarily occur only at an advanced age, or perhaps on account of the reaction which the diathesis exerts upon the constitution, the nutrition, or the health; a syphilis of the asthenic, depressive, innutritive form; or again, one obstinate to treatment or one presenting such and such peculiarities infinitely variable but all unequivocally indicating an unusual intensity, a real malignity, as it were, of the diathesis. "Bad again are those cases which select for their morbid determinations some important organ, such as the eye, brain, spinal cord, medulla, etc. Those cases particularly tending toward ocular localization are remarkable for their obstinacy and relapses." Thus it may seem that no syphilitic is a fit subject for insurance, but this is as false as its opposite, that any syphilitic is a fit subject. The author states that the really safe syphilitic for insurance is neither the benign nor the malignant, but the *moderately severe*, since a factor of great importance is the treatment the applicant has undergone. The benign cases are not sufficiently troubled to undergo proper treatment and the diathesis shows itself ten, fifteen, twenty, or more years later in some obscure manifestations of the brain or spinal cord. Consequently the important matter is, if an applicant has had syphilis, what treatment has he had, and for how long?

Aspirin.—Dr. F. C. Floeckinger (*Medical News*, November 18, 1899), as the result of an experimental investigation of this drug, concludes that aspirin is a most valuable substitute for salicylate of sodium for the following reasons: 1. Its agreeable taste. 2. Its freedom from irritating effects upon the stomach. 3. The absence of tinnitus aurium after the administration of physiologic doses. 4. The absence of cardiac depression. 5. The fact that it does not impair the appetite, even during prolonged use.

Typhoid Complicated by Purulent Meningitis.—Shorno (*Djetskaja Medizina*, No. 3, 1899; *Clinica moderna*, November 29, 1899) records the case of a little girl, nine years of age, affected with typhoid, who on the twentieth day of her illness manifested cerebral symptoms, vomiting, delirium, cephalalgia, etc. On the twenty-third day death ensued, preceded by convulsions.

At the autopsy, together with the anatomopathologic signs of typhoid, was found a purulent meningitis of the convexity of the brain. Microscopical and bacteriological examination of the meningeal pus showed the presence of the bacillus of Gaffky as the cause of the meningitis.

The Restoration of Entire Tibiæ after Necrosis from Osteomyelitis.—Cushing (*Annals of Surgery*, October, 1899; *American Journal of the Medical Sciences*, January) reports an instructive case in which he was able to restore the entire tibia after an acute osteomyelitis. The method employed is described by his summary as follows: The indications are: To save the patient's life and relieve pain by immediate operation to establish free drainage. The medullary cavity should be opened, pressure relieved, and infection checked. If the bone is killed, as it usually and rapidly is in a few days, it should be removed. The most favorable time for its removal is when the periosteum and granulation tissue are in their most active generative stages, but before the process of calcification of the bone trabeculæ has shut the sequestrum within a compact, dense shell of involucrum. This point is to be determined by frequent examinations of sections of the periosteum with the microscope. It is shown by the presence of numerous fibroblasts, osteoblasts, and small trabeculæ in which lime salts are beginning to be deposited. Clinically, it can be recognized by the slight crackling sensation as the periosteum is incised, due, probably, to the crushing of the trabeculæ by the knife. The periosteum at this stage resembles granulation tissue in color, density, and vascularity. There is no macroscopical appearance of ossification. Bone will be formed from this elastic, flexible periosteal layer.

This stage in this case was probably reached in the seventh or eighth week of the disease. At this stage the necrotic bone should be removed by incising the periosteum in the long axis of the leg and shelling out the sequestrum. The periosteal sheath remaining should be closed by sutures, leaving a solid cord or mass of periosteum buried in the centre of the leg when in its most active bone-producing condition. If areas of calcification of any extent or thickness are found adherent to the inner surface of the periosteal sheath they should be dissected off. The soft parts and superjacent skin can be closed by suture. The utmost care and most efficient means should be used to render the operation an aseptic one, for primary union is important. The new bone is formed rapidly, apparently in from eighteen to twenty-four days, when the operation is done at the time above indicated. At this time ossification is so advanced that the new bone is rigid. If the operation is done too early the periosteum is injured, apparently, and its growth interfered with. If too late, a rigid bony involucrum makes the removal of the sequestrum more difficult and forms a cavity which is very difficult to close. It is demonstrated by the radiograph that the medullary cavity is reformed in the new bone. The shaft of the bone is easier to restore than the epiphysis.

A New Method of Ventrofixation of the Uterus.—Dr. Walter B. Dorsett (*American Journal of Obstetrics*, December, 1899) calls attention to a method of ventrofixation practised by himself which, he says, differs from ventrosuspension as originated and practised by Kelly and others. His experience, while limited, has not been followed by the results reported by others who have worked along the same lines. Whether his technique is different and may have some better features he does not know; but the fact remains that the results have all been highly satisfactory in his hands. He has made thirty-eight ventrofixations, and up to the time of writing has had no failures in keeping the uterus in its proper place. Four patients have borne children without any of the usual trouble reported in pregnancy or during the delivery of the child and none have had entanglements of the bowels or omentum. Of these operations, eight were done to correct different degrees of prolapsus, and the remainder were for retroflexions and retroversions. Fifteen of the latter were complicated with ruptures of the perinæum and cervix, which had been previously repaired by himself or others before the final operation was done. Sixteen were in married women of the childbearing age and between the ages of twenty-three and thirty-nine years. Twelve were in cases of marked disease of the annexa; five of double pyosalpinx and abscess of one or both ovaries; and two of disease of one tube and one ovary. Six were in marked neurasthenic women in whom there was a pronounced relaxed condition of the entire muscular system, predisposing the individual toward retrodeviation.

Dr. Dorsett describes his operation as follows: The patient is anæsthetized by chloroform and placed in the Trendelenburg position, the abdomen and pubes having previously been cleansed and prepared according to the approved aseptic methods of the day. An incision, ranging from three inches and a half to four inches and a half long, according to the thickness of the abdominal wall, is made in the median line, greater care being taken than is usual to follow the linea alba, for reasons to be hereafter stated. As soon as the abdominal cavity is reached the right hand is introduced with the palm looking toward the pubis. Adhesions are now sought for, and if any are found they are divided by inserting and cutting between ligatures. If the tubes and ovaries are diseased they are resected or removed. The uterus is then lifted up by grasping it at or a little above the fundus, with the thumb on the anterior surface and the fingers on the posterior surface. It is now held forward and upward by a double tenaculum forceps attached at the fundus by the assistant. A double curved needle, armed with an ordinary kangaroo tendon, is now inserted and passed through the sheath of the rectus muscle on the anterior aspect of the rectus, and passed around the inner border of the rectus, emerging from the posterior layer of the sheath about an eighth of an inch under the inner border, in order to grasp from three quarters to an inch of the sheath. It then passes out of this sheath and through the subperitoneal fat and peritonæum, emerging about a quarter of an inch from the incision. By following this course the attempt is made to grasp the sheath of the muscle only and avoid taking in the muscular fibres. The needle is now inserted at a point about an eighth of an inch to the right and below the centre of the fundus, on the anterior and not the posterior wall, and emerges at a corresponding point on the left side of the organ, and passes through the same structures as in the opposite side of the incision in the anterior abdominal wall, but in a reverse order. The sutures are now held by catch forceps till other steps in the operation are completed. From one to two more such sutures, placed about half an inch apart, are taken.

The next step in the operation is the introduction of the closing sutures, which are of silkworm gut. Before closing the abdomen the parietal peritonæum and the peritoneal covering on the anterior wall and the anterior portion of the fundus are scarified with a bistoury.

The peritonæum is closed by a running suture of catgut. The order of tying the sutures is: 1. The running suture in the peritonæum. 2. The kangaroo tendons. 3. The silkworm gut closing the walls *en masse.* In the execution of this operation care should be taken not to attach the uterus too high up, lest the tension be too great; also, to guard against too deeply piercing the uterus with the needle, for fear of going into the cavity of the organ.

It is shown by the preceding text that the uterus is attached to the abdominal wall by the approximation of the anterior portion of the fundus, and not by the posterior wall. This is to avoid the formation of long bands of adhesion for the entanglement of bowel and omentum, as is apt to be the case in the so-called improved or modified operation. The advantages to be gained by this operation are:

(*a*) It holds the organ in a more natural position, and long and dangerous bands of adhesion are not so apt to form, for the reason that the intra-abdominal pressure is not directed at right angles to the long axis of the uterus.

(*b*) The omentum falls down behind the uterus instead of in front, as is the case with the modified operation.

(*c*) The stitches are carried into the wall, gathering up the fibrous structure of the aponeurosis or sheaths of the recti muscles, and are not as apt to lengthen out.

(*d*) On account of the formation of shorter bands, the retrodeviation or prolapse is not so liable to recur.

In regard to the other apparent advantages of ventrofixation over other operations to correct retrodeviations or procidentias, it is seen that it permits, by the opening of the abdomen, of a thorough exploration of the uterine annexa and the removal of diseased structures that can not be accomplished with the same facility in other operations except the intra-abdominal shortening of the round ligaments and the operation of tucking them up as devised by Ruth. The chief objections are: 1. The complications liable to arise in subsequent pregnancies and deliveries, which, however, have not occurred after the author's operations. 2. The formation of dangerous bands for the entanglement of bowel and omentum, which is reduced to the minimum by the anterior attachment.

The author asks, When we consider the failures that are apt to follow the Alexander operation, together with resulting pathologic changes in other operations, are we not justified in the continuation of the practice of anterior ventrofixation, not ventrosuspension or ventrosuspensio uteri?

The Free Use of Drinking Water in Acute Hæmorrhage.—Dr. Louis Kolipinski (*Maryland Medical Journal,* December 30, 1899) recommends that under circumstances where transfusion can not be practised for want of apparatus or from any other reason, the refilling of the vascular system may be effected by the simple expedient of causing water to be given to drink, or introduced into the stomach with a tube almost continuously until the bloodless victim begins to revive and react. It is, he says, astonishing to see to what an extent a liberal supply of water can be pushed, and with it is apparent a return of strength and mental activity, slowing and deepening of the respiration, and the restoration of volume and tension to a pulse that before could not be felt. The author records a case of hæmorrhage during typhoid fever in which this method worked admirably. It is useful also in vaginal, obstetrical, and other medical hæmorrhages.

Book Notices.

The Nervous System and its Constituent Neurones. Designed for the Use of Practitioners of Medicine and of Students of Medicine and Psychology. By Lewellys F. Barker, M. B., Tor., Associate Professor of Anatomy in the Johns Hopkins University and Assistant Resident Pathologist to the Johns Hopkins Hospital. With Two Colored Plates and Six Hundred and Seventy-six Illustrations in the Text. New York: D. Appleton and Company, 1899. Pp. xxxii–1122. [Price, $6.]

It is but seldom that the opportunity is given to review a book which merits one's most careful consideration and most painstaking perusal, and, moreover, leaves with one a sense of having been in touch with an intellect which is master of its subject. Of the many medical books which to-day are presented to the reviewer for criticism, there are very few that can be characterized as worthy of deep and critical thought, for in general they are either mere compilations from standard text-books or else exploitations of theories and hypotheses evolved in the solitude of the study and unfounded upon any scientific accomplishment. They often show only too plainly that the motive which led to their production was one of aggrandizement of the author's practice, rather than the announcement of a scientific result obtained after careful and painstaking labor.

Happily, the work of Dr. Barker is an exception, and in the field it covers it stands unique. In 1897 he began a series of articles on the anatomy of the nervous system in the *New York Medical Journal,* and continued his contribution during the following two years. Upon these papers as a basis he has built a work which, in its comprehensiveness, thoroughness, and scholarly presentation of the subject, is the finest production of its kind in the English language. Until a few months ago physicians and students in this country who were unfamiliar with the German and French languages were seriously handicapped by the want of an exhaustive treatise on the nervous system. This need was partly filled by the publication of the translation of Edinger's text-book, but now the desire of the most exacting student is completely satisfied by the work under consideration.

The book is naturally divided into two parts. The first part deals with the history and development of the neurone concept, the external and internal morphology of the neurones, their histogenic relations, and their pathological and physiological processes. The second and larger portion of the book treats of the chaining and grouping together of the neurones.

For the general reader the first section of the work is the more interesting and instructive. Any physician, whether or not he is specially interested in neurology, and the student, whether of psychology or of related studies, may read this section with profit and gain a clear and concise view of the wonderful anatomy of the most interesting part of the human structure.

Dr. Barker treats of his subject entirely from the neurone standpoint. He begins with an historical review of the development of the neurone concept from the time when Ehrenberg discovered ganglion cells, in 1833, and brings it up to the recent and remarkable work of Held and Apáthy, in 1897. Every investigator in the field of neurology who has made any contribution worthy of the name is mentioned, his work being described and carefully and impartially criticised, so that the reader gains a clear conception of the relation of each new fact to the sum of our present knowledge.

Regarding the status of the neurone theory, the author takes a positive stand in its favor, though in the formation of his judgment and the weighing of different facts, for and against, he is both scientifically critical and accurate.

He states that anastomosis between neurones is the rare exception, and, yet, he does not deny that such anastomosis does occasionally exist, as has been shown by Dogiel, Tartuferi, Edinger, and others. His personal experience with specimens prepared according to Dogiel's method leads him to believe that the appearances of anastomosis seen are really optical illusions. And the fact that, at least so far as embryonic tissues are concerned, the conception of the neurone independence has had its complete anatomical justification, convinces him as to the general validity of the doctrine of neurone individuality, even though occasional anastomoses do occur, and it is proved true from the work of Held, Apáthy, and Bethe that in adult life reciprocal relations exist of a far more intimate sort than those that obtain in the embryo.

In the consideration of Held's and especially Apáthy's work, the author takes the position of a man who, while he does not doubt the facts presented, yet waits patiently for confirmation and further investigation before drawing his conclusions. In this respect he is preeminent over those investigators who, from the alacrity and avidity with which they receive Apáthy's work, one would imagine, had been patiently and anxiously lying in wait for some weapon with which to assault the neurone theory. The author calls attention to the fact that Apáthy's published work has been almost entirely on invertebrates, based on new and untried methods, and as yet unconfirmed. Furthermore, he points out that an attentive analysis shows Apáthy's findings "to possess far less that is absolutely novel and revolutionary than many seem to imagine." The unipolarity of the cells in invertebrates has long been known; the fact of the pyriform process corresponding to an axis cylinder and dendrites is stated in text-books; and the fibrils in the processes and the reticula in the cell bodies have been the object of study and polemical discussion for years. Even his neuro-fibrils Apáthy admits were first seen and described by Kupffer. What are novel in Apáthy's contributions are his deductions and hypotheses, and on these Dr. Barker asks to be allowed to be "judiciously skeptical," though he adds, and quite justly, we think, that, even though it may be found that the cells of the nervous system are connected one with the other, the unity of the cell need not be destroyed, and the doctrine of the individuality of the neurone may remain. Any one will be well repaid if he only reads the honest, impartial, and careful analysis which the author makes of Apáthy's much-discussed work.

The same may be said to be true regarding Dr. Barker's estimate of the value of the stain and method of Nissl. It was but a short time after Franz Nissl published his method that hosts of students were applying it to various nerve cells in all forms of animal life, and with varying degrees of success, depending largely upon the technical skill and experience of the investigator. There followed, of course, the usual ardent enthusiasm about the new discoveries, but after a while, as fallacies and inconsistent results began to appear, the enthusiasm changed to that cynical skepticism which easily arises in those who are too indifferent to be enthusiastic, and who, in lieu of actual accomplishment, find pleasure in the assumption of a quasi-judicial attitude.

The author disarms these critics by admitting that much that has been found in the neurone by the Nissl method needs confirmation, and part of it may in time be proved incorrect. He even says, as Nissl himself does, that to note the minute changes in the chromatic and achromatic substances in degenerations and in toxic conditions requires much experience and familiarity with the many deviations in the character of the cell, and he adds that, unless he knows that the results are contributed by an investigator of experience, he would be very skeptical of accepting the facts.

However, he describes very fully the results obtained by careful use of the method on the normal neurone, and in the study of degenerations and of changes due to toxicity and fatigue he presents the various pictures and alterations in the chromatic substance, and he gives a very careful estimate of their value. He admits that the changes in the chromatic substance alone, as shown by Nissl, do not suffice to account for the clinical phenomena connected with them, but says that much depends upon the changes in the achromatic substance, concerning which our present knowledge is very deficient.

Considerable space is devoted to the subject of degenerations, and a great deal of stress is laid upon the discoveries and facts which have tended in recent years to disprove the truth of the Wallerian doctrine. Among the other subjects dealt with in this section are changes in nerve centres caused by cutting off the blood supply, the effects of acute and chronic poisoning of the neurones, the phenomena of regeneration, the incessant activity of the nervous structures, the absence of proof of any actual spontaneity in the neurone elements, the doctrine of the specific energies of the nerves, the unity of nerve functions in the neurones, the direction in which impulses are transmitted, and the influence of activity, fatigue, repose, and poisoning upon the structure of nerve-cell protoplasm.

The second portion of the book consists of a very exhaustive consideration and description of the grouping and chaining of neurones. The nature and form of peripheral nerve ending of all kinds, the nervous mechanism of the special sense organs, and the origin, course, and termination of the various fibre systems are all described with most painstaking accuracy and with due regard to varying opinions when a difference exists. Some idea of the completeness of this portion of the work may be gathered from the fact that it comprises some six hundred and fifty pages out of the thousand of which the book consists.

There are certain features of the book which deserve special mention: the illustrations, the bibliography, and the index of authors. The number of illustrations is exceptionally large, all of the finest type, and in a work of this kind they play no minor part, but tend in every way to enhance its value. As to the bibliography, it is enough to say that the student has at his command a most exhaustive catalogue of neurological literature, arranged in such a manner as to be of the most practical benefit to him.

A Manual of Gastric Methods: Chemical, Physical, and Therapeutical. By A. LOCKHART GILLESPIE, M. D., F. R. C. P. E., F. R. S. E., Lecturer on Materia Medica and Therapeutics in the School of Medicine of the Royal Colleges, Edinburgh, etc. With a Chapter upon the Mechanical Methods used in Young Children. By JOHN THOMSON, M. D., F. R. C P. Edin., Assistant Physician, Royal Hospital for Sick Children, Edinburgh. New York: William Wood & Co., 1899. Pp. x–175.

THIS excellent little manual will be appreciated by any one taking interest in the latest developments of methods for gastric examination. The work also will be found invaluable to those of us who wish to make a scientific analysis of the stomach's contents. The author depicts the mechanical devices for obtaining the necessary specimens for study, and in an attractive and graphic manner describes the simpler chemical methods of examination. He has, as well, placed at our disposal the more exact and complicated procedures. The work is fully illustrated with drawings pertinent to the text, thus further adding to the attractions of this instructive little work.

A Text-book of Embryology for Students of Medicine. By JOHN CLEMENT HEISLER, M. D., Professor of Anatomy in the Medico-chirurgical College, Philadelphia. With One Hundred and Ninety Illustrations, Twenty-six of them in Colors. Philadelphia: W. B. Saunders, 1899. Pp. 9 to 405. [Price, $2.50.]

IT is becoming more and more evident that a knowledge of the growth and development of the organs and tissues of the body is necessary both for a proper comprehension of the adult organism and for an understanding of many conditions that need medical or surgical interference.

We have been seriously handicapped by lack of a text-book in the English language which was concise, yet extended enough to render the more abstruse points sufficiently intelligible. We do not intend in making this statement to decry in any way whatsoever works in our language which are most excellent, and which have received world-wide recognition.

Those of us who have had any experience in teaching all recognize, however, the necessity of making, in so far as possible, absolute statements to students and of not giving them the choice of differing theories the relative excellence of which they are unable to estimate.

Dr. Heisler has evidently appreciated these facts, and the result is a text-book that is extremely well adapted to student instruction, and, yet, goes sufficiently into detail to be of value for reference to more advanced workers.

The book is distinctly a human embryology, intended for students of human anatomy. Thus the general arrangement of the book differs somewhat from that usually found in embryologies, in that the grouping of the various systems is nearly the same as is found in text-books of adult human anatomy. This feature, together with the fact that each chapter is as complete as possible in itself, renders the book very convenient for reference, especially for medical men.

The wording of the book is exceptionally clear and of uniform excellence. Points in development usually most difficult of comprehension are rendered simple. The illustrations have been selected with much judgment and are very well executed.

The only ground that we can find for criticism, and it is rather a point of individual judgment, is the fact that no attention has been paid in the book to the errors of development that result in pathological conditions. The author has, no doubt, felt that the consideration of this subject is foreign to the purposes of such a book. We feel, however, that it would be well in a book intended for medical students to at least call their attention to such points as they arise in the consideration of the development of any organ or region. We can heartily recommend the book, and believe it will be of great value.

Ueber epitheliale Gebilde im Myometrium des fötalen und kindlichen Uterus, einschliesslich des Gärtner'schen Ganges. Von Dr. ROBERT MEYER, in Berlin. Mit 36 Abbildungen im Text und auf 11 Tafeln. Berlin: S. Karger, 1899. Pp. 154.

THE appearance several years since of a monograph by von Recklinghausen on the adenomyomata of the uterus has inspired a good many painstaking studies, undertaken with a view of determining by careful statistical investigation the frequency of the persistence of structures ordinarily considered as belonging wholly to fœtal existence. The frequent occurrence of dermoids in the pelvic region has always been suggestive that many remnants of fœtal epithelium must be deposited during the differentiation of the female genito-urinary system. We can now conclude from the very careful work of the author of this monograph that, besides epithelial remains, we may find in a certain proportion of cases remnants of the peritoneal endothelium in the tissues of the broad ligament and in the substance of the uterus. In the substance of the uterus may also be found remains of Gärtner's duct, and near it well-marked remains of the Wolffian duct, and in the walls of the Falloppian tube portions of aberrant Wolffian bodies have been found. It is easy to see how important these findings are in any study of the pathogenesis of tumors. For further details the reader must be referred to the original essay.

Chirurgie du foie et des voies biliaires. Par J. PANTALONI (de Marseille). Avec 348 figures dans le texte. Paris: Institut de bibliographie scientifique, 1899. Pp. xiv–625.

WE have previously had occasion to notice favorably the volumes on the surgery of the individual organs published under the supervision of the Institut de bibliographie scientifique of Paris. The present volume is as valuable as its predecessors. The classification of the methods is beyond criticism, the indices are complete and accurate, the illustrations, having been photographed in many cases from the originals in the journals, are true and accurate, but have suffered somewhat from the necessary reduction and loss of sharpness due to this double reproduction. The printing, binding, and paper are of a quality quite remarkable in a medical work of this type. In a book of this sort there is little room for originality, the main point being attained by the accurate reproduction of the words of the surgeon who originally described a method, by the proper classification of the operations, by the elimination of duplicates and unimportant procedures, and by the indexing of the whole. All this has been done well, and the volume can be confidently recommended to any one wishing a survey of the purely operative procedures which have been used in the treatment of the diseases of the liver and gall bladder. No bibliography or pathological discussion has been introduced into the volume.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, etc. Volume IV. December, 1899. Diseases of the Digestive Tract and Allied Organs, the Liver, Pancreas, and Peritonæum — Genitourinary Diseases in the Male, and Syphilis—Fractures, Dislocations, Amputations, Surgery of the Extremities, and Orthopædics—Diseases of the Kidneys—Physiology—Anatomy—Hygiene—Practical Therapeutic Referendum. Philadelphia and New York: Lea Brothers & Co., 1899. Pp. vi–17 to 408.

THE fourth and final volume of this publication for the year 1899 is equal in merit to its predecessors, and, while scarcely so interesting as the third volume, it is, nevertheless, an excellent conclusion to the first year of the new work. What we said of the production on the appearance of its first volume we see no reason to change, for the work is as good as any of the yearbook class and better than most. Its publication in several volumes of a very convenient size is one of the strongest points in its favor.

BOOKS, ETC., RECEIVED.

Diseases of Women: A Treatise on the Principles and Practice of Gynæcology. For Students and Practitioners. By E. C. Dudley, A. M., M. D., Professor of Gynæcology, Northwestern University Medical School, etc., Chicago. Second Edition, revised and enlarged. With Four Hundred and Fifty-three Illustrations, of which Forty-seven are in Colors, and Eight Full-page Plates in Colors and Monochrome. Philadelphia and New York: Lea Brothers & Co., 1900. Pp. 15–17 to 717. [Price, $5.]

A Manual of Modern Surgery: An Exposition of the Accepted Doctrines and Approved Operative Procedures of the Present Time. For the Use of Students and Practitioners. By John B. Roberts, A. M., M. D., Professor of Anatomy and Surgery in the Philadelphia Polyclinic, etc. Second Edition, revised and enlarged. Illustrated with Four Hundred and Seventy-three Engravings and Eight Plates in Colors and Monochrome. Philadelphia and New York: Lea Brothers & Co., 1900. Pp. 12–17 to 842. [Price, $4.25.]

The Treatment of Diseases of the Nervous System. A Manual for Practitioners. By Joseph Collins, M. D., Professor of Nervous and Mental Diseases in the New York Post-graduate Medical School, etc. New York: William Wood & Co., 1900. Pp. xiv–602. [Price, $5.]

Mental Affections. An Introduction to the Study of Insanity. By John Macpherson, M. D., F. R. C. P. E. New York: The Macmillan Company, 1899. Pp. x–3 to 380. [Price, $4.]

The Refraction of the Eye, including a Complete Treatise on Ophthalmometry. A Clinical Text-book for Students and Practitioners. By A. Edward Davis, A. M., M. D., Adjunct Professor of Diseases of the Eye in the New York Post-graduate Medical School and Hospital, etc. With One Hundred and Nineteen Engravings, Ninety-seven of which are Original. New York: The Macmillan Company, 1900. Pp. xii–431. [Price, $3.]

Muscle, Brain, and Diet: a Plea for Simpler Foods. By Eustace H. Miles, M. A. (Camb.). New York: The Macmillan Company, 1900. Pp. xv–345. [Price, $1.]

Practical Text-book of Midwifery for Nurses and Students. By Robert Jardine, M. D. Edin., M. R. C. S. Eng., etc. With Thirty-six Illustrations. New York: The Macmillan Company, 1899. [Price, $1.50.]

The Lute and Lays. By Charles Stuart Welles, M. D. New York: The Macmillan Company, 1899. Pp. 103.

Twenty-seventh Annual Report of the State Charities Aid Association to the State Board of Charities of the State of New York. November 1, 1899.

Twenty-seventh Annual Report of the New York County Visiting Committee for Bellevue Hospital and Other Public Institutions. October 1, 1899.

Report of the Surgeon-General of the Army to the Secretary of War for the Fiscal Year ending June 30, 1899.

New Inventions, etc.

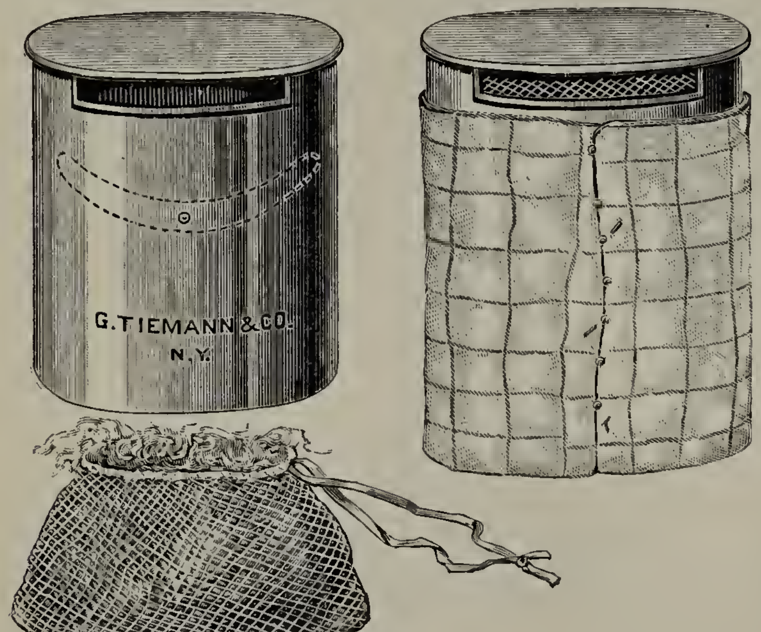
DESCRIPTION OF A NEW INHALER.

By GEORGE RYERSON FOWLER, M. D.

THE object of the present form of inhaler is to furnish an apparatus for the administration of ether that shall combine the advantages of cleanliness, quick diffusion of the ether over a large distributing and comparatively non-absorbing surface, a relatively large chamber in which the ether vapor is diffused, and last, but not least, provision against the occurrence of septic pneumonia from the passage of fluids from the mouth and pharyngeal cavity into the respiratory tract below the glottic opening. Further than this, the apparatus is comparatively inexpensive.

It consists of a light, oval-shaped metal case closed at one end. The absorbent medium for the ether is the ordinary curled hair of the upholsterer. This is placed in bags made of gauze or other open-work material and placed in the top of the inhaler (its closed end). The ether is poured upon the distributing cushion of horsehair through a three-eighth-inch in width slit upon the *side* of the inhaler near the top. This slit likewise serves for the ingress and egress of air. In this respect the apparatus is essentially an open inhaler, although the closing of the top prevents the readiness of egress of the expired air to the extent present in the usual forms of the open inhaler, such, for instance, as that devised by Dr. Allis, of Philadelphia. There is no special disadvantage in this, however, since the success of the methods of administration by closed inhalers demonstrates, in a practical manner, at least, that the reinhalation of expired air mixed with vapor of ether is not identical with the reinhalation of expired air with its accompanying carbon dioxide. Under these circumstances, therefore, the present apparatus serves as a compromise between the closed and open methods of ether administration. The horsehair material used for distributing the ether is only loosely packed in the inhaler. It is capable of being boiled for purposes of sterilization, after which it is washed with alcohol, and may be used immediately.

Upon the inner surface of the side of the inhaler, opposite to the slit, there are placed two oblique grooves, terminating at the point where a small hole is made in the side of the inhaler (shown in dotted lines in the cut). By means of this groove all superfluous ether, which otherwise would run down the side of the inhaler upon the patient's face, is carried through the opening and absorbed by the towel covering. In the hands of a careful administrator, or one familiar with the use of an inhaler in which rapid distribution of the ether is aimed at, the necessity for the presence of this groove will arise rather infrequently.



In using the inhaler an ordinary towel is folded lengthwise into a strip from six to eight inches wide. This is wound about the inhaler snugly, the end being secured by three or four common pins. A bunch of loose horsehair about the size of a doubled fist is then either wrapped in gauze or placed in a bag of some open-work material and pushed to the top of the inhaler. In administering the anæsthetic the apparatus is placed over the patient's face, without ether having been placed upon it previously. The patient's head is turned to one side. The oval shape of the inhaler is such as will permit the patient's head to be turned to either side, the edge of the towel in which the inhaler has been wrapped permitting adaptation to the inequalities of the nose, cheeks, and chin. The patient is requested to breathe through the inhaler by a number of deep inspirations, this manœuvre serving the double purpose of distracting the patient's attention and at the same time gaining his confidence in his ability to breathe easily and freely through the apparatus. Ether is then placed on the horsehair through the slit and without removing the apparatus from the patient's face. *This is done drop by drop* at first, the patient being encouraged to cough occasionally if the throat seems to be irritated by the presence of the ether vapor.

The object in turning the patient's head to one side is to reduce to a minimum opportunities for the passage of mucus and other fluids from the buccal and pharyngeal cavities into and through the glottic opening. By far the larger number of cases of post-operative pneumonia are due to sepsis. Ample opportunity is afforded for the passage of septic material with the patient's head in the position ordinarily assumed in the administration of the anæsthetic, while this is reduced to a minimum if the patient's head is turned to one side, thus encouraging the collection of secretion in the lateral portion of the pharynx, from which it is occasionally removed by the anæsthetist by means of a cotton or gauze swab. With the present form of inhaler the anæsthetist is compelled to keep the patient's head to one side in order to pour ether upon the distributing surface, and, inasmuch as this inhaler, like all efficient inhalers of the open pattern, requires almost constant feeding with ether, this varying from a few drops a second to an occasional steady stream, the administrator will practically keep the patient's head turned to one side throughout the entire anæsthetization.

The height of the inhaler is such that with the supplementary cuff, made by wrapping the portion below the slit in the folded towel, a large chamber for the reception of the ether vapor is provided, this being in my experience quite necessary in all open inhalers, at least.

Miscellany.

The Ordinary Testimony of a Physician in a Medical Case.—The *Journal of the American Medical Association* for January 6th says that among the witnesses who testified as non-experts in Commonwealth *vs.* Cressinger, first testifying to their acquaintance and opportunities of observation of the prisoner, and then being asked whether, from such acquaintance, they had observed any indications of unsound mind, which the supreme court of Pennsylvania holds admissible, was one who was a physician. It was especially objected that the jury would be impressed with that fact in weighing his testimony. But the supreme court held that it would be quite proper that they should be. The physician was not called as an expert, nor did he testify as such, but as a neighbor, who had employed and observed the prisoner. To this, the court added that he was competent, and was admitted on the same ground as the others who were allowed to testify as non-experts, his education and practice as a physician merely making it probable that his opinion would be more valuable than that of ordinary observers.

A Lay Appreciation of the Surgeon's Labors.—The *Army and Navy Journal* for January 6th, in an editorial on the bill to increase the medical department of the army, says:

"We are coming nearer every year to the true appreciation of the heroic part of the surgeon's labors. We are more clearly seeing that the hand that wields the alleviating scalpel, or administers the soothing potion, may strike as nobly for victory as the colossal figure striding up and down the firing line. During the epidemics of fever in the Spanish war, our surgeons worked day and night, debilitating their systems until in many cases they themselves fell victims to the disease. Those were sacrifices of patriotism not the less noble because made without the stimulus of momentary excitement and for the salvation of others. Perhaps it would not be altogether unfortunate if the bill should cause some debate in congress, to the end that the champions of our army surgeons might place before the country the real service they have done and the greater service a wise provision now will enable them to perform in the greater days to come.

"No training so nearly simulates the soldier's as that of the medical profession. The doctor must hold himself at all times in readiness for the call of duty, as the soldier does, and must, like the soldier, accept without complaint or hesitation the risks to life and health attending the discharge of duty. It is not alone on the field of battle that the medical man runs these risks. They come to him in the course of an ordinary medical practice; he must often go where he will permit no one else to go, because of the danger of infection from deadly disease. The record of army surgeons, from the days of Napoleon's Baron Larrey until now, has been one that honors their profession and dignifies humanity."

Self-redemption from the Cocaine Habit.—The following account, written by a West Indian apothecary, has been transmitted to us by a prominent New York physician:

In conversation with a medical friend I related to him part of the following, and he advised me to publish it as being of interest to the profession, not many similar cases being known in medical literature. As a sufferer from severe toothaches and with a dread of extraction, painless dentistry being in the place I lived in known only by report, a dentist friend suggested my inserting cotton impregnated with cocaine solution in the tooth. I followed his advice and was relieved for the moment. The pain returning, I continued the cocaine application and thus insensibly got so accustomed to the drug that I could not do without it, pain or no pain; the tooth was filled after some time, but the habit remained. The way I used cocaine was by slightly moistening a piece of cotton with water and then pressing it on or pouring over it the crystals or powder of cocaine hydrochloride. A quantity of the drug would adhere to the cotton, and, after doubling it up, I inserted it between cheek and tooth; gradually the saliva dissolved the alkaloid and by my swallowing it passed slowly but surely into the system. In this way I used to take generally a gramme (fifteen grains) and very often as much as two grammes (thirty grains) in twelve hours. I never began using it before noon, and was generally through at midnight.

I will now state the symptoms which accompanied the taking or using of the poison: After the first quantities, say between five and ten grains, were swallowed, I felt elated, full of life and vigor, cheerful, seeing everything in the rosiest of lights; my mind would clear up and things incomprehensible to me at other times would become plain and evident. I would be willing to and actually did undergo heavy physical and mental work which under normal conditions I could not possibly have accomplished. It is the most agreeable of sensations, because one feels perfectly and serenely happy. As the dose increased the symptoms would change gradually till, the full amount being absorbed, the toxic symptoms appeared. I felt haunted, restless, morose, quarrelsome; had hallucinations of being persecuted and of impending evil; my heart would be pounding at a fearful rate, so that I could actually hear its throbbing; the eyes got glassy, with a fixed staring look; the tongue was heavy and unable to move at will; a terrible and incessant hacking cough shook the frame; the mind was obfuscated; there was inability to eat, with no feeling of hunger, and there were insomnia and an insatiable craving for alcoholic stimulants. These were the most terrible of the many symptoms. Under ordinary circumstances I can stand no strong drinks, and, yet, under the cocaine influence I drank daily a bottle of brandy during those hours, and when no other drinks were on hand I often actually drank pure alcohol, such was the craving for it; and probably it was due to the cocaine that I never got so intoxicated as the amount of liquor taken would justify one in believing. I have been a slave to this habit for over five years, and during that time many doctors have seen me and have examined me while presenting most of the symptoms mentioned and, yet, not one knew or recognized the symptoms of cocaine poisoning, attributing my ailments to innumerable other causes. This is probably due to the fact that the effects of this drug on the human system have not been thoroughly studied, and therefore are not well known. The object of this communication is to contribute to make its effects known and enable practitioners to know when they have similar patients under their care.

Being a druggist, I had the drug always within reach, and have used it all the time without ever being suspected as a cocaine fiend by anybody, including the medical men called in by my family to attend me; but one day I awoke to the consciousness that I was doing wrong and that my life was endangered. A pamphlet on morphinism, which fell into my hands by chance, opened my eyes to the danger I was incurring, and I determined to shake off the lethargy which was overpowering me, and to be a man and act like one. It was a hard task which I imposed on myself; days, weeks, and months of misery and inward struggle followed. My whole system was in arms opposing my energy and will, and the struggle was the severer because I was fighting by myself alone, unknown to anybody, and, yet, I am proud to say, I triumphed, and when I now look back to that time of untold misery, suffering, and shame I rejoice to be able to look in the eyes of my fellow creatures without shame or fear, a self-saved man. It is six months since I last used cocaine. I can have it when I want it, but, although I dispense it innumerable times and have it constantly within reach, I have personally no use for it. Let this be a warning to dentists and doctors never to put into the hands of patients drugs of a nature to tend to destroy the highest attributes of mankind.

The Boers and the Red Cross.—Surgeon C. Marsh Beadnell, R. N., acting as special correspondent with Lord Methuen's force, writes from Camp Modder to the *Lancet* for January 13th as follows:

"There appear to be men whose aim seems to be to underestimate our losses and to grossly exaggerate the losses of the enemy; men who delight to start tales that stretcher bearers and ambulance wagons are fired upon by the enemy, etc. I fail to understand their motives. Broad-minded soldiers must see that stretcher bearers can not help being shot. No Boers would purposely fire on a Red Cross party, is my belief. The Boer hospital here was struck by shell more than once, and all our ambulance wagons were struck by their missiles, a pure and unavoidable accident on both sides. I can myself give an instance in which the sick-berth steward of my ship was dressing a wounded marine; while the dressing was being put on the patient received a second bullet in the other leg, but with bullets dropping all round one it would be unfair to say that the Boers aimed at either the Red Cross or the wounded man. This particular incident occurred during our last battle at Graspan."

Such unprejudiced testimony is very satisfactory and cheering to our profession, which of its very nature counts humanity as of even more moment than patriotism.

The Development of Eastern and Western Women respectively.—According to the *Journal of the American Medical Association* for January 6th, Dr. J. W. Seaver, as a result of anthropometric measurements of the girls at Wellesley College and the University of Nebraska, has noted certain differences in the physical proportions. He is quoted as saying that the Wellesley girl has the smaller chest girth, while the Nebraskan is deeper chested, and is particularly stronger in lung capacity. In height, the Wellesley girl leads. There is an interesting difference in the heads of the two types; that of the Wellesley girl is much larger; she is flatheaded. He accounts for the difference in the types by the predominance of Teutonic blood in the West.

The St. Louis Medical Society of Missouri.—The programme for the meeting of Saturday evening, January 27th, was as follows: Fifty Years' Study and Practice of Rhinology, from 1849 to 1899—Comments to Date on the Practice and Methods of that Period, by Dr. Thomas F. Rumbold (held over from the preceding meeting); and A Report of a Case of Puerperal Sepsis Treated with the Antistreptococcus Serum, by Dr. S. J. Barker.

The New York Academy of Medicine.—The programme for the last regular meeting, on Thursday evening, February 1st, included the following: Causes of Failure of Compensation, by Dr. Morris Manges; Aortic Valvulitis and Aortitis, by Dr. Frank W. Jackson; and Recent Methods of Treatment by Baths and Exercises, by Dr. Thomas E. Satterthwaite.

At the next meeting of the Section in Pædiatrics, on Thursday evening, February 8th, papers are to be read as follows: The Treatment of Whooping-cough without Drugs, by Dr. N. R. Norton; Some Remarks on Whooping-cough as seen in Dispensary Practice, by Dr. Walter A. Dunckel; and Comparative Drug Values as observed in the Treatment of 752 Cases of Whooping-cough, by Dr. Charles G. Kerley.

The Dispensing of Alcohol by Physicians.—The *Journal of the American Medical Association* for January 13th says that according to a recently reported decision of Commissioner Wilson, of the United States Department of Internal Revenue, a physician who prescribes and sells to his patients whisky, brandy, wine, or any other alcoholic liquor that is not compounded into a medicine by the admixture of any drug or medical ingredient therewith, is required to pay special tax as a retail liquor dealer, even though the alcoholic liquor thus furnished be prescribed as a medicine only and so used.

Lectures on Military Surgery.—Beginning to-day, Saturday, February 3d, Major Louis A. La Garde, of the medical corps of the army, will deliver a course of lectures on military surgery at the University and Bellevue Hospital Medical College (New York University). A lecture will be given every Saturday morning, at eleven o'clock.

The Mississippi State Board of Health.—According to a dispatch published in the *Sun*, the new State Board of Health was organized on January 27th, and Dr. Gant, of Water Valley, was made president.

The National Pure Food and Drug Congress.—The third annual meeting will be held in Washington, beginning on Wednesday, March 7th.

The Medical Society of the County of New York.—The programme for the last meeting, on Monday evening, January 29th, included the following titles, all bearing upon the problem of a proper milk supply: How the Milk Supply of New York may be Improved, by Dr. Henry Dwight Chapin; The Work of the United States Department of Agriculture in Connection with the Production and Handling of Milk, by Henry E. Alvord, C. E., of the Bureau of Animal Industry; Dairy Bacteriology, by Professor H. W. Conn, of Wesleyan University; The Teaching of Scientific Dairying, by Professor H. W. Wing, of Cornell University; The Work of the New York Board of Health, by Dr. Herman Betz; and The Question from the Milk Dealer's Standpoint, by Mr. L. B. Halsey, Mr. A. Cuddebach, and others.

Dr. Schenk and the University of Vienna.—According to the *Boston Medical and Surgical Journal* for January 11th, it is reported that Dr. Schenk, for the past twenty-six years in charge of the Institute of Embryology, who has of late come into particular prominence because of his theories regarding the determination of sex, has been removed from his position at the university, because of his radical views. We imagine, however, that the course has been adopted not on account of radical views of Dr. Schenk, but in consequence of the extraordinary measures adopted by him to court public notoriety through the lay press.

Lectures on the History of Great Epidemics.—We learn from the *University News-Letter* that the second lecture of Professor Frederick G. Novy's course, given at the medical department of the University of Michigan, was delivered on Wednesday evening, January 24th.

The Gallinger Bill for the Further Prevention of Cruelty to Animals.—In our recent indorsement of the opposition to this bill we gave the names of the members of the Senate Committee on the District of Columbia, to any one of whom, or to other senators, personal letters on the subject may be sent. Petitions should be addressed to the Senate of the United States. Since our article was published, the constitution of the committee has been changed somewhat. It is now constituted as follows: Senator James McMillan, of Michigan (chairman); Senator J. H. Gallinger, of New Hampshire; Senator H. C. Hansborough, of North Dakota; Senator R. Redfield Proctor, of Vermont; Senator J. C. Pritchard, of North Carolina; Senator Lucien Baker, of Kansas; Senator George L. Wellington, of Maryland; Senator S. R. Mallory, of Florida; Senator W. V. Sullivan, of Mississippi; Senator W. A. Clark, of Montana; Senator Thomas S. Martin, of Virginia; Senator William M. Stewart, of Nevada; and Senator Richard Kenney, of Delaware.

Original Communications.

THE BENEFITS OF MEDICAL SCHOOL INSPECTION.*

By HENRY GRAHAM MacADAM, M.D.

THE trite remark, "There is nothing new under the sun," is usually indicative of superficial observation. It is true there is nothing new in the idea of medical inspection of schools, *if* we are to apply the phrase loosely and to anything we find in the past to which the bare words will fit. In the history of the earliest civilized times we read of medical supervisors, medical directors, and medical attendants as comprising a part of the personal furnishing of scholastic institutions. In the seats of learning in ancient Rome, Greece, and Egypt we find paid officers skilled in the art curative—and, indeed, in some of these schools and colleges the man of medicine was the chief figure of the faculty—the central sun from which emanated all light and vigor. In more modern days, too, and down even to this year of grace, we find everywhere and at all times systems, or practices, or provisions which will answer to the phrase medical inspection of schools. But for all that, the system which it is the purpose of this paper briefly to set forth is *new:* new in its originating force, new in its objects, new in its methods, and new, very new, in its achievements and consequences.

The older forms of medical supervision, and until very recent date, had for their prime object the cure of disease as disease manifested itself among the students comprising the particular scholastic circle. But the system we are now considering proceeds on radically different lines. It does not busy itself at all with curative treatment, but aims at prevention; its real charge is not the sick but the well; not the small body of individuals collected together in the school, but the entire community. And it is not at all because the schools are schools, not because they merit peculiar guardianship as being institutions of learning, that they have been singled out for special medical attention, but because they are recognized scientifically as potential foci for the spread of infectious and contagious diseases. The welfare of the entire community is the object; not, as of old, an especial care over an exclusive aristocratic circle, or any discriminating benefit conferred upon a select or favored few.

It may not have been necessary to make these preliminary observations before a body so well informed as this. I have been impelled to them because of the difficulties experienced in the past in securing for the system the vigorous support which it deserves and needs; a support which under our institutions it must necessarily get from the mass of the people; but from whom it can only be obtained by the quickening of an intelligent interest, an enlightened self-interest, if you please, under the preaching of the people's medical advisers.

The point, pith, and value of medical school inspection, as the system is developed in New York city today, are simply expressed in the well-worn adage, "An ounce of prevention is worth a pound of cure."

Philadelphia claims the honor of being the first in the field; but after some experimenting in connection with the parochial schools her efforts were discontinued. The public misapprehended the plan. The people did not want to have strange doctors trying tricks on their little darlings; the taxpayers objected to paying good money for new-fangled frills; and, it is to be feared, the physicians at large were apprehensive of an invasion into their pecuniary territory. All mistakes, yet effective in blocking the wheels of beneficent progress. I am told that new efforts are being made in the Quaker town, but as to how far the movement has advanced I am not informed.†

Boston and Chicago were both ahead of New York in adopting the idea and establishing a system for its application. But, nevertheless, beginning only in 1896, New York has already developed a scheme of school inspection which for comprehensiveness, methods, detail, simplicity, and efficiency goes far ahead of anything elsewhere existing. And it may be permissible to say that to Dr. Charles F. Roberts, sanitary superintendent of the city of New York, more than to any other one man, is due the credit for the magnificent organization which has been created. In the latter part of 1896 he addressed the board of health on the subject, showing with incisive clearness that the public schools, from the simple fact that they bring into close physical contact such large numbers of children, coming together out of every sort of sanitary environment, are, and must obviously be, just so many potential agencies for the spread of infectious and contagious diseases. The board of health heard and understood; and then, as now, being clothed with powers which a large proportion of the substantial element, alas! describe as tyrannical, so practically indorsed and adopted the plans presented that the system became an accomplished fact.

In 1897 the board of health appointed, under civil-service rules, one hundred and fifty medical school inspectors to cover what is now the borough of Manhattan.

At the outset only primary public schools, parochial schools, and the schools of the Children's Aid Society were visited. Later the field was enlarged to include the grammar and tenement schools, and those of the American Female Guardian Society and Kindergarten Association.

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* Read before the Society of the Alumni of the City (Charity) Hospital, October 11, 1899.

† Since this paper was written Philadelphia has resumed the system of school inspection, and a hundred and fifty physicians are now working regularly without compensation, but they hope to get it eventually.—H. G. M.

To-day the corps is very much enlarged, the field including all the boroughs of the "greater" city.

The objective point in the system is *exclusion;* to keep out of the school, out of contact with other pupils, any child or student who is in the grip of any infectious or contagious disease or ailment. Each medical inspector has a certain school or schools (located in easy proximity to each other) assigned to him, and these he is expected to visit on every school day, reaching his post as early as possible between 8.50 and 9.10 o'clock in the morning. The "dangerous" pupil is to be discovered and excluded *before* the general assembly of the scholars; and I may say that in my judgment the greater part of the value of the system would be lost if this early inspection were not insisted upon. From three o'clock in the afternoon, when school children go to their homes, to nine o'clock the following morning comprises eighteen hours, and among them the hours in which disease is most prone to take hold. An exclusion at nine o'clock in the morning might mean prevention absolute; an exclusion, say, at noon or later might mean locking the stable after the horse had escaped.

On his arrival at his post the inspector has brought to him all cases suspected to be of a contagious nature. These include measles, diphtheria, scarlet fever, chicken-pox, croup, whooping-cough, mumps, contagious eye diseases, parasitic diseases of the head and body, and certain other skin diseases.

If the child is found to have a contagious disease, the inspector gives him a printed form, filled in with the child's name and address, a designation of the school, and a diagnosis of the disease. The child is then sent *home* for proper treatment and is not permitted to return until official proofs of cure are presented.

These official proofs are indicated by the character of the case. The school inspector decides in the following cases: Chicken-pox, parasitic diseases, contagious eye diseases, mumps, whooping-cough, and certain skin diseases.

In cases of measles, diphtheria, scarlet fever, and croup, the child is admitted again to school on presentation of the usual board-of-health certificate.

The inspector mails each morning a report on a printed form to the chief medical school inspector, giving the total number of children examined and the names, ages, addresses, and diagnoses of children excluded.

This ends his official duty. He does not prescribe for the children excluded, nor does he visit them. They are made to understand, of course, that they must acquaint their parents or guardians with their condition. The form or card handed to them is for that purpose. They must be attended at home by their family physician or, if too poor for that, must resort to the dispensary. But the medical school inspector is done at this point. If the case is one calling for such attention, it comes under the supervision of the district medical inspector or other agency of the health department.

It is apparent that under the system here outlined the school teacher plays an important part. Upon him or her, as the case more often is, rests the duty of picking out the suspected cases. And the difficulties of the task are increased by the unwillingness of the children and, sad to say, of the children's parents to disclose the existence of an ailment. It might be imagined that the system would prove weak at this point; but such is not the fact by reason of the high degree of intelligence and zeal which has been brought to the work by the teachers in every part of the city. The medical inspectors everywhere will testify to the alertness of the teachers and the increasing skill which they develop, by experience, in the detection of those signs of "something wrong" which are the sufficient danger signals for the business in hand.

In the good old days, if a teacher detected a pupil scratching vigorously in his hair, she corrected the breach of manners by clouting him on the head. Now she turns him over to the medical inspector as having *pediculi capitis*. Or, instead of allowing a child to come to school day after day with large blotches of ink smeared over its face, she brings the victim to the inspector with her diagnosis of ringworm.

The work at its inception was unnecessarily arduous, on account of the vast number of children seen, because of a misapprehension on the part of the teachers as to the nature and scope of the work. We were called upon to examine children exhibiting every sort of symptom described in a patent-medicine almanac. I remember one of my first experiences. I was visiting a parochial school with an attendance of about one hundred and fifty. The sister in charge had placed at my disposal a small room, where I could interview my little patients in private. Imagine my surprise, on going to the school one morning, at finding my room packed with children, with a double line extending into the hall. I thought I had struck an epidemic; and, while grieved for the victims, I felt a professional elation in the thought that it was to be given to me to demonstrate the value of the system. My emotion subsided, however, with the first case. The child was crying, with its hand on its lower jaw, and my epidemic vanished through the door of the nearest dentist. To complete the tale, I examined forty-seven children, and the only one to exclude was that of a tot six years old who displayed a ringworm. The teachers know better now.

And not only have the teachers grown more expert, but the parents also are becoming both more enlightened and more vigilant. Take, for example, parasitic diseases of the head. For the first three months of the establishment of the system there were excluded 2,627 cases; whereas, for the entire year 1898, with a far greater number of schools under surveillance, there were excluded but 3,502. This education of the parents, it should be noticed, is, to a conspicuous degree, compulsory. The child excluded can not return to school until free from disease. Yet, if the child fails to return within a reasonable time, the truant officer visits the home to know the reason why. Both parent and child are thus between two fires; and the parents, especially, find that a systematic resort to soap and water and the general cultivation of cleanly habits are the royal road to their own comfort. The children must be clean if the schools are to relieve the parents of their care.

But the matter by no means stops here. The same principle operates measurably in all cases. The parents become alive to the importance of hygiene; they wake up to the value of pure air, good water, cleanly surroundings, and cleanly habits.

And here, indeed, we find what may be described as the great secondary benefit of the system, but which will undoubtedly prove, as time goes on, the benefit of the highest importance of all. The direct work is the prevention of the spread of disease; but the ultimate effect, in the education of the mass of the people, will be to prevent the origination of disease. Primarily we seek to check the transmission of contagious diseases by dealing with the children. Ultimately, we raise the standard of health in the entire community by instructing the whole people in the modes of right living. And here I wish to point out, or rather to emphasize, the fact that the scheme of medical school inspection attains its highest efficiency and value because it is a part of a greater system—a system which has practically been developed in the sense of scientific, persistent, and forcible planning within the short space of fifteen or twenty years. Beginning with the wonderful work of Lister and the practical rediscovery of antiseptic and aseptic treatment, a brilliant light was thrown over the whole field of medicine, and the great truth was manifested with all the force of a new revelation, that the secret of the health of humankind lies not so much in the cure of disease as in the *prevention* of it. From this root, indeed, we have all the growth of modern sanitation.

The statistics of our subject, from the very nature of the field, can not show the real results of the work—for the results are negative: the prevention of contagion. Nevertheless, they are in a high degree suggestive, and serve to illustrate the scope of the work. The following are compiled from the *Quarterly Reports of the Board of Health* for 1898, the annual report not having yet been published:

The total daily attendance, taking the average, was 203,095, distributed through 230 schools.

There were examined 139,965 pupils; of these, 7,606 were excluded.

The causes of exclusion were as follows:

Parasitic diseases of the head	3,502
Contagious eye diseases	1,627
Skin diseases	703
Mumps	517
Chicken-pox	380
Whooping-cough	276
Measles	253
Parasitic diseases of the body	152
Diphtheria	118
Scarlet fever	32
Croup	25
Miscellaneous	21
	7,606

Every one of these 7,606 cases was not merely a case of disease in itself, but a seed of disease, planted in a most fructifying soil, with all the conditions present for its rapid and widespread multiplication. Consider for a moment. There are in the borough of Manhattan approximately 200,000 in attendance at the public schools, while the total population is about 2,000,000. What will it mean to prevent these 200,000 children (or ten per cent. of the population) from being cultivators and disseminators of contagion? It will mean first and obviously the elimination of the greatest causative factor in the production of epidemics. It has been no uncommon thing in the past to see certain public schools closed up on account of the raging of an epidemic among the children and the families to which they belonged. Under the system now in practice this has already become an impossibility. It will mean, secondly, the suppression of numerous manifestations of disease which, while not presenting the danger of an epidemic, nevertheless amount in the aggregate to a vast sum of physical ill.

It is manifest, as I have said, that the statistics of the subject are merely indicative of the real results achieved. The inspection system removes the seed of disease from the soil. Just how much harm it thereby prevents it is impossible to say. But the good is not therefore either intangible, theoretical, or uncertain.

Some years ago a cow kicked over a lamp. Had Chicago possessed a thoroughly efficient fire department, the blaze resulting might have been lost sight of in the statistical reports among the "miscellaneous" insignificant fires. But the efficient department had not been created and half of Chicago was laid in ashes.

Protracted Gestation.—Dr. John Phillips (*Lancet*, January 13th) records the case of a primipara, unmarried, aged sixteen years and four months, with whom a single intercourse was said to have occurred thirteen days after the cessation of the last period on August 24, 1898. The confinement did not take place until July 13, 1899, three hundred and twenty-three days after the cessation of her last period, and three hundred and ten days after the date of coitus. The evidence of the girl as to the date of her last period was supported by that of the aunt who looked after her.

A FEW
CLINICAL STUDIES OF CARDIAC DISEASES IN INFANCY AND CHILDHOOD.

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CONSIDERABLE confusion still exists concerning the significance of cardiac signs in infancy and childhood. Thus the actual importance of the frequent systolic murmur is still disputed. Saltman maintains that anæmic murmurs are rare under the age of eight years. The extracardiac murmurs are also said to be uncommon. From this one must conclude that murmurs in infancy and childhood denote an organic change. Lees, however, is not disposed to place any special prognostic value on cardiac murmurs, and seems to believe that accidental murmurs are exceedingly common.

It is true that cardiac physical signs without corresponding symptoms are frequently discovered, but rules applicable to their interpretation are now more or less unsatisfactory. On the other hand, cardiac physical signs which are accompanied by symptoms denote a serious condition, which is less amenable to treatment than in adolescence.

Practitioners very frequently overlook diseases of the heart and attribute the symptoms to other causes. How often is endocarditis diagnosticated malaria! Brunton draws attention to this popular error, and adds that "if you find a temperature which runs a course very much like quotidian ague in a case where you can find no malaria, and where you find no indication of suppuration, it is very likely to be endocarditis." The following illustrates this clinically:

CASE I.—The patient was a boy, five years of age, rather small and delicate. His parents, who lived in Texas, were visiting with him in Arkansas for several weeks. At that place he took a fever with marked daily exacerbations. The physician who was consulted diagnosticated malaria, and prescribed the usual treatment. But the fever persisted, and about two weeks after onset the father brought him to St. Louis.

On examination, no splenic enlargement was found. No evidence of tuberculosis or suppuration could be discovered. The temperature at that time was 100.4° F. On auscultating the heart a loud systolic murmur was clearly audible in apical area, and was transmitted to the left. The relative dullness was slightly increased in breadth. Dr. Saunders also saw the case and corroborated the suspicion that the symptoms and signs pointed to an endocarditis. The only general symptoms were pallor, slight fever, and weakness. Under alkalies and salicylates the fever disappeared in a few days, but the murmur persisted.

Pain in the præcordial region is not uncommon in heart disease in childhood, and it may occur when no evidence exists that the heart is affected. The following are examples:

CASE II.—A girl, ten years old, came to the St. John's Hospital Dispensary in March, 1899. She had complained of pain in the præcordia for the last three weeks at intervals. Some shortness of breath was also present. She had at that time a little fever. Examination revealed no cardiac abnormity. But inflammation of the tonsils existed.

Amygdalitis seems to be a frequent cause of pains in the chest.

CASE III.—In another case (a girl, nine years of age) the pain over the heart had continued for some months at intervals. She also complained of pains in her limbs occasionally. Yet, beyond a possible slight hypertrophy, nothing abnormal could be detected. Her general condition was poor, and she improved under tonics.

Pains in the epigastrium are also encountered in endocarditis.

CASE IV.—The patient was a boy, seven years old. When first seen he had pains in the epigastrium and an irregular fever for several weeks. At times he complained of pains in the joints. The boy was anæmic, had a poor appetite, and at night a slight cough. A soft systolic murmur was detected over the præcordia, which was best heard over the apex. A diagnosis of endocarditis was made. He was treated with salicylates and alkalies, and also received mild cardiac tonics.

In two weeks the pains were gone, and the murmur was also no longer audible. Now the question presented itself whether this was really a relative insufficiency or a true valvular inflammation.

Rarely agonizing pain and anxiety are present, resembling angina pectoris.

CASE V.—A boy, twelve years of age, was attacked by rheumatism. For nearly two weeks various joints were affected. Emaciation supervened and rheumatic nodules appeared over the olecranon and malleoli. About this time he began complaining of pain in the præcordial region. This pain was paroxysmal in character and gradually increased in severity. I saw him four weeks after the onset of rheumatism, and at this time the pain came several times a day in agonizing severity. During the attacks the only relief was obtained by tight compression of the chest. Examination revealed a very large heart and a loud systolic murmur. Both mitral regurgitation and aortic stenosis seemed to be present. The liver and spleen were enormously enlarged. The patient died three days later very suddenly during a paroxysm. Unfortunately, no post-mortem examination was permitted.

A pericarditis with effusion can give rise to a diagnosis of tuberculosis, since the distended pericardium causes dullness on percussion posteriorly, and the compression of the lung produces a condition that simulates consolidation. The sign of Pins—the disappearance of signs of consolidation when the patient is put in the knee-chest position—is valuable to make the differential diagnosis. The following case illustrates this:

CASE VI.—The patient was a girl twelve years old, and had suffered from bronchial catarrh since infancy. Examination showed right lung normal, but numerous moist râles were heard over the bronchi. Posteriorly, at the base of the left lung, was a marked area of dullness, and immediately above this bronchial breathing was heard. On auscultating the heart, the sounds were feeble, but a systolic murmur was made out. The child had had rheumatism a few weeks previous. The diagnosis was pericarditis and endocarditis. Some fever was present. Two days later several joints became acutely inflamed. Unfortunately, the patient never returned to the clinic and the ultimate outcome is unknown.

In another case I was positive that mitral disease and marked pulmonary tuberculosis coexisted, but eight months later the physical signs showed practically no consolidation. The following is the report of this case:

Case VII.—R. H., boy, aged eleven years; was first seen at the St. John's Hospital Dispensary in April, 1899. Three years previous to this visit the father of this patient was very sick with what was supposed to be consumption. About this time the boy also commenced to cough. This continued for a few months, when a fever ensued, and he was obliged to stay in bed for several weeks. He complained of pain in the lower limbs about this time. At various times the sputum was stained with blood. He became very much emaciated and had attacks of cyanosis.

This severe sickness ended in hemiplegia of the left side. He was helpless for many weeks, but gradually regained the muscular function.

When first seen, two years after the hemiplegic attack, he still showed distinct weakness of the left side. He complained of pain over the left axillary region when he walked rapidly.

Examination revealed an area of distinct dullness over left lower lobe, with bronchial breathing audible over the upper part of the same lung. The heart was found enlarged and a præsystolic murmur was audible. The diagnosis was pulmonary tuberculosis and stenosis of the mitral orifice.

The patient was seen again September 2d. He had gained in weight and had little cough. Very little dullness was discovered over the left lobe and no bronchial breathing could be heard. The outline of the heart, as shown by relative dullness, was as follows: Upper border, second interspace; right border, half an inch internal to the parasternal line; left border, above an inch to the left of the nipple, below in the mamillary line. The breadth of the cardiac area was five inches and three quarters. The visible pulsation was found in the epigastrium, in the sixth interspace near the mamillary line, and in the fifth interspace near the sternum. A præsystolic thrill, felt most plainly in the sixth interspace in the mamillary line, was diagnostic. Auscultation revealed a very harsh præsystolic murmur, best heard in apical area, but also heard in axillary line and posteriorly in the left interscapular region over the fourth rib. Fig. 1 shows the area of relative dullness and point of maximum intensity of the murmur The murmur becomes a very rough rumble when patient is in the recumbent position.

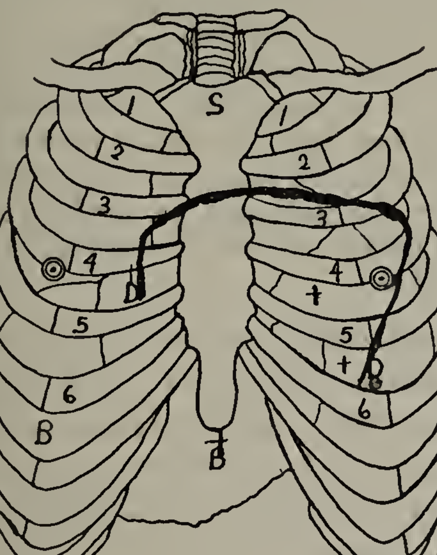

Fig. 1.—+ visible pulsation; θ point where murmur was heard with the maximum intensity.

The question of anæmic murmurs in childhood is not settled by any means. It certainly seems that these murmurs are uncommon, but occasionally they are found.

Case VIII.—R. H., girl, aged eight years, presented adenopathy of cervical glands. Supposed to have had typhoid fever a few years ago. There was no history of any other fever or of rheumatism. The patient was markedly anæmic. A soft systolic murmur was heard over the base of the heart near the sternum. There was no change in the outline of the heart.

Case IX.—B. S., boy, four years old. Has been sick for three weeks. The brother of the patient had scarlet fever and the father feared that the boy also had a mild attack. The posterior cervical glands on the left side were very much enlarged. A peculiar rose-red erythema was noted over the left cheek, neck, and back. The patient appeared very pale. Heart dullness as follows: Upper border, third rib; right border, a quarter of an inch to right of sternum; left border, a quarter of an inch to left of mamillary line. A soft systolic murmur was plainly heard in third interspace near sternum. Examination of blood revealed a splenomyelogenous leucæmia.

In many cases it is exceedingly difficult to determine whether a given murmur is due to anæmia or to an organic change. We adopt the rule to doubt the existence of an accidental murmur unless marked anæmia is present.

The following is a case in point:

Case X.—M. N., aged four years, had fever for two days two weeks previous, which was followed by a papular eruption on the skin. The rash was evidently a papular urticaria. She had a similar eruption a year ago. Quinine was administered, which produced a marked erythema between the papules. This disappeared when the medicine was discontinued. The spleen and liver were enlarged,

Examination of the heart revealed the area of relative dullness as follows: Base, upper border of third rib; right margin, half an inch from edge of sternum; left border, in mamillary line. The pulsation was visible in the third, fourth, and fifth interspaces. Systolic murmur was heard loudest in third interspace near the sternum and conducted upward. It was not heard at the apex (see Fig. 2). These are the physical signs of an aortic stenosis. No anæmia was apparent. The murmur occupied the area of extracardiac murmurs, according to the schema of Potain, but no changes were noticed on deep inspiration. Consequently, the diagnosis of pulmonary stenosis seemed most reasonable. It was impossible to say, however, whether this murmur was congenital or acquired.

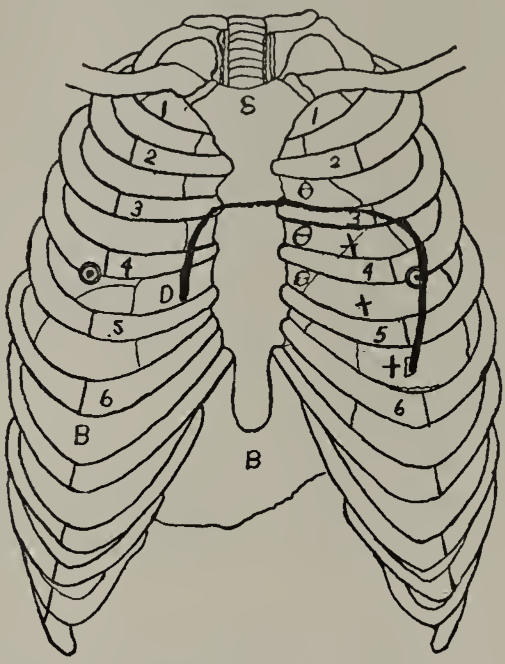

Fig. 2.—+ visible pulsation; θ points where murmur was best heard.

The concomitance of epilepsy and heart murmur was encountered twice in the last year. The following is the history of such a case. The case is interesting by illustrating the fact that in mitral disease the left auricle hypertrophies, and the base of the heart is broader, as was shown in the case reported above (Case VII).

Case XI.—E. L., aged seven years, was brought to the clinic for convulsions recurring at intervals of six months or one year, some without apparent cause. She had had pneumonia, measles, and what was supposed to be malaria. She showed marked choreic symptoms at one time. The child had become emaciated. The præcordia reveals a diffuse pulsation. The epigastrium is prominent and showed pulsation. A systolic murmur was audible over apex and side. The heart was enlarged, as shown by Fig. 3. The nipples occupied an abnormal position, being in the third interspace.

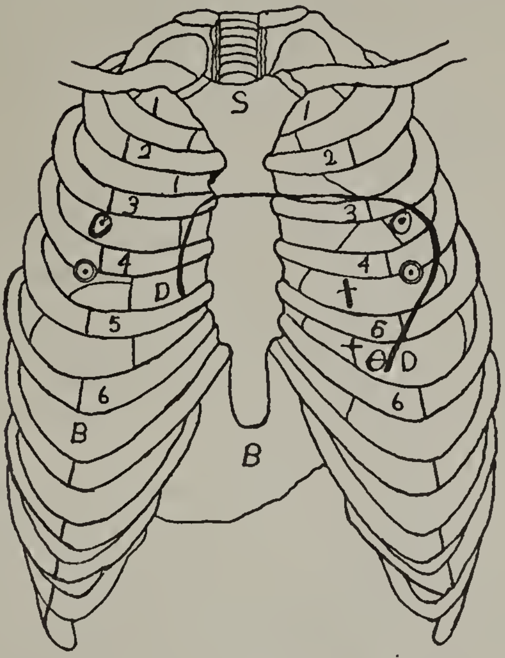

Fig. 3.—+ visible pulsation; θ murmurs. Nipple in third interspace.

Another similar instance was Case XII. M. G., a girl, three years old, who had frequent mild convulsions or unconscious paroxysms. The *petit mal* had existed for several months, when a loud systolic murmur was discovered over the apex of the heart. Very slight cardiac enlargement was present. As an ætiological factor in this instance, an erythema multiforme with high fever, following a few days after the injection of diphtheria antitoxine, is interesting.

Heart lesions following the injection of diphtheria antitoxine have not been reported, but, besides the above-mentioned example, another case came under my observation.

Case XIII.—N., an inmate of the Episcopal Orphans' Home, aged seven years, received two thousand units of antitoxine for a mild attack of diphtheria. Five days later, when the signs of diphtheria had disappeared, the fever rose to 103° F. and severe arthritis of one ankle was noted. The fever, in spite of salicylates, lasted for one week; during this time also an urticaria appeared. Various joints became inflamed. At the end of a week a loud systolic murmur was audible at the apex. Some dyspnœa was present. Four days after the disappearance of rheumatic symptoms marked choreic movements were noticed in the extremities. The chorea that ensued was one of severe type and lasted several months. The injection of antitoxic serum, rheumatism, urticaria, endocarditis, and chorea following in quick succession make this case exceedingly interesting.

Malnutrition in young children frequently depends on chronic valvular disease. In all forms of malnutrition the heart should be repeatedly examined as to its outline and activity. Case X illustrates this point. The following is another instance:

Case XIV.—J. M., female, aged eight years. She had suffered from palpitation of the heart for the last six months. No history of rheumatism, scarlet fever, or pertussis. The child has been wasting considerably. Nothing abnormal found in lungs or abdominal organs. There existed slight præcordial bulging and retraction of chest wall during diastole. Cardiac dullness: Above, third rib; right margin, an inch from sternum; left margin, mamillary line. Systolic murmur heard at the apex. A peculiarity in this case was hyperidrosis of the palms. Under the influence of cardiac tonics the left border of the heart was drawn inward to the extent of half a centimetre.

Various erythematous eruptions are frequently associated with disease of the heart. The purpuric spots of malignant endocarditis are also instances of skin lesions. One case coming under our care at the clinic showed purpuric spots in addition to a papulo-erythematous eruption and rheumatic symptoms.

Case XV.—The patient was a boy, six months old. The disease began with fever and an evanescent papular eruption. The rash was most marked during the fever. A few days later hæmorrhage occurred in the papules and in healthy skin. Joint inflammation followed. A marked systolic murmur was audible over the apex on the sixth day of the disease. In spite of the desperate outlook, the infant improved, but the fever and arthritis reappeared at intervals for two weeks. Salicylates had absolutely no effect in this case.

Dr. Johnson, who watched the patient carefully, reported that the best effect was obtained from antipyrine.

Bradycardia in infants and children is occasionally observed. Irregular pulse is not infrequent even in apparently healthy infants. A slow, irregular pulse accompanies migrainous attacks.

Case XVI.—M. C., girl, aged thirteen years, suffers from pain in the side and stomach at frequent intervals. She now has pain over the heart also. Has severe headache. Vomited once. Pulse, 66, slightly irregular; temperature in mouth, 95° F.; in axilla, 97.6° F.

In this case the low temperature and paroxysmal pain in the head and stomach indicated migraine.

In another instance (Case XVII) a boy of seven years was attacked by purpura simplex, and, accompanying it, a slow pulse, about sixty to the minute, was noted. He recovered entirely in about a week.

In infants bradycardia may lead to a wrong diagnosis.

Case XVIII.—M. M., girl, aged fourteen months. Had high fever four days previous to her visit to the clinic. She had repeated attacks of eclampsia.

On examination, infant presented cerebral symptoms—namely, stupor, conjugate deviation of the eyes, and mother had noticed some strabismus. There was a history of a fall on the sidewalk, which occurred several weeks before. Considerable emaciation had ensued. The child cried out at night. The temperature at that time was normal. The pulse was 60 to the minute and markedly intermittent. The diagnosis of tuberculous meningitis was rational; yet this infant commenced to improve after a brisk purgative. After a month the pulse was 90 to the minute, but still irregular. She still woke up with a cry at times. Some severe gastro-enteric toxæmia might explain this, without resorting to the doubtful presence of tuberculous meningitis. As no paralytic signs existed, cerebral hæmorrhage could not be proved. The infant recovered perfectly in about two months.

In children the harsh presystolic rumble of mitral stenosis may be heard in the back. This was illustrated by Case VII. Janeway has reported that it is heard near the angle of the scapula, but in the case reported and in the following case the murmur was best heard in the left interscapular region about the third or fourth interspace.

Case XIX.—C. D., aged fourteen years, male. Had rheumatism four years ago, and has had pains in the limbs at intervals ever since. Came under my observation more than a year ago. Was then suffering with vomiting and dyspnœa. Examination revealed an enlarged heart and presystolic and systolic murmurs. In the last year has had two or three attacks of cardiac failure due to dilatation. These were caused by fright or excessive exercise. Rest in bed and cardiac stimulants restored the circulation each time.

His present condition is very good. He is a tall, thin, and very active boy. He still complains of pain in the limbs occasionally. No abnormity in lungs. The cardiac dullness is as follows: Base, third interspace; right border, half an inch to right of sternum; left border, above, an inch to left of nipple; below, in mamillary line. Visible pulsation in mamillary line in sixth interspace, also in fifth interspace half an inch to inner side of this line. Over apex a loud presystolic rumble is heard. This is also heard in left interscapular region posteriorly. A soft systolic murmur is heard in fifth interspace near the sternum and not heard at the ensiform. A presystolic thrill is plainly palpable in fifth interspace in mamillary line (see Fig. 4).

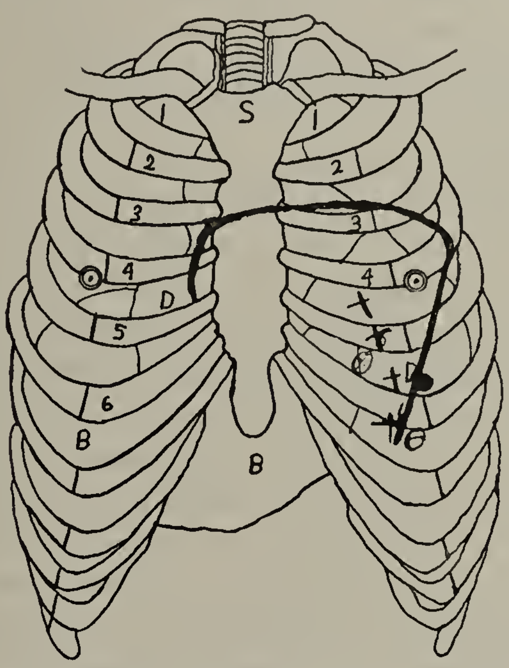

Fig. 4.—+ visible pulsation ; θ presystolic murmur ; ⊗ systolic murmur.

In severe mitral disease the excessive breadth of the base of the heart is readily made out and indicates hypertrophy and dilatation of the left auricle. This is readily shown by Figs. 1, 3, and 4. This is a valuable sign in children, and is usually overlooked in physical examination. I wish to take this occasion to urge the more extended use of auscultatory percussion, for with this method the outlines of all the viscera of children are very readily and accurately defined.

Most difficult in infants and children is the diagnosis of congenital defects of the heart, especially when no symptoms are present. A murmur is frequently discovered, and the question at once arises, Is this due to a congenital deformity or post-natal endocarditis?

Case XX.—An infant, twelve months old, that had been perfectly healthy since birth, was attacked by acute bronchitis. In examining the infant accidentally a loud systolic murmur was discovered over the base of the heart. The bronchitis subsided in a few days, but the murmur persisted. The infant is now four years old and shows no cardiac symptoms; no cyanosis, gastric symptoms, nor dyspnœa.

Disease of the aortic valves is more rare in childhood. One case only has come under my observation in the last two years, and death ensued very shortly after inauguration of treatment.

Case XXI.—J. P., boy, aged thirteen years, has had fever and joint pains for two weeks. The child has refused food and has become very much emaciated. When first seen he had no fever, but presented a haggard and distressed countenance. Pulse very rapid, heart dullness increased. Systolic and diastolic murmur heard loudest over aortic area. He died a few days later in spite of rest, careful diet, and mild stimulants.

Visible pulsation in a child or infant, unless emaciation is extreme, is indicative of hypertrophy. The accentuated second sound is unreliable in infants, but in older children becomes more important.

In conclusion, I wish to urge that cardiac disorders are exceedingly common in infancy and childhood, and if sought for will be readily discovered. I have made it a rule at the St. John's Hospital Dispensary to examine the heart as a routine procedure; to map out its size, noting the pulsation and auscultating sounds in every case. It is astonishing how frequently disorders of this organ are discovered. One great difficulty is to determine the enlargement of the heart. On account of the varying obliquity, the breadth of cardiac relative dullness is very unreliable. I shall in the future adopt the method of calculating the surface area of dullness in square centimetres. The practical value of this method will be given in some future communication.

MALARIAL HÆMATURIA.

By BAT SMITH, M. D.,
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(*Concluded from page 157.*)

Diagnosis.—Although the symptoms of malarial hæmaturia are very strongly marked, yet there are some diseases which bear some resemblance to it, the most prominent of these being yellow fever.

Brenoult reported hæmaturia as existing to an alarming extent among the French troops in Egypt, yet in a large number of his cases the leading symptoms of malarial hæmaturia were wanting. It was later discovered by Bilharz that these hæmorrhages were produced by a parasite, afterward named by Cobbold *Bilharzia.* This *Bilharzia hæmatobia* was also found to exist in Brazil and on the coast of Africa, and was accurately described by Dr. Harley at the Cape of Good Hope. It was also found to be the cause of that remarkable hæmaturia existing at the Mauritius, where three fourths of the children are reported to be affected with hæmaturia at one time or another. In those cases the blood is in small amount, and usually appears with the last portion of the urine voided. The urine itself, according to Harley, is never bloody. Hæmorrhages from the kidneys produced by other causes, such as traumatic lesions from outward violence, renal calculi, carcinoma, congestion of the kidneys from exposure, congestions from different poisons or from various acute diseases, such as malignant measles, Bright's disease in the acute stage, small-pox, scarlatina, and others, are marked by symptoms so peculiarly their own that it is hardly necessary to point out the difference between them and the symptoms of malarial hæmaturia. Yellow fever, however, bears a much closer resemblance, and one disease might be mistaken for the other. The color in yellow fever is not so intense, and it never assumes the deep bronze hue of malarial hæmaturia. The latter disease is marked, as a rule, by well-defined remissions, the former is not. In yellow fever there is a great tendency to hæmorrhage from the gums; in malarial hæmaturia this is not the case. The tongue in yellow fever is furred in the centre, pointed, and of a bright red on the edges and at the tip. In malarial hæmaturia we find, as a rule, a heavily coated tongue, and gums that are of a peculiar leaden hue, which has given to the disease in some country districts the name of lead jaundice. It is true that we have discoloration of the conjunctiva in malarial hæmaturia, but it is not accompanied by the markedly engorged condition of the blood-vessels of the eyeball that we find in yellow fever. There exists in yellow fever a peculiar condition, which is absent in malarial hæmaturia, and that is capillary stagnation. Owing to this, the finger nail drawn across the chest of a yellow-fever patient will leave a white mark, which will not readily disappear. This stagnation of blood in the capillaries gives the patient in yellow fever a swollen, bloated appearance, and also gives rise to a remarkable expression of the face, which is difficult to describe. There is often an anxious, terrified look upon the patient's face, as if he were threatened by some undefinable and unknown danger. Vomiting in malarial hæmaturia is frequently an early symptom; in yellow fever, except in rare cases, black vomit usually begins but a short time before the fatal termination of the disease. The vomited substance in malarial hæmaturia contains large quantities of blackish-green, grumous, and disintegrated bile, blood being rarely present. The black vomit of yellow fever consists chiefly of blood, together with epithelial cells and disintegrated portions of the mucous membrane of the stomach; bile is absent. The reaction of black vomit is alkaline, owing to the presence of ammonia, from the decomposition of urea. The reaction of the vomit of malarial hæmaturia is acid. In malarial hæmaturia the albumin in the urine is of a deep reddish-brown color. In yellow fever, it is generally more abundant, and its color is a golden yellow.

Treatment.—It is with diffidence that I submit this portion of my treatise to your consideration, knowing, as I do, that my opinion relative to the proper mode of treatment of malarial hæmaturia is at variance with that of many eminent members of the medical profession; yet, if I may be permitted to trespass a little upon your patience, I shall try to give you the reasons for the faith that is within me.

There is no doubt that the termination of any case of malarial hæmaturia will depend greatly upon the extent of the lesions in the kidneys; and it is a matter of great importance to eliminate the *materies morbi*, and so shape our therapeutics as to reestablish in the shortest time possible the functions of the different organs in equally balanced activity. Now we know that the tubuli uriniferi are filled to a great extent with coagulated blood, and a large number are almost totally denuded of their pavement epithelium (endothelium) by reason of the congested and inflamed condition of the kidneys. We know, also, that the function of this pavement epithelium is to separate from the blood certain substances which are the result of chemical action in the body. Chemical analysis shows that eleven twelfths of the urea which should pass out of the system through the kidneys is retained in the circulation, and should relief not be speedily obtained the patient will most surely die of uræmic poisoning. It is also well known that the simpler the tissue of a structure, the more rapidly it is regenerated, and of all the anatomical elements the epithelial cell is the simplest in structure. The indications, therefore, are to give the kidneys absolute rest, and to throw the entire burden of the elimination upon the skin and bowels. By so doing and relieving the kidneys of their congested condition, the pavement epithelium will be regenerated in a remarkably short time, and the renal functions reestablished.

The remedy which, in my experience, has given the best results is calomel in decided doses, and if we can not get the mercury to act as promptly as we would wish, it should be followed by some active hydragogue. In many cases it would be well to administer at the outset a large enema of warm water, as constipation is the rule. To encourage the action of the skin, hot mustard footbaths should be given and the body sponged with hot water and alcohol in some form. I have also used with great satisfaction in these cases some of the derivatives of coal tar, but more especially phenacetine, in doses of from five to ten grains, combined with one fourth to one half grain of ipecacuanha and one to two grains of the citrate of caffeine. The writer is aware of the diuretic action of both caffeine and calomel, but the former is in these cases given in small doses, and its action on the kidneys is neutralized by the diaphoretic action of the phenacetine. The calomel is administered in large doses, and its action upon the alimentary canal is so energetic that the kidneys are not affected by the drug. The coal-tar derivatives should be given with caution and the heart's action carefully watched.

Diuretics are of all the remedies those which are most certainly contraindicated. The kidneys are already overcharged with blood, and we surely should not add fuel to the flame. Yet some very intelligent physicians claim to have found this class of remedies very serviceable. It seems to me, however, that to lash a crippled organ into the performance of function is unwise.

The use of hæmostatics, which are held in high estimation by a number of practitioners, has in my experience proved somewhat disappointing, and, although I would be far from condemning the use of ergot, gallic acid, or the elixir of vitriol in some cases where the hæmorrhage is unusually obstinate, yet I would much rather rely upon some preparation of iron, and by preference the dialyzed iron, which is mild and can be given in large doses, as the stomach bears it well.

The hypophosphite of sodium has been extolled by some practitioners as a highly useful remedy in malarial hæmaturia. I have given the drug a fair trial, but have found it of little use, and the verdict of other physicians with whom I have conversed on the subject is decidedly adverse.

I have always found it necessary to keep the skin and bowels acting freely until the renal functions have been reestablished, at the same time sustaining the patient's strength as much as possible. If the calomel is given in the powdered form it acts more readily, and is too heavy to be vomited. The vomiting generally ceases when the mercury begins to act.

The disease, being of malarial origin, many writers maintain that the first indication is to secure complete cinchonism as early as possible, claiming that as the hæmorrhage originates during a chill the course of treatment which prevents the recurrence of the paroxysm will mitigate the hæmorrhage, if it does not stop it altogether. They therefore advocate the administration of the sulphate of quinine in large doses. In differing radically from this view of the treatment of malarial hæmaturia I am well aware that I subject myself to much adverse criticism. Yet as far back as in the days of Orfila and Pereira sulphate of quinine was recognized as having powerful diuretic properties. This is not denied by our more recent authors. Knowing the lesions existing in the kidneys, I early refrained from giving the sulphate of quinine or any of the salts of cinchona, preferring to rely on mercury and on the diaphoretic action of the skin to eliminate the poison, rather than to risk aggravating the already dangerous condition of the renal organs. In this view of the action of sulphate of quinine I am sustained by most if not by all the physicians of my section of the country—viz., the Colorado and Brazos Bottoms (Texas)—where the disease is frequently met with. It would be difficult to induce one of them to administer quinine in malarial hæmaturia, even after the hæmorrhage has been checked, for fear of reproducing it.

Dr. John H. Bowers, of Columbus, Texas, the oldest practitioner in the State, and a man of superb attainments and vast experience, in speaking of this disease some years ago, stated to me that in his long experience, extending over considerably more than half a century, he had never seen a case of malarial hæmaturia in which sulphate of quinine had been administered but what the patient died, and that he did not recollect one in which it was withheld but that the patient recovered.

The testimony of the late Dr. Gibson and Dr. Moore, old and well-known physicians of Richmond, Texas, was to the same effect, as also was that of the late Dr. Gerard Alexander, of Wharton, Texas, who told me that in his long experience as a surgeon in the United States navy on the coast of Africa and in Central and South America, and also as a practitioner in this section (south Texas), he had always looked upon the administration of quinine in malarial hæmaturia as equal to a death warrant.

Dr. August Soltman, of Wharton, tells me that he has frequently known the injudicious use of quinine, both in Central America and in this country, to produce hæmaturia. In my own experience I must say that the only deaths I have ever witnessed in malarial hæmaturia were those in which quinine had been given. I know several persons residing in my section of the country who have suffered from attacks of malarial hæmaturia, and in whom ten to twenty grains of quinine will produce hæmaturia.

Considering that it is important not to permit a return of the paroxysm, and taking the view here presented of the action of quinine, we must look elsewhere for relief, calomel being chiefly relied upon. After the action of the calomel the nausea and vomiting are usually relieved, and the system is in a better condition for absorption and assimilation. Salicin may be given for its antiperiodic properties, and, although the drug can not always be relied upon, it frequently proves a good substitute for the more dangerous salts of cinchona. The cold infusion of wild-cherry bark and tincture of cinchona is a great favorite with the physicians in south Texas, especially during the stage of convalescence. To this may be added, after the danger of its combination with calomel shall have passed, a drop of nitro-hydrochloric acid.

The blood being much depraved in malarial hæmaturia, this condition should be corrected as speedily as possible by giving the patient good, nutritious food. Among the wines, the best seems to be a good claret. The salts of the blood should be replaced at this stage, and for that purpose the phosphates of calcium, sodium, and potassium are the most available. The muriated tincture of iron in combination with chlorate of potassium is also a valuable remedy.

Malarial hæmaturia is in many localities looked upon as one of the most fatal of all diseases. I can not consider it so, yet so it will remain so long as we trust to cinchonism as a sheet anchor.

The following cases were treated by the writer in the wards under his charge in the United States Army General Hospital at Santiago de Cuba:

CASE I.—W. F., aged sixty-five years, a native of Ireland, by trade a pipe layer; had been in Cuba for two months. He had been sick in the town of Santiago for two weeks, when he was transferred to the detention hospital, where he remained three weeks; at the end of that time he was sent to this hospital, and admitted to Ward 6 January 3, 1899. The patient stated that he had had no other treatment, either in town or at the detention hospital, except very large doses of quinine daily.

The symptoms presented by this case were characteristic of malarial hæmaturia. The skin was of a deep yellow color. The conjunctiva was discolored by bile, but its blood-vessels were not engorged as in yellow fever, nor could I detect the peculiar capillary stagnation in the skin which we find in that fever. The tongue was broad and flabby, indented on the edges and heavily coated, of a dark yellowish-green color. Temperature at 2 P. M. 105° F., pulse 106. At 4 P. M., temperature 104.7° F., pulse 104. At 10 P. M., temperature 103.2° F., pulse 90. After this the pulse began to fall, being next day, at 8 A. M., 80, with a temperature of 100.4° F. At 12 M. of the same day thermometer registered 103.4° F., pulse 90. At 5 P. M., temperature 102.6° F., pulse 85. January 5th, temperature at 8 8 A. M. 99.4° F., pulse 80; at 5 P. M., temperature 103.2°, pulse 90. January 6th, morning temperature, 102° F., pulse 80; evening, 103° F. and 85. January 7th, morning temperature, 99.2° F., pulse 78; evening, 102° F. and 82. January 8th, morning temperature, 98° F., pulse 60; evening, 89° F. and 60. January 9th, morning and evening, 98° F., and pulse 58. January 10th, morning temperature, 98.5° F. and pulse 48. January 11th, morning temperature, 99.5° F. and pulse 75. From this date the temperature and pulse were normal, and the patient's recovery was rapid.

The urine in this case on the day of admission was of a black color, with a reddish cast, containing blood, bile, and albumin in large quantities, also many casts of the tubuli uriniferi, and epithelial cells. Twenty-four hours afterward the urine showed much less blood, but still a large quantity of bile, some casts, and a little albumin. On the evening of the second day the blood had disappeared, but bile was still present in considerable quantity.

The treatment was that outlined in my special report—viz., calomel, four doses of five grains each, combined with a fourth of a grain of ipecacuanha and two grains of sodium bicarbonate, given in powder and repeated every two hours; gave also five grains of phenacetine with two grains of the citrate of caffeine, repeated at intervals of two hours, until three doses had been taken. The purgative acted promptly, and the diaphoretic action of the phenacetine was very satisfactory. Quinine was withheld altogether. There was no vomiting, fortunately for the patient, as he was very weak. On the third day thirty grains of salicin, in five doses of six grains each, were given, also dialyzed iron, thirty drops in water every four hours. On the fourth day the salicin was discontinued and the patient was placed upon a treatment of the tincture of cinchona and fluid extract of wild cherry before meals and dialyzed iron after meals. On the tenth day after admission three drops of Fowler's solution were added to each dose of the cinchona and wild cherry, and this, with the dialyzed iron, which was given separately, was continued for several weeks, the patient improving rapidly. In this case, as in those which follow, the plasmodium was clearly to be seen on the first day, but after the patient had come fully under the influence of phenacetine it disappeared. This I have noticed with the other coal-tar derivatives; they seem to destroy the plasmodium more rapidly than quinine.

CASE II.—B. D., aged twenty-eight years, a native of Illinois, private in hospital corps; came to Santiago with the Fifth United States Infantry in August, 1898. Patient states that he has suffered from malarial fever ever since his coming to the island, being rarely free from it. He was given large doses of quinine, but with negative results. He was in the regimental hospital for two days before being sent to this hospital, where he was admitted on March 22d and sent to Ward 6; the diagnosis from regimental hospital being malarial fever (intermittent). This patient presented all the symptoms of malarial hæmaturia. His mind was not very clear; he seemed rather stupid. The skin was of a deep greenish-yellow or bronze, but there was no capillary stagnation; eyes much discolored by bile, but the vessels were not congested; tongue broad and flabby and indented on the edges, heavily coated, greenish yellow; gums of a leaden hue; tenderness over the stomach, but no vomiting. Plasmodium in the blood for the first two days, then it disappeared; red blood-corpuscles very pale and diminished in number; large deposits of pigment in white corpuscles. Urine in rather large quantity, showing a large amount of bile and blood; color almost arterial red. In this case the blood was in such large quantity that it formed a clot in the bottom of the vessel. Microscopical examination revealed epithelial cells and numerous casts of the tubuli uriniferi, also numerous red blood-corpuscles. In this case the temperature was never very high, and the pulse was rather slow, but full and strong.

	TEMPERATURE.			PULSE.		
	8 A. M.	12 M.	8 P. M.	8 A. M.	12 M.	8 P. M.
March 22.......	98.2°	97°	100°	70	65	80
23.......	99.4	100	99.8	72	80	78
24.......	100	100	100	78	78	78
25.......	99.4	100.4	100.4	72	78	78
26.......	98	98.4	100.4	72	75	80
27.......	98	98.4	100.4	72	76	80
28.......	98	99	98	70	72	75
29.......	99	98.4	100.4	71	72	78
30.......	99	98	99.6	65	65	65
31.......	98.4	99	100.4	56	56	58
April 1.......	98	98.5	99.4	56	56	56
2.......	99	99.5	100	52	56	56
3.......	98.5	98.5	100.2	52	56	56
4.......	98	98	100	48	48	50
5.......	98.4	98.4	100.4	42	45	48
6.......	98	98	100.8	42	45	46
7.......	98	98	99.2	70	75	76
8.......	98.5	98.5	98.5	75	75	75
9.......	98.5	98.5	98.5	75	75	75

The treatment in this case was practically the same as in No. 1. On the second day the blood had disappeared from the urine, but bile was still present in considerable quantity. The urine became almost normal on the fifth day. Plasmodium disappeared on the third day. No quinine whatever was given to this patient. On the fifth day the following treatment was begun—viz., simple tincture of cinchona, fluid extract of wild cherry, and Fowler's solution combined before meals, and the tincture of the chloride of iron after meals. Recovery rapid and satisfactory.

CASE III.—J. E., aged twenty-four years, a native of North Carolina, and private in Company F, Fifth United States Infantry,in service twenty-three months; came to Cuba last August. Sick more than half the time since coming to the island. Sick for ten days previous to his admission to this hospital. Had been given large doses of quinine from day to day without apparent benefit. Admitted to Ward 6 on April 12, 1899. Color deep yellow, bordering on bronze; tenderness over the stomach, but no vomiting; eyes yellow, but blood-vessels of conjunctiva did not show a congested condition; tongue broad and indented; coat of tongue greenish yellow; gums of a leaden hue. Temperature, 101.2° F., pulse 90. Blood showed plasmodium distinctly, which disappeared on the third day. Urine, in rather large quantity, contained a great deal of blood, bile, and albumin, casts of tubuli uriniferi, epithelial cells, and pus.

The treatment was identical with that described in No. 1. No blood found in the urine on the second day, but still a large quantity of bile and a considerable amount of pus. The urine cleared up entirely on the fifth day, but some pus could be discovered until the eighth day.

The temperature in this case was never very high, being 101.2° F. on the first day, reaching 102° F. on the third, and 102.8° F. on the fourth day. It then varied from 100° to 100.8° F. until the morning of the 19th, the seventh after his admission, when it fell to 98.5° F., after which there was no further rise. The pulse never went over 90, and on the evening of the fourth day began to fall steadily until the morning of the 22d, when it went as low as 42, being full and strong; on the evening of that day it rose to 75, and afterward remained normal.

CASE IV.—A. K., aged twenty-eight years, native of Indiana, and sergeant Company A, Fifth United States Infantry. Came to Cuba in August, 1898. Sick most of the time since coming to the island. Sick for about ten days before he came to the hospital. Admitted to Ward 4 on April 18, 1899. Symptoms similar to those described in Case III, with the exception that his color was a pronounced bronze. Urine showed blood, bile, casts of the tubuli uriniferi, and epithelial cells. The blood also showed plasmodia, which disappeared on the third day. The temperature in this case never went over 102.8° F., which it was on the day of admission. It steadily decreased until it became normal on the 23d, five days after his admission. The pulse in this case was never over 88, and fell rapidly from the third day, going as low as 42 on the 23d and 38 on the 24th, or sixth day. On the 25th it rose to 76, and remained normal afterward. Treatment the same as in the other cases, no quinine whatever being used. This case was of much shorter duration than the others, the patient being convalescent on the seventh day after admission. His recovery was remarkably rapid.

CASE V.—R. E. L., aged nineteen years, a native of Kentucky, and a private in Company H, Fifth United States Infantry. Admitted to this hospital on March 23, 1899, and assigned to Ward 6. This patient, when admitted, was almost in a stage of collapse; temperature subnormal, respiration hurried, pulse very small, rapid, and very weak. After using stimulating hypodermic injections, the temperature rose from 96° to 97° and then to 98° F., and eventually, after several hours, to 99° F., but fell again next morning to 97° F., or a little below that point, the heart's action being very weak and rapid. The temperature rose again to 98° F., and then to 101° F., but did not long remain up to that point, falling rapidly to 97° F. Vomiting was almost incessant and very distressing. The substance vomited was of a dark greenish-black, containing no blood, but a large quantity of viscid, disintegrated bile of an acid reaction. The bowels were constipated. Small doses of calomel and soda were administered, also an enema of warm water, followed a few hours afterward by a second enema of warm soapsuds, castor oil, and glycerin; a rather copious action was thereby produced, but the vomiting was not relieved. The patient could not retain nourishment of any kind, nor cold drinks, such as cracked ice and champagne or iced Apollinaris water. All remedies employed to allay the sick stomach and arrest the vomiting proved useless. When admitted the urine was of a dark reddish-brown color and contained blood, bile, casts of the tubuli uriniferi, and epithelial cells. On the 25th the urine was of a much lighter color and contained no blood; it was, however, in very small quantity. On the morning of the 26th the flow of urine ceased altogether and the patient was in a semicomatose condition. All efforts to reestablish the functions of the kidneys were unavailing, the patient showing all the symptoms of uræmic poisoning. He became delirious during the day, and during the night of the 26th he had several hard convulsions, and died at 6.30 A. M., March 27th. The symptoms in this case were characteristic of malarial hæmaturia in its worst form. An autopsy, held a few hours after death, fully confirmed the diagnosis.

Case VI.—P. H., a native of Ireland, aged twenty-two years, and a private in Company B, Fifth United States Infantry. Sick in camp at San Luis, province of Santiago de Cuba, for nine days before entering this hospital. Admitted to Ward 6 on April 18, 1899. Temperature a few hours after admission, 103° F., pulse 124; next morning, at 8 A. M., 101° F. and 112; evening, 102.4° F. and 122. On the 20th, at 8 A. M., 103.4° F. and 126, and at 8 P. M. 103.6° F. and 130. On April 21st the morning temperature was 104.4° F., falling to 104° by midday, and to 103° F. by 8 P. M., the pulse being at 8 A. M. 135, at 12 M. 130, and at 8 P. M. 125. On the 22d the temperature had dropped to 100.3° F., with a pulse of 104; there was, however, a rise toward evening, the thermometer showing, at 5 P. M., 103° F., pulse 122, and at 8 P. M. 103.8° F., pulse 126. Next morning, at 8 A. M., temperature 104.2° F., with a pulse of 134; evening, 104° F., pulse 130. On the 24th the morning temperature was 98° F., with a rather small, feeble pulse of 86; evening, 103° F., pulse 128, small and weak. A marked change for the better occurred during the early part of the morning of April 25th, the thermometer registering 99° F. at 8 A. M., pulse 100; at 12 M., 98.5° F., pulse 90. No further rise of temperature occurred in this case, and the pulse fell steadily until it reached the normal both as to rate and volume.

When this patient was first admitted, and it was discovered that he passed blood with his urine, I was inclined to think that he also was suffering from malarial hæmaturia, but, upon examination, it was plainly to be seen that the leading symptoms of the disease were wanting. The skin was very pale, no yellow cast whatever. The conjunctiva was pale and not at all discolored by bile. The pulse was hard and rapid, and the patient at times rather drowsy. The examination of the urine showed but a trace of bile; blood, on the other hand, was present in considerable quantity, also casts of the tubuli uriniferi, but these were not discolored by bile, as they are in malarial hæmaturia. No plasmodium was found in the blood, yet I have no doubt that the patient was affected by malarial poison to a limited degree, but I do not think that it had any bearing upon the condition of this patient's kidneys. The history of this case, together with the symptoms presented, justifies the diagnosis of acute nephritis. The man had been with a mounted detachment of his regiment, and had been exposed to a heavy rain all day, sleeping on the wet ground at night, without a change of clothing, being, as he himself expresses it, "soaked through." Next morning he complained of severe pain in the lumbar region, which was accompanied by stiffness and high fever. I have reported this case to demonstrate the difference in the symptoms presented in malarial hæmaturia and acute nephritis, and especially to call attention to the remarkable difference in the character of the pulse in the two diseases.

RECOVERED CONSUMPTIVES WHO REMAIN WELL.

By PAUL PAQUIN, M. D.,
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The title of this paper is warranted for two reasons —namely, some of the profession have, in a measure, the unfortunate habit of scoffing at those who claim to have succeeded in arresting tuberculosis (saying the improvement can only be ephemeral), and the laity is so much influenced by this pessimism that usually its members fall into the rut of fatalism when some one among them is pronounced a consumptive.

The idea that consumption is incurable has so thoroughly saturated the mind of a large portion of the fraternity that many of them conscientiously retain patients, who they feel or know are consumptives, in an atmosphere wholly inimical and a climate seriously dangerous, under drugs for cough and the like, and yield to entreaties for a change often only as a last resort, not uncommonly when the means of the afflicted are too nearly exhausted to warrant it. And, to make matters more serious still, in a situation so urgent and trying as is consumption in a family, some of our best doctors seem to look upon the reports of those who have had success in treating the white plague as exaggerated or selfish, or tinged with desires for ulterior purposes, if not, indeed, as fallacious. And yet, is it not the duty of the physician who has had success to proclaim it among his brethren? If not to them, to whom shall he appeal in explaining the value or failure of the remedial measures which he has employed? Verily, the practitioner who has done original work in the line of therapy in tuberculosis is often forced very unjustly into great distress for doing a duty which even his critics can not but concede is demanded of every upright physician.

It may appear unseemly to thus preface a medical report, but I have no apology to offer. The experience which has given rise to these thoughts is not uncommon among those who have devoted their time and means to the study and treatment of consumptives, and there is no valid reason against the printing of a word about it. It may serve a good purpose in suggesting more diligent inquiry to the mind of the skeptical doctors who seek means to arrest tuberculosis and climates where consumptives may live happily if not recover as completely from their disease, so far as appearances and well-being go, as from pneumonia or any other infectious disease.

In the winter of 1895 I reported to the St. Louis Medical Society the results of my experiments with some twenty odd cases of pulmonary phthisis treated at the City Hospital in 1894 and January, 1895, by the use of blood serum of immunized horses. It was the record of the initiation of serotherapy in consumption, so far as serum from *immunized* animals against the disease is concerned, and has been so recognized in America and abroad (see Foster's *Therapeutics*, vol. ii, p. 183).

Some results were splendid, others encouraging, others mediocre, others nil. Still, two facts of serious import were established—viz., serotherapy from the very start not only did good to tuberculous sufferers, but succeeded in arresting consumption, if we may judge from the return of a sick person to fairly good health, ordinary work, and happiness. Second, antitubercle serotherapy was inaugurated in America as a generally useful remedial and just measure in the therapeutics of tuberculosis.

Serotherapy in tuberculosis, then, is established, and so far as the use of immunized horse serum is concerned it dates back to my original work in 1894, prior to which no work of the kind had been done in America. Here is a report of a number of patients treated since 1894 who remain in this world and seem happy. They recovered under conditions of climate more or less inimical to respiratory organs—for instance, St. Louis, New Orleans, and some parts of Pennsylvania, Texas, Indiana, etc. In all cases of tuberculosis treated by the use of serum I used, as above indicated, an immunized product of the horse prepared under my direction or instruction.

Case A.—A man, aged forty-eight. Mother died of consumption. Right lung chiefly involved. Ill two years; had ceased to work on account of weakness, cough, and bad digestion. Had lost flesh constantly. Bacilli of tuberculosis present in sputum. Treated by serum exclusively. Injections begun December, 1894. Weight was then a hundred and thirty-seven pounds; two months later, a hundred and forty-four pounds. The lung capacity at beginning of treatment was two hundred and fifty cubic inches; it increased under treatment to two hundred and sixty, and later to two hundred and seventy cubic inches. Cough ended, expectoration ceased, bacilli disappeared, and he returned to work, where I saw him, four years later. He had no return of the disease. This occurred in the climate of St. Louis.

Case B.—A man, St. Louisan. Tuberculosis in right lung (apex) and in the throat (arytænoids and epiglottic folds ulcerated). Great difficulty in swallowing and uttering; finally lost his voice completely. Pain in throat became severe; numerous tubercle bacilli were present in sputum. Five or six physicians pronounced his case very grave if not altogether hopeless in *any climate*. After trials of climate in Texas and various remedies, he was put on serum the first week of March, 1895. His temperature then reached 100° F. and more and cough was harassing every day; great emaciation. The cough disappeared, the bacilli vanished, strength returned, the voice improved gradually, and finally, in two months he was able to leave his room and bed. A few months later he had returned to work with a fair voice and apparently free from active tuberculosis. I watched him for four years and he seemed to have gained a new lease of life. He became actually fleshy.

Case C.—St. Louisan, aged sixty. Acute tuberculosis following *la grippe*. Bacilli tuberculosis present. Tubercular pneumonia had almost completely consolidated the lower two thirds of left lung. Temperature was at the worst 104.5° F. Severe pains; spasms of coughing occurred, followed with the expectoration of tough fibrinous sputum. Night sweats appeared and various other serious symptoms, together with increased dullness, physical depression, and signs of final breaking down. An unfavorable prognosis being pronounced by the consultants, I was induced to try serum under joint control of Dr. L. and Dr. F. in March, 1895, and after a few weeks the patient recovered. He was a large man and had gone down to less than a hundred and fifty pounds. Some months afterward and for three or four years, during which I observed him, he weighed over two hundred pounds, seemed the picture of health, and was attending daily to his usual duties in a downtown office in a smoky and damp district.

Case D.—Miss V., of East St. Louis, Illinois. Acute tubercular infiltration of both lungs. Bacilli of tuberculosis present; extreme dyspnœa, depression, and collapse. Temperature often went as high as 104° F. Each of her three consultants pronounced her case as almost if not wholly hopeless. This was in June, 1895. As a last resort she was put under the serum treatment and, so far as could be judged, she recovered completely. She used the serum two months, and soon after rose from eighty pounds to a hundred and thirty-two pounds. I heard from this patient through her family physician and friends, and she remained at least two years in good health and is supposed to be still well. She recovered in a damp locality on the banks of the Mississippi River.

Case E.—Mrs. X., Texas. A case identical in almost every particular with the above. Her treatment was similar and recovery the same. The bacilli of tuberculosis and all other indications of tuberculosis disappeared. I heard of her remaining in good health two years later and with no signs of returning symptoms. She is said to have since borne a child without accident.

Case F.—February, 1895. Married woman, aged thirty, suffering mildly from diabetes, very seriously from pulmonary tuberculosis; had had hæmorrhages, and expectorated mucopurulent matter from the apex of one lung. Cough very distressing; bacilli of tuberculosis and streptococci numerous. At the beginning of treatment (February, 1895) infiltration was marked in the apex of right lung. Weight, ninety pounds; no appetite; digestion miserable; night sweats profuse; *Bacillus tuberculosis* present. In four months her cough ceased. The bacilli disappeared; her weight increased to a hundred and thirty-two pounds. She remained in good health, so far as her lungs were concerned, for three years, and then diabetes increased and she died from its effects. No bacilli of tuberculosis at the time.

CASE G.—Mr. D., St. Louisan, aged thirty-six, shipping clerk. Tuberculosis in left lung, fever, night sweats, profuse expectoration, bacilli of tuberculosis, cough. Patient too weak to work. Pneumonia four years previous; usual treatments gave no relief. Serum therapy begun May, 1895. After four months he had regained his usual health. I saw him three years later—he was still well; had been at work since his recovery as before his illness, and his last report indicates absolute recovery, so far as he can judge.

CASE H.—Mr. F., aged forty-five; St. Louisan. Had had dry cough two years; hæmorrhages which had kept him in bed three months previous to my examination of him. Expectoration thick and yellow; bacilli of tuberculosis numerous; night sweats; weight decreased. Put him on immunized horse-blood serum first week of May, 1895, and continued until October. His symptoms all disappeared. The bacilli vanished and his weight increased to a hundred and forty pounds, which is above his normal avoirdupois. He returned to work in a printing and bookbinding establishment, where he has been thus employed to this day (November, 1899), more than four years after his recovery.

CASE I.—Miss X., Tennessee. Tuberculosis involving one lung; coughing; yellowish, thick expectoration; numerous bacilli; loss of flesh; night sweats; fever; indigestion; hæmoptysis. Treated with serum three months in St. Louis, beginning May, 1895, she gaining ten pounds in that time, the chief symptoms disappearing. Migrated to a better climate. The bacilli disappeared, and the last report, received two years after recovery, indicated that she had regained good health and returned to his duties.

CASE J.—Miss A., Pennsylvania, aged nineteen. Suffering from congenital heart disease, which interfered very much with treatment by hypodermic injections, not to mention its baneful influence upon her tubercular infection. September, 1895, had tubercular laryngeal infiltration; pulmonary infiltration localized; bacilli of tuberculosis, cough, sweats, etc. Weight, a hundred and twenty-three pounds at beginning of serum treatment in September. Was treated about six months before all the chief symptoms had disappeared. Weight then had increased to a hundred and thirty pounds. She has been free from tubercular symptoms ever since, and is at this date pursuing her vocation in Pennsylvania, and reports herself absolutely well in throat and lungs.

CASE K.—Mr. Mc., aged eighteen. Joint and bone tuberculosis seven years. Ten operations performed at various times, including a grave one on the hip. Some eight openings discharging mixed pus. Lungs fairly free, but had general articular and bone tuberculosis; evidences of staphylococci, streptococci, and tubercle bacilli present. Temperature increased daily; great weakness; aborted development generally, and serious lameness. Began treatment with serum, as last resort, March, 1895, when four abscesses were discharging. Two more developed shortly afterward. In six months of treatment five of these abscesses healed, the fever disappeared, he gained ten pounds, became hearty, and went to work. He has been engaged in hard office work ever since, and now, over four years after treatment, he reports himself still hard at work—just as well as healed, stiffened, cicatricial joints can leave a man. He is still free from fever and general tuberculous activity. One minute bone perforation secretes now a slight exudation. No bacilli have been found in it. It is not too much to say that this is indeed a remarkable case.

CASE L.—Mr. F. M., clerk, resident of East St. Louis, Illinois. June, 1895, limited area of consolidation in one lung; thin, pale, weak, incapacitated for work; expectoration slight; bacilli of tuberculosis present; night sweats and fever. Treated four months with immunized horse serum. Symptoms all disappeared; patient returned to work. Two years later, heard of him as in all appearance perfectly healthy.

CASE M.—Mr. W., St. Louis. Had *grippe* July, 1895. Found him with infiltration, fever, sweats, expectoration, with bacilli of tuberculosis, indigestion, weakness, which incapacitated him. Was treated irregularly with serum during five months. Four years later I hear from him in good health, hard at work. The symptoms of tuberculosis have subsided. His normal weight, which was a hundred and forty pounds, had been reduced by disease, but he now weighs a hundred and fifty-four pounds and a half.

CASE N.—Mrs. H., St. Louis. Family tuberculous. Husband died of the disease. Infiltration limited in one lung, expectoration slight, night sweats, few tubercle bacilli in expectoration; suffered also from aneurysm. Treatment began July, 1895, and was continued more or less constantly for a year. She improved until tubercular signs were gone. I saw her and examined her three years afterward. She seemed still free from the infection.

CASE O.—Mr. M., St. Louisan. A chronic fibroid case of tuberculosis of long standing. Examination, July 3, 1895. Physical and microscopic (bacillar) evidences of tuberculosis found. Treatment began at once, continued some three months. Saw him more than two years later. Not very robust (being of slim physique naturally), but back and continually at his work.

CASE P.—Miss Y., aged eighteen, New York. Specific infection of the throat, besides tuberculosis of one lung in a limited area. Cough, expectoration, sweats, temperature. Treatment began middle of September, 1895, and continued three months. All symptoms of tuberculosis disappeared and she returned to her vocation (elocutionist, entertainer, and actress). Is reported well to-day, four years after her treatment.

CASE Q.—Miss H., St. Louisan, emaciated and feeble; expectorated; bacilli present; night sweats; fever; unable to perform any duty. Sent to country to recuperate and brought home as hopeless. Treatment begun latter part of September, 1895, and was continued more or less regularly for four months, when she returned to work in an engraving house. Three years later I saw her, still at work, and suffering only from susceptibility to transitions of temperature, which sometimes made her cough and raise some mucus. No bacilli were present in such sputum.

CASE R.—Mrs. C., Missourian, June 3 to August, 1896. One lung partly infiltrated; emaciation; night sweats; dyspepsia; increased temperature. Case of one year's standing. Used serum treatment two months, then ordinary treatments at home. Her symptoms disappeared, and to-day, over three years later, she seems well and teaches school.

CASE S.—Mr. D., police officer, examined June 29, 1896. Had tuberculous spot several inches in diameter in one lung; lost flesh; had night sweats; cough; expectoration and bacilli of tuberculosis. Was treated three months irregularly; returned to work free from symptoms of any disease, and to-day, over three years later, reports himself perfectly well and at his post—often on night duty.

Case T.—August, 1896, Mr. C. A case almost identical with Case Q. Treated three months with similar results. Saw him at work two years later in seeming good health.

Case U.—Mr. H., St. Louisan, September, 1896. Infiltration of throat and pulmonary phthisis with bacilli in small number. Voice completely absent. Improved three months. Bacilli disappeared; expectoration diminished; voice remained affected moderately. Two years later he was still in his improved condition. This patient had a cavity evidently cicatrizing. Have not heard from him for the last six months.

Case V.—Mr. G., Texas, October, 1896. Sweats, cough, fever, expectoration, bacilli of tuberculosis; emaciation considerable. Serum used (mostly by himself or his physician) for some months. Complete recovery, so far as disappearance of lesions and bacilli, the regaining of strength, and appearance of robustness are concerned. He has long ago returned to his office work as a newspaper man, and is to-day at his post, declaring himself well. It is now more than three years since he received his first treatment. A microscopic analysis made at this writing fails to find any evidence whatever of tubercular infection. Mr. G., after recovering, successfully passed examination for insurance.

Case X.—Miss V., St. Louisan, October, 1897. Case of early tuberculous development. Slight fever, cough, and expectoration; few bacilli. Treatment with serum by rectal injections. Three months later patient seemed recovered and returned to work. Saw her one year later, apparently well and still at work.

Case Y.—Mr. D., Louisiana. Began treatment July, 1895. Lung infiltration, cough, sweats, fever, numerous bacilli; patient incapacitated for work. Treated in July of 1895, and following two months symptoms disappeared, all but some mucous expectoration and susceptibility to become slightly hoarse on exposure. No more bacilli. Returned to his duties, and was there at last report in 1898, seemingly free from active tuberculosis at least.

Case Z.—Dr. A. E., Indiana. Chronic slow form of tuberculous development in both lungs; emaciation and bacilli. Had been sick and idle for months. Early in the spring of 1895 began treatment. In June he returned to Indiana from St. Louis and remained there, continuing serum treatment. He regained his health, and four years after his treatment was at his duties, enjoying comparatively good health and free from bacilli. He proclaims himself recovered.

Case A1.—Dr. D., Colorado. Treated in 1895 for a three-years' progressive pulmonary infection, in which the bacilli, expectoration, and symptoms slowly but surely produced destruction. He recovered so as to again return to his professional duties. He himself saved other lives with the same product (serum I prepared for him), and later passed a successful examination for enlistment in the army.

Case A2.—Miss S. Had had bone tuberculosis (spine and ilium) some two years when I saw her. Had been operated upon in Chicago and treated with another serum produced in St. Louis, with unsatisfactory and bad results. Came to St. Louis and fell into my hands. Found the extensive wound producing pus due to mixed infection. Bacilli tuberculosis and streptococci; prostration complete. The urine also contained numerous tubercle bacilli. Used both antitubercle and antistreptococcus serum. To-day, some two years later, she is up and about and active and seemingly free from tuberculosis. I propose to write a complete and exact report of this case in the near future. I merely mention the improvement here as a result which the relatives, from whom I have just heard, consider a remarkable recovery.

Besides these, two physicians in St. Louis and one chemist there, in whom tuberculosis actively existed, were treated successfully. This makes twenty-nine cases of serious infections of tuberculosis of the lungs, throat, bones, joints, kidneys, and testicles which were subjected to serotherapy after failure by usual remedies, and usually hopelessness of the attendants and friends. To these cases I might add those of several fatally sick consumptives who were improved, some of whom are still living, and others whose lives seemed prolonged; but this paper does not contemplate such cases, nor is it meant to embrace early fatal infections. These results were obtained, I wish to emphasize, when the serum and the methods of application were comparatively crude. Constant work since and years of experience by myself and various investigators have improved everything. Combining the knowledge acquired with proper climatic influences and other scientific measures, results not equaled, perhaps, by any other form of management and treatment are possible.

Indeed, I do not neglect any approved scientific method of medication; even in some of the above-mentioned cases I resorted to special symptom treatments when necessary. Tuberculosis is such an erratic, comprehensive, complicated disease that a physician who purposely withholds any just remedy from his patients, or tries to help them by persuasion, assurances of safety, policy, etc., is guilty of a possibly irreparable outrage. Science shows to-day good grounds for specific treatments, and he who will investigate them and properly classify his cases by a correct diagnosis and experience is sure to succeed in many instances where neglect to appreciate these facts will end in dire failure.

FRACTURE OF THE PATELLA.

COMPLETE UNION BY OPEN OPERATION SEVEN MONTHS AFTER INJURY.*

By JOSEPH B. BISSELL, M.D.

This patient whom I have the pleasure of bringing before you this evening is presented merely to show the value of an operation which is not very frequently performed—that is, in comparison with the frequency of the injury.

A. J., aged forty-eight years, married, German, cabinetmaker, was admitted to my service at Bellevue Hospital May 11, 1899. Family history is unobtainable. Patient had the usual diseases of childhood. Eighteen years ago had a severe attack of inflammatory rheumatism, after which the left knee was quite lame. Six years ago he was operated upon for pyonephrosis. Whether or not the kidney was removed I have been unable to learn. Chancroids five years ago, without any evidences of secondary symptoms. Is a heavy smoker, and temperate as to liquor. Had an attack of malaria seven years ago, and at present is under treatment for locomotor ataxia. Has also cystitis.

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* Read before the Society of the Alumni of the City (Charity) Hospital, October 11, 1899.

Seven months before admission to Bellevue Hospital he fell while walking across the floor in another hospital, and it was found that his patella was fractured at this fall. The fracture was treated there for five months by adhesive plaster, coaptation apparatus, and fenestrated plaster of Paris. He states that the fragments never were brought together nearer than half an inch. At present he is excessively anæmic, blood count showing 1,700,000 red and about 70,000 white cells.

On examination, I found a simple transverse fracture of the patella at the junction of the lower and middle thirds, two inches separation. The fragments seemed very much larger than normal and much larger than the other patella. Fairly good movement of the joint. Preliminary treatment, hot and cold douches and massage to loosen up the adhesions. On May 26th operated by a long transverse incision over middle of the joint. Tissues dissected back, above and below, freeing as far as possible the fragments without detaching them. Wire was inserted pretty well back from the edges of the fragments after they had been thoroughly cleaned and dissected free from fibroid tissue, which in this case seemed to be almost cartilaginous. The joint surface of the knee was also filled with this tissue and the joint itself was quite completely changed. This dissection took over an hour, and even afterward it was almost impossible to bring the fragments together so that the bony surfaces touched; but with considerable difficulty this was done. Capsules sewed with continuous catgut suture, as was also the skin. Wound drained superficially with silkworm gut. The joint had been previously drained with rubber tubes on both sides; these tubes were removed at the end of the first twenty-four hours, without changing any but the outside dressing. Leg put up in position of strong extension. In spite of this, the tension was so great that on June 2d, seven days after the operation, the wire was found to be broken and at least an inch and a half separation between the fragments had taken place. Union of soft tissues was complete. The temperature of the patient had been 100.2° F. at its highest, on the third day following the operation.

On June 13th reoperated. Patella was rewired with heavier wire, and, in order to bring the fragments more closely together without so much tension, I made a vertical incision on and above the upper fragment and released in this manner more of the adhesions. The fragments were then brought together very easily. The usual dressing was applied, with rubber tubes draining the joint, for the first twenty-four hours. On the 17th of June, the temperature, pulse, and respiration having been normal since the operation, the wound was dressed, seemed perfectly healthy, and had evidently healed by first intention with close coaptation and perfect bony union. On the 20th of June there was a sudden development of high temperature, the wound in the mean time remaining perfectly normal in appearance and feeling. The temperature was found to have a diurnal rise and fall, which was controlled by large doses of quinine; it was, of course, a malarial explosion.

You will please consider this man as being shown merely to illustrate what can be done by proper and careful surgical procedures under very adverse conditions in bringing about bony union in fracture of the patella, even where the injury has taken place many months before. Surgically, I have nothing to do with his gait, with his anæmia, his spinal-cord lesion, his kidney disease, or his possible syphilis, with the long interval between his injury and its proper repair, or with the fibrous adhesions which filled the knee joint and bound down these fragments in an almost cartilaginous band. But I wish simply to show that, in spite of all these discouraging circumstances, I have obtained a complete union and so far perfect coaptation of the fragments of the patella, and the patella freely movable upon the joint surface. I think you will agree with me that the result of the operative interference under these several unfavorable conditions, which the history shows were present, proves the value of the open operation in fracture of the patella, and affords, at least in this particular case, an evidence of its usually favorable results.

15 WEST FIFTY-EIGHTH STREET.

A SUGGESTION FOR TABLET-TRITURATE MANUFACTURERS.

BY CHARLES J. PROBEN, M. D.

IF Hippocrates could be resurrected in order to visit our hemisphere, and view the modern progress of the science of medicine, what bewonderment would befall him! This would especially apply to the subject of therapeutics. Even a century ago, remedies for the treatment of disease were largely drawn from the animal kingdom. It is beyond the realm of imagination what a conglomeration of nauseous and repulsive substances the human economy had to contend with. They were scarcely worthy of the name of drugs, and physiology could not support their supposed action. Advance and betterment notably resulted when potent herbs began to come into vogue; recognition that the active principles of these were contained in the extractive matter gave way to the isolation of the active principles inherent in the vegetable kingdom. Tinctures, fluid extracts, and solid extracts marked an era and the dawn of true pharmacy. Isolation of the principles tended to place in our hands drugs both potent and reliable. These alkaloids could be depended upon for their physiological action; aside from their thorough reliability, they could be given to further quicker action and in such ways as to overcome any nauseous qualities. In powder form and in pill form they have for a long time been favorites; the last decade, however, has been responsible for the introduction of the tablet triturate, which is largely due to the enforced competition of manufacturers in placing cheaper products upon the market. They have very much come into vogue and can be conscientiously lauded for exact dosage, effectiveness, and elegance of administration. While the larger number of these tablets are harmless drugs, a minority represent some of the most active alkaloids of our materia medica. Be it remembered that the drug is triturated with sugar of milk, made into a mass by excipients, and divided into the necessary numbers. The majority are white and of the same size, be they inert drugs, harmless drugs, or the most poisonous alkaloids. No means of distinction exists except by a chemical analysis. The wholesale drug manufacturer places all alike in similar bottles, and no exterior difference exists to distinguish one from the other save the label on its face. No regard is had to the poisonous quality of its contents or the inertness. If tablets of morphine, strychnine, aconitine, atropine, cocaine, colchicine, coniine, digitalin, hyoscine, physostigmine, pilocarpine, veratrine, etc., were placed next to some white tablet, such as calomel or some other harmless drug, it would be beyond human comprehension to distinguish between the poison and the non-venomous. The bottles in which the former are contained are not labeled poison. This is the rule, of which I have recently convinced myself by inspection of numerous pharmacies. A separate closet, containing the most virulent poisons, which is usually locked and separated from the rest of the drugs, is a necessary adjunct of every well-organized drug store. Such, however, is not the case in a large number of pharmacies, and I have frequently seen a bottle containing calomel tablets on the same shelf with virulent narcotic poisons. Tablets alike in color, bottles alike in size and color, labels alike in color—no distinguishable feature of one from the other—the arm guided by an overconfident brain can readily pick up the wrong bottle and a mistake is the result. Such was the occurrence of a case two days ago, which hurriedly called me to an infant suffering from tonic and clonic spasms as a result of a mistake of a drug clerk. I am instigated to go into details because of the criminal negligence displayed by the pharmacist in giving one-thirtieth-grain strychnine tablets where a thirtieth of a grain of calomel was ordered by a *confrère*. The infant was given but one tablet, as ordered by the physician,. followed by the spastic condition, with cyanosis, interrupted respiratory movements, and cessation of pulse. I repaired to the pharmacy and found the two drugs simultaneously in the same closet, though on dissimilar shelves. At first denial of the mistake, later admission by the proprietor after the little one had passed the critical stage. Comparison of dissimilar tablets as to size, shape, and consistence, the container, etc., divulged nothing to show the difference, save by taste. It dawned upon me that the pharmacist was principally to blame, though the wholesale manufacturer of these goods had absolutely exercised no care to distinguish one from the other, save the label—nothing exterior would indicate the danger lurking within. Gross carelessness in trading with these dangerous goods will never be done away with until lawful compulsion is exacted. Regarding the putting up of poisons, there exists no statutory law in any of the States. The manufacturer should be compelled to adopt a container conspicuous in some respect—different from the ordinary bottle. While the sale of poisons is lawful for certain purposes, when registry is exacted, it is also within the penal law to recognize negligence criminally and designate both misdemeanors and felonies. This evil will persist unless the physician insists upon impressing on the manufacturer the necessity of adopting a container of some conspicuous form which will at once make it visible to the eye and sensible to touch that the contents of the bottle are poison. A certain color of bottle, with sharp teeth projecting from its sides, so as to be at once conspicuous even in the dark, with a cork of similar construction, would certainly quickly impress everybody as something unusual. White letters upon a dark-red background for the label, as requisite in this State for the sale of poisons, are conspicuous indeed. While these appear as minor details for the original container, the patient is not in any way protected in recognizing a mistake if the tablet triturates are dispensed in a cardboard box. From time immemorial and internationally, red has always been adopted as the danger signal in the lights of locomotives, steamships, trains, etc. Would it not be a good plan for us to adopt a similar rule with regard to tablet triturates, pills, and other solid means of giving drugs? Have the manufacturer at least adopt it for the more narcotic drugs, especially the alkaloids, and color every one of them red. At once a mistake would be recognized by pharmacist, physician, and patient, if he received the necessary instruction. Objection may be at once raised that the patient should be unconscious of the character of the drug and should not be unnecessarily alarmed. True, but need we divulge the character of the drug save to say "Your tablets will be of a red color"? This apprehension is really meagre compared to the numerous mistakes a well-systematized order would eliminate. Such coloring would immediately be conspicuous, and is not in discord with the fact that but few drugs exist of a bright-red color which are worked into tablet-triturate form. Let a leading manufacturer start coloring all the narcotic alkaloid tablet triturates red and announce the fact, and others will soon follow this innovation. If a law were enacted in this State to compel narcotic alkaloid tablet triturates to be colored red, and to be so dispensed, they would quickly come to us in that condition. While it is simplicity itself, with inconvenience to none, it may in future be the cause of saving many a life. Culpable negligence is an ally of felony, though never put to a test. But one drawback occurs to me—that is, that if one of these narcotic drugs is dispensed with some other article, which may discolor it, so as to make our law non-operative, I would suggest that it be coated with a red-colored sugar mass. Chocolate coating seems elegant, but it does not convey to our minds the danger which red invariably does. Only if manufacturers in general adopted the same plan, so as to make it universal, would these suggestions be of any use. Hence, progressive manufacturers, be on your mettle; improve your service to a faithful community that is the means of your sole subsistence. Give us tablet triturates in which danger is distinguishable, and significance of color at once implies caution. The saving of merely one life should well repay you for your trouble, otherwise the law may gain advantage over you. Throw aside *innocuous desuetude* and enhance the reputation of elegant prescribing.

970 Lexington Avenue.

A CASE OF MIXED TYPHOID AND MALARIAL FEVERS

By JAMES L. BEVANS,
ACTING ASSISTANT SURGEON, U. S. ARMY.

In view of the excessively rare simultaneous occurrence of typhoid and malarial fevers, I wish to report the following case, which has come under my observation recently. Blood examinations were made repeatedly in every one of the sixty cases of typhoid from which this one was selected. Many of the patients had previously served in Cuba.

Corporal Richard H. Miller, Company K, Twenty-ninth United States Volunteer Infantry, aged twenty-one, born in Tennessee, was admitted to the United States Army General Hospital, Presidio of San Francisco, California, October 3, 1899.

The man lived in his native State until enlistment in the Fourth Tennessee Volunteer Infantry in the fall of 1898. He then served in Cuba, and during his first service had a few light chills, which continued after his return home and until his reenlistment in the Twenty-ninth United States Volunteer Infantry in August, 1899. At this time he was apparently well. The chills appeared again at Fort McPherson, where he stayed about a month, and continued irregularly up to the time of his present sickness.

En route to the Presidio, where he arrived October 1st, he was confined to his bed with headache, constipation, general malaise, and light chills. He had not previous to that time been on sick report.

After three days in quarters in camp he was sent to the general hospital. As he was brought into the ward he looked pale, emaciated, and cold. His temperature was 102.4° F., respiration 22, and pulse 94. The tongue was coated, the abdomen was tender, the liver and spleen were somewhat enlarged. His mental condition was dazed.

By October 7th rose spots had developed and he was in an active delirium. He had involuntary passages of urine and fæces. Light chills occurred daily after the 6th. On the 11th the chill was prolonged and severe. Malarial parasites were first found in the blood on that day. Quinine was then administered in large doses, and the last chill was observed two days later. Delirium continued until the 25th. The temperature curve and symptoms after the 13th were those of typhoid fever. The temperature reached normal on the 29th and slow convalescence has taken place.

As will be seen from the report of Dr. C. F. Craig, pathologist at this hospital, the "Widal" reaction was absent until November 9th, twelve days after the temperature had become normal. Quinine had been given in unknown doses before admission. This probably accounts for the negative reports as to malaria on October 4th and 8th.

Report upon the examination of the blood of Corporal Richard Miller, Company K, Twenty-ninth United States Volunteer Infantry, by Dr. C. F. Craig, pathologist:

October 4th.—Malaria. Examination for the parasite of malaria negative. There are some leucocytes containing pigment. Widal test negative.

8th.—Malaria negative.

11th.—Malaria. Numerous "ring forms" of the malignant quotidian æstivo-autumnal malarial parasites. These are small, circular in form, somewhat refractive, the pigment consisting of from one to two small, almost black specks. Not amœboid. The corpuscles containing the organisms are dark olive-green in color, and shrunken. A few are crenated. Diagnosis: "Æstivo-autumnal malaria." "Widal" test negative.

13th.—Malaria negative. Widal test negative. There seems to be a slight clumping, but the bacilli remain motile.

November 3d.—Malaria negative. Widal test negative. There are a very few minute clumps, but the bacilli remain active. This may possibly be a very slight reaction, but I would ordinarily consider it as negative.

9th.—Malaria negative. Widal test positive. Marked reaction immediately. It is interesting to note that this is the first positive reaction obtained, and raises the question as to whether or not the malarial complication hindered or lessened the power of the blood to give reaction. This may possibly be the explanation, although in the few cases of malaria complicating typhoid which I have seen the Widal test has always been responded to promptly.

Presidio of San Francisco.

ATHLETICS IN PUBLIC SCHOOLS.*

By J. GARDNER SMITH, M. D.

Gentlemen: In trying to present a brief paper upon this important department of public-school work, I believe we should keep most prominently before us the health of the pupils. When Mark Twain fell off the cliff seventy-five feet high last summer and received, according to the Christian-Science "healer" whom he called in because the horse doctor was out of town, "two hundred and seventy-four fractures," he (Mr. Twain) learned more than two things. One thing that was told him was that "nothing exists but Mind." "All else is substanceless, all else is imaginary."

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* Read before the Society of the Alumni of the City (Charity) Hospital, October 11, 1899.

Now, if you take the trouble to consider the overcrowded public-school curriculum you may begin to think that the mind is capable of unlimited cramming, its capacity being unlimited, its resources inexhaustible. I do not wish or intend to disparage the New York school system, because I believe that it is wisely supervised and that it has conscientious and capable instructors.

The tendency, however, is toward too much mental strain and nervous concentration and not enough pure recreation and relaxation. We believe that the physical work at least should aim primarily at the improvement of the health and functional activity of the body. There is doubtless a great deal of educational value in physical training. Educators appreciate this fact. Our much-respected governor of New York State has said that physical training wisely regulated tends to the development of character. Colonel Roosevelt saw the practical results of physical training on San Juan Hill. We doubtless are all agreed that careful, systematic physical training tends to increase strength of character, body, and mind.

Our subject, Athletics in Public Schools, according to the *Standard* definition, has reference to physical training by gymnastic exercises or out-of-door sports.

Let us ask what has been done, what is being done, and what can be done in a practical way for the benefit of the pupils as above suggested.

What has been done? Previous to 1890 the board of education had not introduced any definite system of physical work. Baseball, football, handball, hand tag, and the various games permissible about the school buildings had been allowed. For some years there had been an appropriation for apparatus and instruction, but no feasible plan had been adopted by the board. In the summer of 1890 a special instructor was appointed and certain schools designated to be fitted up with dumb-bells, Indian clubs, bar bells, wands, ladder, buck, horse, parallel and horizontal bars, jump stands, etc. The exercises were taught by the special instructor, who visited each school once each week, seeing the whole or a portion of the classes each time. The writer of this article had the privilege of being the first special inspector appointed and of outlining the work.

The first lesson consisted of one or two simple exercises. At the second lesson the class would be conducted by the regular teacher or a designated leader. In this way the foregoing work was reviewed and criticised by the special instructor. Then new exercises were taught which would naturally follow the preceding lesson. This plan was carried on till 1896, at which time twelve schools in different parts of the city were visited regularly. Many schools sent teachers delegated to learn the work taught and introduce the same in their respective schools. The system used was based largely upon that of the German Turnerbund. Some of the ideas of Ling, the paternal ancestor of the Swedish system, were inculcated. The work was graded so that each class practised a set of graded exercises. Perhaps by direct teaching and through the delegated teachers a hundred and fifty thousand children were reached and influenced by these exercises.

We must remember, however, that there are more than two hundred and fifty thousand children and more than six thousand teachers in our schools. To accomplish the best results it seems that some plan should be adopted by which a supervisor or assistant might reach at least each teacher personally.

In 1896 two supervisors were appointed who, in conjunction with one special instructor, have tried by lecture, conference, and visitation of schools to give definite instruction to be followed in the class room and gymnasium. The class-room exercises to-day are largely without apparatus. The Swedish system is used to some extent.

There are thirty gymnasia, most of which are in buildings erected since 1893.

Out-of-door Gymnasia.—An effort has been made during several years to establish out-of-door gymnasia. During the season just past there were twenty out-of-door gymnasiums. These were for the most part in school playgrounds or in open lots adjacent to school buildings. About sixteen thousand children were reached and benefited. Games were instituted and sufficient interest manifested to support quite a programme of competitive sports in September last.

At the present time not more than fifteen minutes daily are given to physical exercise in the public schools. Of course, this time is altogether too short to accomplish much. It is difficult to arrange the daily programme to accommodate all the supervisors of specialties. The Manhattan Borough superintendent told me this evening that not long since a principal complained that the regular teachers had their classes on some days for but an hour and a half.

As to what may be done, it has been suggested that the hour from three to four each day be given for gymnastic exercise. Special instructors in such a case would be necessary to take charge of the work in each building. This would mean a very large number of instructors in physical training. There are in Manhattan Borough one hundred and fifty special supervisors. Just imagine this small army swooping down upon our children. Each specialist believes that his specialty should have more time. The board of education just here has an opportunity for careful judgment.

The writer of this paper has not a perfect plan to suggest. He would, however, suggest that at least half an hour daily be given to pure bodily improvement. Recesses should be used for purely recreative exercises out of doors.

Gymnasia should be in the upper part of the buildings and perfectly ventilated. Teachers should know more of physiology, and be able to teach gymnastic and athletic exercises under careful supervision more intelligently than at present. The children should be examined physically and placed in appropriate gymnastic classes, graded to suit their physical condition. The athletic and gymnastic exercises should be so varied as to interest the pupil in such a way that he may look upon them as a pleasure and recreation.

When this is accomplished we shall have stronger children with less anxious faces, stronger men and women, and a better nation.

21 West One Hundred and Twenty-second Street.

Therapeutical Notes.

The Treatment of Prolonged Accesses of Epilepsy.—*Riforma medica* for November 20, 1899, recommends that the patient be put into a darkened room and given the following clyster:

℞ Sulphate of sodium, Senna leaves, each ..	300 grains;
Glycerinated water	3,150 “

M.

Then introduce into the stomach through the nares an œsophageal tube and inject the following solution:

℞ Bromide of potassium ..	75 to 150 grains;
Hydrate of chloral	60 to 120 “
Orange-flower water	3,000 “

M.

If there is asphyxia, apply artificial respiration, with rhythmic traction of tongue and faradization of the thoracic muscles.

Hydrate of Chloral in Gastric Hyperexcitability.—Rosenbach (*Therapeutische Monatshefte*, September, 1899; *Gazzetta internazionale di medicina pratica*, October, 1899) recommends as the result of his experience in gastric hyperexcitability accompanied by diarrhœa, exaggerated peristalsis, and retention of the ingesta through pyloric spasm, the following formula:

℞ Chloral hydrate	15 grains;
Water	75 “

M.

From twelve to twenty-four drops to be taken thrice daily, after meals, in half a tumblerful of water. These small doses only produce secondary phenomena and exercise a marked effect upon palpitations of dyspeptic origin, flatulence, and oppression.

A Dusting Powder for the Itching of Jaundice.—The following is given in the *Riforma medica* for October 19, 1899, as Leichtenstern's formula:

℞ Menthol, Zinc oxide, each	5 parts;
Starch, Talc, each	30 “

M.

Caffeine in the Early Stage of Acute Bronchitis.—According to the *Indian Medical Record* for December 20, 1899, the most painful period in acute or subacute bronchitis is at the onset, when the expectoration is absent and the cough very severe. According to Dr. F. Edgeworth, of Bristol, caffeine, especially when associated with an alkali, facilitates the expulsion of the sputum and shortens the stage. He employs every three or four hours a dose of from fifteen to twenty-five grains of citrate or acetate of potassium, and in addition at bedtime five grains of caffeine. Administered in this way, he finds that caffeine quickly overcomes the spasm of the bronchial muscles which checks the expulsion of the sputum, and thus relieves the patient.

Against Beginning Tuberculosis.—*Riforma medica* for November 30, 1899, ascribes the following to Luton:

℞ Neutral acetate of copper..	$\frac{15}{100}$ of a grain;
Crystallized phosphate of sodium	$\frac{3}{4}$ “ “

Add licorice and glycerin sufficient to make one pill. Two to be taken daily.

For Nasal Hydrorrhœa.—*Settimana medica* for December 2, 1899, citing the *Centralblatt für die gesammte Therapie* for November, 1899, gives the following:

℞ Sulphate of atropine	$\frac{3}{40}$ of a grain;
Sulphate of strychnine ..	$\frac{3}{4}$ “ “
Syrup of orange peel	6,000 grains.

M. Two coffeespoonfuls to be taken daily.

To Check the Lacteal Secretion.—The *Revue générale de médecine, de pharmacie et d'hygiène pratiques* for October, 1899, gives the following:

℞ Sulphate of atropine ...	$\frac{45}{100}$ of a grain;
Sulphate of magnesium.	1,350 grains;
Infusion of gentian	3,600 “

M.

Eight soupspoonfuls may be taken in the day at two-hour intervals.

For Incontinence of Urine.—According to the *Buffalo Medical Journal* for February, lycopodium has been used with success for this affection in children. Twenty drops of the tincture should be given three times a day, and this dose may be increased to forty or fifty drops. It is, in some cases, more efficient than belladonna.

A Lubricant for Urethral Instruments.—Zuckerkandl, cited by Seng at a recent meeting of the Vienna Medical Club (*Wiener medizinische Blätter*, November 2, 1899), recommends this mixture:

℞ Glycerin	20 parts;
Gum tragacanth	5 “
Solution of carbolic acid (three per cent.)	180 “

M.

For Chloro-anæmia.—*Progrès médical* for August 26, 1899, recommends the following:

℞ Artemisine	$\frac{1}{65}$ grain;
Crystallized quassin	$\frac{1}{65}$ “
Protoxalate of iron	$1\frac{1}{2}$ “

in one lozenge. Four lozenges may be taken daily, two before each principal meal. Color begins to reappear invariably, says the journal, between the ninth and twelfth day. The combination of artemisine with crystallized quassin stimulates vigorously the muscular fibres of the alimentary canal, as evidenced by an immediate improvement of the appetite.

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THE PRACTICE OF VACCINATION.

The considerable prevalence of small-pox in various parts of the country emphasizes anew the necessity of attention to details in the practice of the simple operation of vaccination. There are indications that a controversy concerning the relative excellence of glycerinated lymph and dried lymph is likely to arise from the failure of some physicians to succeed in imparting vaccinia with either the one or the other of these two forms of vaccine. It is plain, however, that any such question can not be settled on testimony from those who, using only the glycerinated lymph, have met with disappointment, or from those who, employing only the dried lymph, have had no better results. Only those who have used both forms on a large scale can furnish trustworthy data for the purpose. Moreover, they must be persons who observe the necessary details in the operation of vaccination.

Vaccine virus is not such a perishable article as is generally imagined, provided it is properly stored and cared for. With sufficient care, there is no difficulty in keeping dried lymph for months practically unimpaired. It is not necessary to keep it at a very low temperature, but it is imperative that it should be protected against moisture if it be exposed to warmth for any considerable length of time. Theoretically and according to European experience, liquid lymph also, with adequate sterilizing and sealing precautions, should not be difficult of preservation for long periods, but as yet we have had no great experience with it in this country. Much of it is being used at the present time, however, and it would be very heartily to be regretted if it were generally employed without the observance of that care which is necessary to success. We know of an instance in which a purveyor of vaccine received a complaint from a practitioner who reported failure with a specimen of dried lymph with which the recipient of the complaint had furnished him, asseverating that the fault could not have been his, for he had taken all possible pains—he had even gone to the trouble to boil the quill. This happened many years ago, and of course it was not even at that time a fair index of the information regarding vaccination generally possessed by physicians. But it is not so much ignorance as it is carelessness that is at the bottom of many men's lack of satisfactory success in the practice of vaccination, and that carelessness, we fear, is incurable. Those men's results should be eliminated when it comes to summing up any data bearing upon the subject.

HORSEFLESH SAUSAGES.

According to an editorial in the December issue of the *Pacific Medical Journal,* certain butchers in San Francisco have been detected in the act of using horseflesh in place of beef in such meat foods as sausages, Hamburg steaks, etc. The reason for this measure is, of course, to be found in the cheapness of horseflesh as compared with other meats, the former being obtainable, it appears, for about two cents a pound. The public have, therefore, been robbed to a considerable extent by the difference of price, to say nothing of the fact that the unscrupulous venders do not appear to have been in any degree careful as to the quality of the animals used for food, worn-out horses condemned to the bone yard having been made use of, and all parts of the animal employed.

The San Francisco Board of Health deserves considerable credit for its careful investigations of samples of sausages and for its thorough and efficient action in bringing the offenders to justice.

The flesh of horses selected with proper care and killed under proper conditions is by no means an unwholesome article of diet, and its objectionableness is no doubt entirely a matter of groundless sentiment; but that is no excuse for foisting it, under false pretenses, upon customers in place of the more expensive beef and other meats. If horseflesh is used as food, it should be so used openly that those who partake of it may know what they are eating, and those who object on sentimental grounds may have their perfectly excusable prejudices respected. Moreover, those who choose to buy horseflesh should not be robbed by being called on to pay the price of other meats. On the continent of Europe, in France, Germany, Austria, Belgium, and Denmark there are, we believe, "hippic butchers" who are regular purveyors of this food. In Paris the consumption is considerable, amounting to some five thousand tons annually. There, however, the "hippic butchers" are duly licensed, and they are said to be supplied from two special slaughterhouses outside the city, the sanitary conditions of which, as well as the quality of the meat, are subject to a most rigorous inspection.

As it is quite possible that what is done in San Francisco is being done elsewhere, it might be well for boards of health generally in all large cities to conduct an investigation of the contents of the sausages sold in their jurisdiction, particularly of those of the cheaper kinds. According to the *American Journal of the Medical Sciences* for January, citing the *Analyst*, Bastien gives the following method for the detection of as little as five per cent. of horse meat, even in the presence of starch: "Twenty grammes of sausage, finely minced, are boiled from half an hour to an hour in about one hundred cubic centimetres of water. The volume of water is reduced by evaporation to about thirty cubic centimetres, then the whole is cooled and filtered. About ten cubic centimetres are tested with a few drops of compound iodine solution (one part of iodine and twelve parts of iodide of potassium in one hundred parts of water). A fugitive reddish-violet coloration indicates the presence of horse meat. The reagent must be added carefully, since a slight excess changes the color to reddish-brown. If starch is present the broth is decanted when cold, and from one to two volumes of acetic acid are added, according to the amount of starch. Then, after standing for five minutes, the liquid is filtered and tested as before."

We should not be surprised if a little investigation in various cities brought to light the mysterious hidden ways of the sausage vender.

SURGEON-GENERAL WYMAN ON THE PLAGUE.

The Treasury Department has recently issued a pamphlet entitled *The Bubonic Plague*, written by Surgeon-General Walter Wyman, of the Marine-Hospital Service, who gracefully acknowledges that in his study of the subject he has received valuable assistance from Surgeon Eugene Wasdin and Passed Assistant Surgeon H. D. Geddings. The pamphlet is a revision of an article of Dr. Wyman's published in his annual report for 1897. We have no hesitation in saying that it is the most satisfactory of all the brief accounts of the plague that we have seen. We do not profess, however, to be familiar with the whole literature of the disease, a literature so extensive that, as Dr. Wyman says, a mere enumeration of titles and authors takes up forty pages of the *Index-Catalogue of the Library of the Surgeon-General's Office, United States Army*, and a score or more of the columns of the *Index Medicus*.

Dr. Wyman deals first with the history of the plague. Historians have mentioned outbreaks supposed to have been those of plague as having occurred at varying intervals ever since the times of the most ancient Egyptian kings. Its home was considered to be the northern part of Africa. Ordinarily it was confined to the so-called "plague belt," but again and again it has overrun Asia and Europe. Its recent appearance in Santos was the first instance of its spread to the Western Hemisphere, and, if Dr. Wyman's intelligent vigilance is supplemented, as it can hardly fail to be, by the efficient cooperation of the sanitary officials throughout the New World, there is little danger of its getting a foothold on the American continent. Nevertheless, extreme care should be taken, as Dr. Wyman says, in the inspection of vessels arriving even from ports that are not infected.

It must not be supposed that Surgeon-General Wyman deals with his subject solely from the sanitarian's point of view; indeed, his article may almost be called encyclopædic. He discusses in a masterly way the ætiology of the disease, its modes of transmission, its bacteriology, its clinical phenomena, its prophylactic treatment with Haffkine's material, its curative treatment with Yersin's serum, and numerous points which, though not falling under any one of these heads, are such as one would expect to find considered in a textbook. His essay is altogether admirable, and we hope that it is to be made readily obtainable by physicians in general, also by masters and owners of vessels, who might learn from it much that would tend to make them ready and effective allies in the work of preventing the spread of this fearfully destructive pestilence.

VEGETABLES AS A SOURCE OF TETANUS.

The late Mr. Henry Thompson (*Lancet*, January 20th) records a case of tetanus following nephropexy in which no possible source of germ introduction would seem to be traceable through the wound. The author says: "But in the case I have narrated how could any bacillus from earth or elsewhere have come in contact with the wound? A day or two before the operation the patient ate celery for luncheon. Could some bacilli have been present in the imperfectly cleansed celery and have come in contact with an abrasion in the mouth?" It is, of course, well known that the soil is the special habitat of the tetanus bacillus, and that vegetables taken from the soil may be a peculiar source of danger would seem, therefore, to follow naturally. Such vegetables as potatoes, cabbages, etc., which are boiled before use, would, of course, be rendered innocuous thereby; but the danger from celery, lettuce, radishes, and especially strawberries, concerning which many people hold that to wash them spoils their flavor, if insufficiently cleansed, is one that needs consideration.

DIABETIC ULCERATIONS OF THE THROAT.

Among the causes of ulceration in the throat diabetes is not generally enumerated. The well-known tendency of diabetes, however, to cause ulceration makes it strange that this disease has not been classed with syphilis and tuberculosis as one of the standard causes. Dr. W. Freudenthal (*Annals of Otology, Rhinology, and Laryngology,* November, 1899), in a paper recently read before the New York Medical Union, calls attention to the diabetic ulcer, of which he describes five cases. In the first case he was entirely at a loss to account for the ulceration, and the knowledge that the patient subsequently died of diabetes did not then suggest any connection to him between the two conditions. But in the subsequent cases the known existence of diabetes coincidently with the throat ulceration, and the exclusion, after the most careful examination, of syphilis and tuberculosis, led him to connect the two. Dr. Freudenthal divides the ulcers into two classes: malignant and benign. The ulcers do not seem to have any specially distinctive characteristics, resembling syphilitic or tuberculous ulcers indifferently, neither have they any special seat of predilection. Diabetes as a factor in pharyngitis sicca is well recognized, but we believe that its rôle as a possible cause of ulcer has not hitherto been pointed out. The local application of orthoform in emulsion was found to be an excellent treatment.

MEDICAL NEEDS AND THE DILATORINESS OF TELEGRAPH COMPANIES.

The dilatoriness of the telegraph companies is a source of constant annoyance to most people, but it is satisfactory to learn that in matters of life or death the law holds them in some sort responsible. The *Journal of the American Medical Association* for February 3d records a case in which the Western Union Telegraph Company was held responsible at a jury trial in the lower court in Kansas, which judgment was also sustained on appeal, in consequence of delay on a telegram sent by a patient to summon the attendance of a doctor in a case of hernia. The evidence in this case was especially overwhelming, for testimony showed that the doctor lived within four blocks of the receiving office and within free delivery, was known to the operator, and had telephone communication with the office; and, further, that he was at home, disengaged, and able and willing to promptly respond to the call. The company admitted its liability, but seemed to think that the refunding of the twenty-five cents paid for the telegram was all that it was called upon to do. Fortunately and properly, the jury took a different view of the case and awarded damages to the extent of fourteen hundred dollars. This is encouraging to other physicians and patients who may suffer similarly at the hands of the telegraph companies to try conclusions with them and compel them to some sort of decent service.

COAL OIL IN DRINKING WATER.

According to the *Medical Times* for February, Dr. I. E. Shute, in the *Medical Summary* of unspecified date, strongly recommends the addition of an ordinary gobletful of coal oil to a large cistern of water as a detergent. It is said to clear out "wiggletails" and wood lice, to purify the water, and to prevent the formation of germs. It should certainly be advantageous in water from malarial districts by destroying the larvæ of anopheles. The taste for coal-oil water, no doubt, would necessarily be a cultivated one, but, inasmuch as France boasts quite a number of petroleum drinkers, it might not be so impossible of acquisition as accidental experiments hitherto made with a coal-oil taste in soup and other dietary articles would lead one to suppose.

THE TELEPHONE AS A TEASER.

The *Cleveland Medical Gazette* for January sets forth the objectionable aspect of telephone service from the doctor's point of view. Patients question him over the wire, and, yet, there has been no visit or office interview, so that generally he has not the assurance to make a charge. Our contemporary thinks that when a telephone conversation does away with the need of a visit a charge should be made for it. "Otherwise," it says, "the doctor's time and his gray matter are drawn upon without compensation, and he is further drained by having to pay for the very apparatus that is used to extract them from him." The remark seems to us quite justified.

"OFFICIAL ALCOHOLISM."

Under this heading the *Gazette hebdomadaire de médecine et de chirurgie* for January 18th quotes from the *Gazette des hôpitaux* an expression of regret that the French government has authorized the establishment of "cabarets circulants," or traveling bars, on the railways of France. It quotes also from the *Nord médical* a remark to the effect that it is edifying to compare this action with the voluntary abandonment of bars by the Southern Pacific Railway at all its stations. We had not before known of this manifestation of virtue in the southwestern portion of our country, but, then, we often have to look abroad for home news.

THE CHICAGO DRAINAGE CANAL.

It is quite natural that the inhabitants of places bordering on the Mississippi River at points below the mouth of the stream through which the Chicago drainage canal empties its contents should feel apprehensive of pollution of their supply of drinking water, but it may well be imagined that, if such pollution should be found to exist, it may prove only temporary. The Mississippi may not be able to purify the accumulated sewage of years before its waters reach St. Louis, but, give it time to work off the accumulation, and it may prove perfectly competent to deal satisfactorily with Chicago's subsequent contributions.

THE PLAGUE AND THE VACCINATION OF OCEAN TRAVELERS.

Our rules concerning the vaccination of persons who sail for American ports from foreign points are none too stringent, but it seems advisable to relax their execution in the case of passengers from places where the Oriental plague is prevailing or is believed to exist. This is the view taken by Surgeon-General Wyman, of the Marine-Hospital Service. In certain additional quarantine regulations issued by him he takes the ground that vaccination of a person exposed to the plague increases his risk of taking the disease, by virtue of the little traumatism attendant upon the operation. Moreover, he says, the fever and the swollen glands that often follow vaccination may prove confusing when it comes to the question of making a diagnosis in a case that it is suspected may be one of plague.

Therefore, vaccination is to be postponed until the ship reaches her destination, and even then "suspects" are not to be vaccinated until their term of detention is over. There can be no doubt that Dr. Wyman is perfectly correct, and this precaution of his, which, so far as we know, has not occurred to anybody else in official life, is a fresh evidence of his earnestness in protecting the public health.

AMBULANCE ACCIDENTS.

In the February number of our highly esteemed contemporary the *Canadian Journal of Medicine and Surgery* there appears an account, signed "T. H. M.," of a serious mishap to a New York ambulance wagon. The driver does not seem to have been especially at fault in the instance related, but the writer goes on to deprecate the practice of driving ambulance wagons at a breakneck speed, and we quite agree with him. It is wholly uncalled for and highly dangerous.

THE RELATION OF INFLUENZA TO BUBONIC PLAGUE.

Dr. J. M. Creed, in a letter to the *Australasian Medical Gazette* for December 20, 1899, suggests an investigation as to whether it is not possible that the bacilli of influenza and of bubonic plague may possibly own a common origin. He points out the remarkable symptoms held in common by the two diseases, and calls attention to the fact that early cases of plague are commonly diagnosticated as "pneumonia," instancing the cases at Vienna. The virulence of plague bacilli seems to depend upon their passage through rats, etc., and he suggests that careful laboratory researches be made to ascertain what would be the effect upon rats if they were inoculated with bacteria derived from well-marked cases of influenza. Enough attention has not been paid of late to the evolution of morbid germs, a doctrine which was brought forward some twenty years ago by several investigators, and which supposed the possibility of the acquisition of pathogenic characters by previously non-pathogenic germs, and also the modification and transition of the pathogenic properties of germs under the influence of a changed environment acting upon a large number of successive generations. It must not be forgotten that, speaking generally, a fortnight's cultivation of bacteria would correspond in the life history of the race to some thirty-three thousand years in the life of man. It is by no means inconceivable, therefore, that vast alterations in their properties might be effected by a change of environment.

ITEMS.

The Buffalo Academy of Medicine.—At the last regular meeting of the Section in Surgery, on Wednesday evening, the 7th inst., Dr. Frederic S. Dennis, of New York, read a paper in which the following subjects were presented for discussion: Tuberculous peritonitis; gastrostomy; acute appendicitis; and the cure of malignant diseases by surgical intervention.

A Clinical Lecture on Surgical Splinting will be given, with demonstrations, by Dr. Edward A. Tracy, of Boston, on Wednesday afternoon, February 14th, at 4.30, at the New York School of Clinical Medicine. Members of the medical profession are invited.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported for the two weeks ending February 3, 1900:

DISEASES.	Week ending Jan. 27.		Week ending Feb. 3.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	28	7	20	13
Scarlet fever	228	16	220	21
Cerebro-spinal meningitis	0	5	0	3
Measles	824	32	817	21
Diphtheria	285	53	322	55
Laryngeal diphtheria (croup)	28	8	13	8
Tuberculosis	223	156	237	144
Chicken-pox	41	0	43	0
Small-pox	3	0	2	0

Changes of Address.—Dr. O. S. Phelps, to the Phelps Medical and Surgical Sanatorium, Battle Creek, Michigan; Dr. D. De F. Cole, from Batavia, New York, to Caledonia, New York.

Measles at Fort Slocum.—It is said that an outbreak of measles has occurred at Fort Slocum, on David's Island, where about fifteen hundred recruits are awaiting transportation to Manila. It is to be hoped that the spread of the disease will not be extensive among the men.

The Society of Medical Jurisprudence.—At the next meeting, on Monday evening, February 12th, Dr. Hamilton Williams is to read a paper entitled The Coroner's Physician at Work.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from January 27 to February 3, 1900:*

The following changes and assignments of officers of the Medical Department are announced: De Niedeman, William F., Major and Surgeon, United States Volunteers, will report to the surgeon in charge, First Reserve Hospital, for duty; Turnbull, Wilfrid, Major and Surgeon, United States Volunteers, will report to the commanding officer, Fourth Cavalry, San Miguel de Mayumo, for duty, relieving Lynch, Charles, Captain and Assistant Surgeon, United States Army, who will proceed to Manila for duty; Bonar, R. M., Acting Assistant Surgeon, United States Army, will report to the commanding officer, Seventeenth Infantry, Bautista, for duty, relieving Schultze, Ernest C., Acting Assistant Surgeon, United States Army, who will proceed to Angeles for duty; Thornburgh, Herbert T., Acting Assistant Surgeon, United States Army, will proceed to Dagupan, relieving McLeave, Thomas, Acting Assistant Surgeon, United States Army, who will proceed to Bacoor for duty; McCord, Donald P., Acting Assistant Surgeon, United States Army, will proceed to Zamboanga for duty.

The following officers, having arrived at Manila on the transport *Thomas*, will report as indicated: Hoyt, Henry F., Major and Surgeon, United States Volunteers; Orr, John C., Pick, Henry, and Corlin, John, Acting Assistant Surgeons, United States Army, to the chief surgeon of the department.

The following officer, having arrived on the transport *Benmohr*, will report as indicated: Moses, C. H., Acting Assistant Surgeon, United States Army, to the chief surgeon of the department.

The following changes in the duties of officers of the Medical Department are ordered: PHILLIPS, JOHN L., Captain and Assistant Surgeon, will proceed to Fort Columbus, New York, for temporary duty, relieving KIMBALL, JAMES P., Major and Surgeon, United States Army, who will proceed to Omaha, Nebraska, for duty as chief surgeon of that department, to relieve KOERPER, EGON A., Lieutenant-Colonel and Deputy Surgeon-General, United States Army. Lieutenant-Colonel Koerper, upon being relieved, will proceed to his home to await retirement.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending January 20, 1900:*

AMES, H. E., Surgeon. Detached from duty in connection with the *Kearsarge* and ordered to duty on board that vessel.

BOYD, J. C., Medical Inspector. Commissioned as medical inspector from October 25, 1899.

SNYDER, J. J., Assistant Surgeon. Detached from the *New Orleans* and ordered to the *Isla de Cuba.*

WAGGENER, R., Pharmacist. Detached from the Pensacola Navy Yard and ordered to be examined at the Washington Navy Yard for retirement, thence home to await orders.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the United States Marine-Hospital Service for the Seven Days ending February 1, 1900:*

WERTENBAKER, C. P., Passed Assistant Surgeon. To proceed to Winston, North Carolina, for special temporary duty. To proceed to High Point, North Carolina, for special temporary duty.

NYDEGGER, J. A., Passed Assistant Surgeon. To proceed to Manila, Philippine Islands, and report to Passed Assistant Surgeon J. C. PERRY for duty.

TABB, S. R., Assistant Surgeon. Granted extension of leave of absence for seven days on account of sickness.

GRUBBS, S. B., Assistant Surgeon. To proceed to Marseilles, France, for temporary duty.

KAUFFMANN, H. B., Acting Assistant Surgeon. Granted leave of absence for thirty days, on account of sickness, from February 3, 1900.

Births, Marriages, and Deaths.

Born.

METZGER.—In Pittsburgh, on Saturday, January 13th, to Dr. and Mrs. J. A. Metzger, a daughter.

ROHAN.—In St. Louis, on Tuesday, January 16th, to Dr. and Mrs. Francis Eugene Rohan, a son.

SPRATLING.—In Yokohama, Japan, on Friday, December 8, 1899, to Dr. and Mrs. L. W. Spratling, a daughter.

STURGIS.—In St. Paul, on Tuesday, January 16th, to Dr. and Mrs. S. D. Sturgis, a daughter.

Married.

ALEXANDER—BIRDSONG.—In Bolton, Mississippi, on Thursday, January 25th, Dr. J. A. Alexander, United States Volunteers, and Miss Josie Birdsong.

BROWN—COOPER.—In Shrewsbury, New Jersey, on Tuesday, February 6th, Mr. James M. Brown and Miss Rebecca Patterson Cooper, daughter of Dr. James E. Cooper.

CHANDLER—SCHULTZE.—In Syracuse, New York, on Monday, January 1st, Dr. George F. Chandler, of New York, and Miss Martha M. Schultze.

HIGDON—SEXTON.—In Hazlehurst, Mississippi, on Monday, January 15th, Dr. Robert E. Higdon, of Fort Adams, Mississippi, and Miss May Helen Sexton.

MCCLEARY—FREEL.—In Brooklyn, on Wednesday, January 31st, Dr. Thomas F. McCleary and Miss Philomena Freel.

PITCHFORD — MAGRUDER. — In Woodville, Mississippi, on Wednesday, January 17th, Mr. Sterling G. Pitchford and Miss Lizzie Hunnicut Magruder, daughter of Dr. L. W. Magruder.

RAINOLD—BUDDIG.—In New Orleans, on Wednesday, January 24th, Dr. Mozart W. Rainold and Miss Anna Buddig.

Died.

CARSON.—In New Orleans, on Saturday, February 3d, Dr. William H. Carson, aged eighty-four years.

CUSHMAN.—In Washington, Louisiana, on Saturday, February 3d, Dr. Edwin W. Cushman, aged forty-six years.

DICKINSON.—In Washington, on Wednesday, January 24th, Syria Elana Dickinson, wife of Dr. Dwight Dickinson, United States Navy.

FITZSIMMONS.—In Brooklyn, on Sunday, February 4th, Dr. T. Dana Fitzsimmons.

HILLMANTEL.—In Milwaukee, on Tuesday, November 7, 1899, Dr. J. L. Hillmantel, in the thirty-sixth year of his age.

METCALFE.—In Brooklyn, on Thursday, February 1st, Dr. Ernest G. Metcalfe, aged forty-nine years.

OLIVIER.—In Morgan City, Louisiana, on Friday, January 26th, Dr. M. G. Olivier, in the thirty-seventh year of his age.

STORCK.—In New Orleans, on Thursday, February 1st, Annie S. Storck, wife of Dr. Jacob A. Storck.

Letters to the Editor.

SURGEONS WANTED IN THE PHILIPPINES.

WAR DEPARTMENT, SURGEON-GENERAL'S OFFICE,
WASHINGTON, *February 6, 1900.*

To the Editor of the New York Medical Journal:

SIR: The medical department of the army is now in need of some additional assistance in the Philippines and it is desired that candidates for appointment as acting assistant surgeons make application to the surgeon-general of the army. Applicants must be graduates of reputable medical colleges who have had practical experience, since graduation, in hospitals or in private practice. Candidates between the ages of twenty-five and thirty-five are preferred. Candidates should forward with their application one or more letters from well-known professional men, giving testimony as to their character and qualifications. Appointments will not be made through political influence, and letters designed to produce political effect will injure rather than benefit the applicant. All applicants will be examined as to their physical and professional qualifications for service in the Philippines before they are given a contract. Contracts are made for one year, with the understanding that the approved candidate will remain in service for a longer period if his services are required. You will confer a favor upon the medical department by publishing this notice.

George M. Sternberg,
Surgeon-General, United States Army.

VOMITING FROM HEROINE.

119 East One Hundred and Twenty-eighth Street,
New York, *February 3, 1900.*

To the Editor of the New York Medical Journal:

Sir: Dr. Thomson's letter, detailing two of his cases in which severe vomiting was induced by, or at any rate followed, the administration of heroine, was read by me with peculiar interest, as I have had two such cases, which at the time puzzled me considerably, in my own practice. I have not used heroine very extensively, having administered it in all to about twenty patients, and when the emesis occurred in my first case I did not give the matter much thought, having attributed it to either idiosyncrasy or a peculiar susceptibility of my patient's stomach. But the history of the second case is so unmistakably clear that there is no room left for doubt that the vomiting was due to the heroine exclusively, and was not a mere coincidence. We physicians are too prone to mistake *post hoc* for *propter hoc,* but I am sure it is not the case in this instance. My two cases were, briefly, as follows:

Case I.—Miss Emma ——, of Swiss descent, member of a once large family, in which tuberculosis has been ravaging for the last ten or twelve years. Every two or three years a member of the family is carried off by either pulmonary or meningeal tuberculosis. She had taken codeine for many months, to allay her cough, with satisfactory results, but, as the codeine seemed to lose its effect, in the small doses in which I prescribed it, I ordered heroine hydrochloride, in doses of a sixth of a grain three times a day in conjunction with other mild sedatives. She bore the first three doses well, feeling quite relieved and enjoying a good night's rest. On the next morning, about fifteen minutes after taking the first dose, she had quite a severe attack of vomiting. She took three more doses during that and the following day, and she vomited after two of them. When I called the next time, I changed back to codeine, and she has had no attack or emesis since.

Case II.—Mr. Ch. D., thirty-six years old, born in this country, has been a sufferer from chronic rheumatism for many years. His hip joints are completely ankylosed, and he walks but with difficulty on crutches. About four weeks ago symptoms of pulmonary and laryngeal tuberculosis began to show themselves, and the cough was so severe, so incessant, and so painful that relief by sedatives was imperatively demanded. Codeine and morphine, a fourth of a grain of the former and an eighth of a grain of the latter, were prescribed with good effect, so far as his cough was concerned. But when he became invalided he suffered considerably from constipation, and that condition became aggravated after a few doses of the opium alkaloids. I then prescribed heroine in one-sixth-grain doses with elixir of terpine hydrate, ammonium chloride, etc. After the second dose he felt an inclination to vomit, but did not vomit. After the third dose he had a severe attack, which left him in an exhausted condition; in a few minutes he had a severe chill. Two more doses were taken with the same disagreeable results. The vomiting and nausea after the last dose continued for twelve hours, during eructations; he had four attacks. He returned to the first medicine, and that produced no untoward effects of any kind. The man had taken so much medicine during his lifetime that his stomach, he says, can stand anything; but that medicine, he thought, must have been something extraordinarily powerful.

In conclusion, I wish to make a suggestion: Heroine being a derivative of morphine, is it not just possible that the emesis in my cases and in the others reported was not due to the heroine *per se,* but to some chemical change which transformed the heroine (= diacetyl morphine) into apomorphine or a body similar to it? I have not had the time to investigate the subject, and the foregoing is simply an hypothesis. But the hypothesis seems to me quite plausible, and I believe that investigation along that line would not remain fruitless. I shall undertake the task at the first opportunity.

William J. Robinson, Ph. G., M. D.

Pith of Current Literature.

The Significance of Pinhole Contraction of the Pupil.—Dr. William H. Robey (*Boston Medical and Surgical Journal,* December 21, 1899) related recently to the Clinical Club the following case of a four-year-old child brought to his clinic for examination: The father said that the child was sitting on the kitchen table about seven o'clock on the previous evening when he suddenly fell, having apparently lost his balance, struck his head on the floor, and became unconscious; he vomited at the time and had been dull and stupid ever since. The father held in his arms a pale, limp, unconscious child. The history, as given by the parent, suggested some cerebral condition, and with that in mind he first examined the eyes, and found that the pupils were contracted to pinhole size, equal, and unaffected by light. Then the patellar reflexes were tried and proved to be normal, but in tapping the knee the child regained consciousness, sat up, and looked around; the pupils instantly dilated to their normal size and he found, to his surprise, that a healthy, sleeping child had merely been wakened. The man had not made it clear that the child had eaten his breakfast and that he had brought him to the hospital because he feared some possible obscure injury as the result of the blow.

Dr. Robey recently saw another child, whose parents gave almost the same history of a fall. He was apparently asleep at the time of the examination and the pupils were contracted to pinhole size. In this case the reflexes were tried and the child was completely examined without waking him. When he was wakened the pupils instantly dilated.

Since the first experience Dr. Robey has examined twenty-two normal sleeping children: in all the pupils have been pinhole and have dilated instantly on waking. In several instances the children were examined and handled exactly as if they had been awake without arousing them. For obvious reasons the eyes of children have been examined. In children who have been pinched and stirred up without regaining consciousness the pupils have partially dilated under the sensory stimulation.

Dr. Robey remarks that in the 1878 edition of his *Physiology* Foster says: "The pupil is contracted when we accommodate for near objects, when the retina is stimulated, as when light falls on the retina, the brighter the light the greater the contraction. The pupil is also contracted when the eyeball is turned inward, when the aqueous humor is deficient, in the early stages of poisoning by chloroform, alcohol, etc., and in nearly all stages of poisoning by morphine, calabar bean, and some other drugs." In the 1880 edition he mentions all of these causes and adds, "in deep slumber."

The twelfth edition of Kirkes's *Handbook of Physiology* (1888) mentions all of the above causes save deep slumber. The *American Text-book of Physiology* says: "In sleep, though the eyes are protected from light, the pupils are strongly contracted, but dilate on stimulation of the sensory nerves, even though the stimulation be insufficient to rouse the sleeper."

The drugs, says the author, which cause contraction of the pupils are physostigmine, nicotine, and pilocarpine, by action locally or through the circulation; cocaine locally causes transient contraction followed by wide dilatation; conine applied locally contracts through conjunctival irritation. The most important drugs causing contraction of the pupil are opium and alcohol, the latter being less marked in its action than the former.

The cerebral diseases with uniformly contracted pupils are few and the contraction is not a constant symptom. Meiosis occurs in syncope. In the unconscious state caused by a blow, with symptoms of shock producing a condition sometimes spoken of as "concussion," the pupils usually react to light.

When an adult is handled incident to examination, says Dr. Robey, if he is merely sleeping, the manipulation will waken him, but fatigued children sleep soundly and are sometimes aroused only after considerable effort, but, once awake, they generally remain so, differing from the drowsy child whose pupils are contracted by some drug. It seems to be of some importance to remember the fact that the pupils are strongly contracted during sleep and that they instantly dilate on regaining consciousness from healthy slumber.

Conservative Measures in Enlarged Prostate.—Dr. James H. Dunn (*Journal of the American Medical Association,* December 30, 1899) says that in not a few prostatics the hypertrophic growth is quite insignificant as compared with other factors. Indeed, there are subjects without distinct prostatic hypertrophy whose arteries are sclerotic, whose micturition is feeble and slow, with nocturnal irritability and a great susceptibility to pelvic congestions and prostatic engorgements. No operative interference can much, if at all, benefit such sufferers.

There are prostatics who, by a little judicious aid and advice, pass through years of comfortable life, with one or two or a few retentions. He recalls one relieved for two years by a single aspiration of the bladder. Another, carefully catheterized for two weeks, has been getting on without accident or serious discomfort for four years. Scores of cases more or less under observation from three to fifteen years have had their ups and downs after indiscretions, blunders, and criminal carelessness, of their own and their at-random-sought advisers, some with periods of intense suffering, it is true, but most of them with considerable periods of comparative comfort. Occasionally one drops out directly as the result of his urinary disease, after from five to twenty years' struggle, but how rarely it is we see this except as the result of the grossest transgressions of the simplest laws of sense and surgery—a chronic retention not relieved aseptically, slowly and interruptedly, but septically and suddenly, the oversight for years of complicating stone, the nagging of the bladder by overdistention, septic and bungling catheterization by faulty instruments in ignorant hands. The average prostatic is indiscreet in eating, in drinking, careless of exposures and of the causes of congestion, negligent of bowels and bladder, filthy in catheterization, and promiscuous in his advisers. A charming, intelligent, and wealthy old gentleman, with the minor disturbances of the prostate, chiefly some frequency at certain times of the day, who never had to use the catheter nor suffered any pain, but who had casts and albumin in his urine, kept along without a real disaster for five years under occasional advice—chiefly hygienic—until in an evil moment he spoke of the matter to a man who was giving him massage occasionally, as a luxury. The officious masseur advised electricity, and introduced an electrode into the urethra. Cystitis and renal trouble promptly began. We were never able to get the urine quite normal or aseptic again, and after two years the old gentleman succumbed to renal disease and urinary infection.

"Kubisgari," a Tropical Disease?—Some of our medical officers interested specially in tropical diseases may be glad to have their attention called to the following article from the *Journal of Tropical Medicine* for December, 1899. The anonymous writer says:

"Since P. Lucas-Championnière described this disease in the *Journal de médecine,* May 25, 1897, no further light has been thrown upon the ailment he describes. It is unlikely that the disease is confined to the district of Japan where he first found it, and by this time other observers may have been able to refute or confirm Lucas-Championnière's observations, in either Japan itself or in other countries.

"The subject was referred to in the *British Medical Journal* of August 7, 1897, but never since has the question been dealt with in any journal.

"The disease seems to occur only during the hot season, from May to October, and affects the agricultural population of the villages, more particularly those persons who labor much with horses and cattle. Its geographical distribution is very limited, and it seems to exist only in certain parts of Aomori and Twate. It affects whole families, disappearing in winter to reappear in spring, affecting the same individuals year after year for as many as thirty years. The character of the disease is intermittent, showing daily attacks more or less short, and which continue unless the patient gives up his work. They may disappear for a few days and then return, seeming to affect the individual when exhausted or hungry, or after having partaken of a dish called mochi, which is prepared with a glutinous kind of rice. The symptoms are weakness of vision, objects becoming cloudy or dancing before the eyes. This is followed by diplopia, which is a very usual symptom, and photopsia, which is not so common. The examination of the eye shows no change: the pupil reacts to light and accommodation; the ocular movements are unimpaired. The only objective sign which has been discovered in the eyes is some pupillary hyperæmia. These symptoms are accompanied by muscular paresis, more particularly of the upper eyelids and the muscles of the back of the neck. Ptosis or blepharoptosis, which accompanies the visual derangement, is very marked. Paralysis of the neck muscles allows the head to fall downward and forward, an effect which has given rise to the name 'kubisgari,' which means one whose head has fallen. One writer states that he has frequently noticed the peasants' attempt to remedy this condition by a band passing under the chin and attached to another passing down the back to the waist belt. There may be also paralysis of the upper limbs with impossibility to close the hand, or of the lower limbs, and accompanied by titubation, ataxy, and loss of the power of walking, or paralysis of the back muscles, so that the patient is bent double, and unable to lift himself up. There may be paralysis of the tongue, which interferes with speech and other muscles of articulation, causing absolute mutism and inability to open the mouth. In the intervals between the attacks there is no morbid sign if the case is not severe. If it be more marked, there may be a certain amount of ptosis and paralysis of the neck in the intervals. It is considered by some, as Miura, that kubisgari is similar to paralytic vertigo observed by Gerlier in the neighborhood of Geneva. It is also quite possible to mistake 'cervical neurasthenia' or 'bulbar paralysis without lesion' for this condition. It is suggested that the disease is miasmatic, and certainly its method of recurring in attacks is striking, but there is no enlargement of the spleen, and the blood has been found free from organisms. The fact that it affects those who work hard and among horses is important, and there is evidently some pronounced connection between the disease and stable labor. It seems also that in rural Japan stables are part of the dwellings, and flies, etc., pass freely from stable refuse to domestic food. What the connection between the two may be is still an open question. Various methods of treatment, such as leeching, blistering, administration of strychnine, iodide, mercury, quinine, etc., have all been tried without effect. Iodide of potassium and arsenic appear to have done good in some cases.

"It is important to ascertain whether or no this is a specific ailment and if it is right to assign it a place in the nomenclature of tropical diseases."

The Therapeutic Use of Glycerophosphate of Sodium.—Dr. T. Harris (*Lancet*, December 16, 1899) recently made a communication to the Manchester Therapeutical Society on the Use of Glycerophosphate of sodium. He said that he had employed this drug very largely during the last three or four years, and although he was unable to bear out all that had been said by others in its favor he believed that it had considerable value in certain conditions. From their chemical constitution and their relation to lecithin there seemed a probability on *a priori* grounds of the glycerophosphates acting as food to the nervous system. In 1894 Professor Robin published his observations on the physiological action and therapeutic uses of the glycerophosphates. He considered that they favored assimilation and metabolism, especially acting on the sulphur metabolism, and exerting a sparing influence on the combined phosphates. It was impossible to believe that the glycerophosphates could be useful in all of the large number of diseases in which beneficial results had been claimed by the employment of these drugs, but such diseases as neurasthenia, Addison's disease, etc., seemed likely to be favorably influenced by them. Dr. Harris had used only the glycerophosphate of sodium and not the other compounds. This could be obtained either as a seventy-five-per-cent. solution, which was jellylike, or as a fifty-per-cent. solution, which was liquid. The dose was from fifteen to forty minims three times daily of the weaker solution. Given in a mixture with tincture of orange and chloroform water it was quite palatable. Dr. Harris had used the drug chiefly in nervous affections, neurasthenia, and hysteria and functional affections, but he had also tried it in diabetes, etc. In most cases of neurasthenia it had failed, but some patients had been benefited by it. Very few cases of true hysteria had been favorably influenced, especially long-standing ones. The best results had been obtained in the treatment of nervous exhaustion from overwork, in which it had often had really good effects. Dr. R. B. Wild had used glycerophosphate of sodium on himself and others for weakness following influenza and for nervous exhaustion from overwork with apparently distinct advantage. It seemed to him that the calcium salt might be even more beneficial than the sodium salt.

Comparative Death-rates of Abstainers and Drinkers.—According to the *Indian Medical Record* for December 20, 1899, of 4,234 deaths collected by the British Medical Association, divided for reference into five classes—namely, *a*, total abstainers; *b*, habitually temperate; *c*, careless drinkers; *d*, free drinkers; *e*, habitual drunkards—the ages of death of those in each class were registered, together with the cause and the average of death for each class computed with the following result: Total abstainers lived on an average 51.22 years. Habitually temperate lived on an average 62.13 years. Careless drinkers lived on an average 59.67 years. Free drinkers lived on an average 57.59 years. Habitual drunkards lived on an average 52.03 years. This corresponds to the well-known ratio of mortality in the deadly west coast of Africa—where it is held that temperate persons have the lowest death-rate, tipplers the next lowest, while the death-rate of total abstainers is greater than either.

The Influence of Lime upon Malaria.—Grillet (*Bulletin de l'Académie de médecine*, 1899, No. 26; *Annali di farmacologia e chimica*, September and October, 1899), in a communication recently presented to the Academy of Medicine of Paris, arrived at the following conclusions: 1. Those districts whose soil is very rich in lime are almost free from malaria. 2. Rivers which flow in a lime channel are free from it throughout their course. 3. It is possible to attain a relative immunity in malarial localities by manuring the soil with a large quantity of lime. Dr. Laveran has been charged by the academy with the verification of these conclusions.

Animal Carriers of Plague.—Dr. Sambon, of Naples, lecturer to the London School of Tropical Medicine (*Journal of Tropical Medicine*, December, 1899), says that in studying the history of plague in the light of modern investigation, and especially in connection with the natural history of the muridæ, he has been led to assume that the true endemic region of plague is within the country of Tibet, from which it occasionally spreads into China, India, and Persia.

From what we know of other diseases, he considers it reasonable to infer that the *Bacillus pestis* is not the usual parasite of rats, but of some other animal whose habitat is limited to Tibet, and which has acquired a certain immunity (symbiosis) against this deadly microbe. In this respect it would be interesting to know whether that specially Tibetan animal, the yak, enjoys any immunity from plague.

Although the rat plays so important a rôle in the dissemination of plague, yet the disease would not spread so widely and so rapidly if it were not for the agency of man. It is the black rat (*Mus rattus*) which is more especially the plague rat, because it is the great traveler, the true ship rat.

While recognizing fully the paramount importance of the rat, we must not forget that other animals, such as mice, squirrels, monkeys, dogs, cats, and man himself, may also become vehicles of the disease.

Fleas, bugs, and flies are likewise very important agents in the dissemination of plague. It is probably through fleas that the disease is most frequently conveyed from rat to rat, from rat to man, and from man to man. The fleas of rats are peculiar to their hosts, but from personal experience Dr. Sambon knows that under special circumstances they will bite man. Indeed, it is not our common house flea (*Pulex irritans*), but the flea of dogs and cats (*Pulex serraticeps*), that is our greatest tormentor. When a rat dies and gets stiff and cold, the fleas abandon its carcass and crawl about on the floor until they are able to jump on to some other warm-blooded creature. In plague, the greater frequency of the enlargement of the femoral and groin glands, as compared with those of the arm, axilla, and neck, is in perfect accordance with the regions most frequently bitten by fleas.

In reference to fleas as carriers of plague it is interesting to notice that besmearing the body with oil is a very old and much valued prophylactic. Tully, in his history of the plague which broke out in 1813 in the Ionian Islands, speaking of those who were employed in attending the sick and burying the dead, says: "From the repeated use of oil (which was their sole preservative) their clothes were in a constant state of moisture, and of those who persevered steadily in this practice, few were attacked. But many of these persons subsequently fell victims to their imprudence, by setting at naught the hourly advice they received, seeking comfort by substituting clean clothing for those of their well-oiled dresses, which had so long defended them against danger."

Spermatorrhœa and Prostatorrhœa probably Caused by Tænia Solium.—At the October meeting of the Genito-urinary Section of the New York Academy of Medicine, Dr. Lapowski (*Journal of Cutaneous and Genito-urinary Diseases*, December, 1899) reported what was to the best of his knowledge the first recorded case of spermatorrhœa and prostatorrhœa due to tænia solium. The patient, twenty-eight years old, came to him about the 1st of September with a constant discharge, milky and sticky, from his meatus. He had suffered from it for eighteen months. He gave a history of soft chancre several years ago and six or seven attacks of gonorrhœa during his life, the first attack when he was eighteen years old, the last attack six or eight months ago. Injections and internal medication were used during the gonorrhœal attacks. For the last eighteen months he had noticed a discharge coming from the penis. He did not pay any attention to it for some time; but when the discharge appeared both day and night he consulted physicians, who ascribed his sufferings to the gonorrhœa. All possible known remedies were tried and yet on opening the meatus he always saw some milky discharge. The physicians he consulted treated him for gonorrhœa because gonococci were found in his discharge. The gonorrhœal discharge was stopped, but the milky fluid always appeared. When he had the gonorrhœa he could not see the milky discharge, but when it stopped the discharge always reappeared. When the speaker first saw him there was no gonorrhœal discharge at all; the meatus was perfectly clean; no redness, no swelling, no pain. The first and third portions of urine contained small shreds, the second portion was perfectly clear. The microscope revealed in the shreds gonococci (Claplewski's and Weigert's methods). The speaker said he could never see the discharge coming out from the patient's meatus. It always seemed a milky fluid. On examination he found that it contained prostatic fluid and spermatozooids. He examined the discharge nine times and six times found prostatic fluid alone without spermatozooids and three times both. To every method of treatment proposed the patient always said: "Doctor, it was done to me." The prostate was painless, with nothing abnormal to the touch in the rectum. Dr. Lapowski succeeded twice in pressing out seminal fluid with spermatozooids and the seminal vesicles seemed to be normal to the touch. One day the patient came to him and during the examination he saw the discharge oozing out from the urethra. The microscope revealed prostatic fluid and spermatozooids. He washed out the anterior and posterior urethra. He put his finger into the rectum and tried to reach the prostate, but failed to reach the seminal vesicles. He did not find either pus in the pressed-out fluid or spermatozooids, only amyloid bodies, and upon the addition of a one-per-cent. solution of phosphate of ammonium, Böttcher's crystals. As he took out his finger from the rectum it was covered with a mucoid substance. Then he put the mucus under a microscope and to his astonishment found eggs of tænia solium. There was not the slightest symptom and the patient never complained of anything which could suggest the presence of tænia. Afterward, when he found the eggs, he questioned him more closely, but could not detect any subjective or objective symptoms. He directed the patient to bring him the next day the first portion of the fæces. The microscope showed a great number of eggs. He gave him pelletierin. The patient brought him two days after the tænia, which was presented by Dr. Lapowski. Unfortunately, the head remained. That had been done on the 15th of September, from which time he saw him ten or twelve times. His meatus was perfectly dry, and the discharge entirely stopped. There were no spermatozooids or prostatic elements in the urine.

The Treatment of Typhoid Perforation of the Bowel.—Dr. W. W. Keen (*Journal of the American Medical Association*, January 20th), in a paper read in the discussion on Typhoid Fever at the meeting of the New York State Medical Association in October, 1899, in which he records a hundred and fifty-eight cases in tabular form, says that his views on the operative treatment of typhoid perforation may be summarized as follows: 1. The surgeon should be called in consultation the moment that any abdominal symptoms indicative of possible perforation are observed. 2. If it is possible to determine the existence of the preperforative stage, exploratory operation should be done under cocaine anæsthesia before perforation, shock, and sepsis have occurred. 3. After perforation has occurred, operation should be done at the earliest possible moment, provided: 4. That we wait till the primary shock, if any is present, has subsided. 5. In a case of suspected but doubtful perforation, a small exploratory opening should be made under cocaine to determine the existence of a perforation, and if hospital facilities for a blood count and for immediate bacteriological observation exist, their aid should be invoked. 6. The operation should be done quickly, but thoroughly and in accordance with the technique already indicated. 7. The profession at large must be aroused to the possibility of a cure in nearly, if not quite, one third of the cases of perforation, provided speedy surgical aid is invoked.

Proceedings of Societies.

SOCIETY OF THE ALUMNI OF BELLEVUE HOSPITAL.

Meeting of November 1, 1899.

The President, Dr. Charles E. Quimby, in the Chair.

(Continued from page 105.)

Individual Methods of Treatment of Rheumatism.—Dr. A. A. Smith spoke on this topic. He said that in taking up the subject of the treatment of rheumatism one would naturally think first of the various forms of rheumatism. Speaking of acute articular rheumatism first, he said that the patient should be placed in bed, if not already there. He was a firm believer in the protective benefits of proper clothing; a rheumatic individual should be completely clothed in a woolen garment, and should be placed between woolen covers to sleep. At first he had looked upon this as a fad, but he had gradually come to believe that this was a very decided protective. As soon as possible the patient should be placed under the influence of some salicyl compound, preferably the salicylate of sodium. He was in the habit of giving fifteen grains every two hours until the patient complained of nausea or the drug had markedly controlled the pain and, to some extent, the temperature. The average patient would object after having taken a hundred to a hundred and twenty grains, but by using a little care much of the unpleasant ill effect on the gastric mucous membrane could be avoided. He did not fully sympathize with the opinions which he had often heard expressed regarding the marked depressing effects of the salicyl compounds on the circulation. His own belief was that it required an enormous amount of such a compound to produce this effect, although it was quite true that if the drug produced vomiting or nausea there would be a circulatory depression. Usually, within thirty-six to forty-eight hours the patient would be decidedly relieved, and he would then give ten-grain doses at longer intervals. He was entirely in accord with those who believe the treatment by the salicyl compounds to be more liable to be followed by recurrences than other methods of treatment, though one of the common mistakes was that the remedy was not continued sufficiently long. It was not necessary to continue it in large doses, but it should be kept up in moderate doses for from five to ten days. The recurrences seemed to him often to be the result of allowing the patient to get up too soon. He invariably gave an alkali, preferring the bicarbonate of sodium. The bicarbonate of potassium, when given in connection with the salicylates, was more likely to be accompanied by gastric irritability. He did not continue the salicylates, however, nearly as long as the alkalies. During the first thirty-six or forty-eight hours the bicarbonate of sodium was given in doses of half a drachm every two hours. The irritability of the stomach could be controlled by using an effervescent draught, made by mixing citric acid with the medicine at the time of taking it. This was the old Bellevue-Hospital mixture. By adopting the precautions mentioned, fifteen-grain doses of the salicylate of sodium could be continued rather longer, if necessary—say fifteen grains for perhaps twelve or fifteen doses. He also insisted upon using the salicylate of sodium made from the oil of wintergreen instead of that made from the refining of coal tar. In passing, he would say that the oil of wintergreen itself was useful, given in doses of ten minims every two hours for the acute manifestations. It was best given in the form of the globules found on the market. It had been claimed by some that oil of wintergreen was not so likely to be accompanied by delirium or ringing in the ears, yet perhaps the most active nervous disturbance of this kind that he had seen had been with the oil of wintergreen. However, this occurred very seldom, and was easily controlled by stopping the drug and administering a dose of some alcoholic, such as whisky. He used oil of wintergreen on the same plan as the salicylate of sodium, giving it every two hours for thirty-six or forty-eight hours, and then lengthening the interval, and often diminishing the dose. If the manifestations of the disease were fairly active he would probably continue the dose of ten minims, only lengthening the interval. This would be kept up for several days after all pain and elevation of temperature had disappeared. The alkali was given in the same way, but was not continued after the first forty-eight hours at the same rate, being administered after this time in accordance with the reaction of the urine, the effort being to keep it alkaline. He had also used, with satisfactory results, salophen, in ten-grain doses every two hours for the first twenty-four or thirty-six hours, and then in the same doses at longer intervals. He combined the alkali with this as with the other forms of salicylates, for he thoroughly believed in the beneficial effects of alkalies in the treatment of rheumatism.

He had not obtained satisfactory results from the use of salol in the treatment of the acute manifestations, but he frequently made use of it for the subacute condition left after the more acute attack. He was such a firm believer in the connection between the condition of intestinal digestion and the development of rheumatism that he always accompanied the treatment with the giving of cathartics, and he liked particularly for this purpose Rochelle salts. It belonged to the family of alkalies, and acted, therefore, not only as an alkali but as a diuretic and cathartic. At the time that salicin had been advocated so vigorously he had had great hope of getting better results. He had given it in doses of a drachm, every two hours, but had never seen any benefit from it in the acute manifestations. It did not produce gastric disturbance; it was a capital tonic and might be given after the acute manifestations had subsided. It seemed to him to have the power of preventing relapses. He ordinarily gave only fifteen or twenty grains every three hours with the object of preventing recurrences.

He had used lactophenin with a fair degree of satisfaction in a certain class of cases—*i. e.*, that in which the acute manifestations had been controlled. In doses of ten grains every six hours it had seemed to prevent recurrences, but it was not satisfactory in the treatment of the acute manifestations. After all, he had used invariably, at the beginning of an acute attack, the salicylate of sodium, for, so far as he knew, it was the most reliable agent for controlling the elevation of temperature and the pain in the joints in the early stage of acute articular rheumatism, when given in conjunction with alkalies.

Regarding external applications, Dr. Smith said that he had first begun their use when a medical student, but had soon discarded them because the practice had been discountenanced by the visiting physicians at the hospital. He had, however, returned to them, and now believed that the old application of cotton batting with oil silk, cumbersome as it was, had a good effect simply in relieving pain. He had never found any special benefit from the combination of opium in the form of the tincture of opium, with any external application, although fully aware that this was a strictly heterodox statement. Fuller's application of an alkali with opium added he did not believe to be any more beneficial than the alkali without the opium. He had found that an application of a saturated solution of bicarbonate of soda to a joint was decidedly advantageous. The combination of oil of wintergreen with sweet oil, as used in the hospital, as an application to painful rheumatic joints had, in a certain proportion of cases, given relief. He had even applied the oil of wintergreen in its purity to the joint, but it was too expensive for such use. He had certainly known patients to be relieved from an application of the pure oil of wintergreen as well as from the combination with olive oil. Both heat and cold had served him well in relieving the pain accompanying acute rheumatism. He was unable to give the indications for using these two applications; he had often alternated them or gone from one to the other. Where the wrist joints were swollen very satisfactory results were secured by the application of a splint. This was sometimes true in rheumatism affecting the joints of the hand and the elbow joints. He saw no advantage, however, from using a water-glass splint for this purpose.

In connection with acute articular rheumatism he wished to mention still another remedy that had proved useful. In cases showing a tendency to slight but persistent recurrence he had observed very decided relief from the continued use of tincture of chloride of iron, not only in relieving the anæmia, but in relieving the wandering pains so often noted. It was more particularly useful in subjects under fifteen years of age. In another class of cases showing the tendency to recurrence, persons who were thin and anæmic, he had seen good results from the administration of cod-liver oil. It seemed to protect such patients very decidedly against the development of more acute attacks. In his opinion, the iodides were applicable only to the older subjects, quite likely owing to the tendency to the increase of connective tissue in people of this age. The administration of this remedy often seemed to be a protection against recurrences.

The Disease as it appears in Children as indicating its Dependence Upon Subjective or Objective Causes.—Dr. J. E. WINTERS took up this subject, basing his remarks on the following cases, which were presented.

The first was a baby of three months with a mitral systolic murmur conveyed to the left and heard behind, and with an entire absence of family or personal history of rheumatism. The second was a baby of fourteen months with an entire absence of a personal history of rheumatism, but having a mitral regurgitation. The third was a brother of the second child, eight years old, possessing a very extensive mitral lesion with dilatation and hypertrophy of the heart, and with a secondary dilatation occurring last June. At that time the boy had been anasarcous, and, according to the history, it had followed scarlatina. The fourth case, also in the same family, had been brought to him a week ago with a little pain in one knee. Two days later he had developed slight choreic symptoms, and these had increased. Three days ago a slight systolic blowing murmur had been heard for the first time.

At a meeting of the American Pædiatric Society some years ago, Dr. Winters said, the statement had been made by one member that he recognized as rheumatic cases in chorea those having pain, swelling, and redness at the joints. The speaker said that pain, swelling, and redness at the joints were exceedingly rare in the rheumatism of childhood. According to the gentleman referred to, rheumatism occurred in about eighteen per cent. of the case of chorea. According to the records at the Demilt Dispensary, rheumatism occurred in eighty-five per cent. of the choreic cases, but at this dispensary the physicians recognized as a rheumatic manifestation in the child urticaria, an acute follicular amygdalitis, if repeated, torticollis, a little stiffness in the hamstring tendons, a persistent soreness and tenderness in the back, and all reported soreness of the muscles. This was because they had repeatedly seen cases of this nature produce subsequently acute rheumatism. It was just as common to see endocarditis after these rheumatic conditions as after an acute articular rheumatism —indeed, he was inclined to think it was noted more frequently. There was no way of avoiding these cardiac lesions except by absolute rest in bed, yet this was impossible in dispensary practice, and it was for this reason that so many of these cardiac cases were seen at the dispensary. In the autumn of 1896 he had been asked to see a little boy with severe urticaria; in February he had had a second attack; in May they had gone to their country house, the boy being separated from the mother because of the sister being ill with scarlatina. The boy had immediately had severe chorea, but without evidence of cardiac disease. The next autumn the boy had been exposed to dampness and wet, and this had been followed by two attacks of slight articular rheumatism. Since then he had had chorea two or three times. Again, he had been asked at one time to see a young lady who had suffered a good deal from pain in one ankle. There had been at no time any other rheumatic manifestations, yet she had developed a cardiac lesion. It was very common to find inflammation of the hamstring tendons accompanied by endocarditis without any other history of rheumatism. It was very important to recognize these cases as distinctly rheumatic, and give them the same management as if they were suffering from acute, dangerous rheumatic arthritis.

Regarding the nature of acute articular rheumatism, the speaker said that he believed acute articular rheumatism, both in the child and in the adult, was an infection, and that it came from the digestive organs. He had never seen a case of acute rheumatism at any age that was not associated with indigestion, nor had he known a case of rheumatism to show any improvement so long as the tongue remained coated. If the tongue remained persistently coated the antirrheumatic remedies should be discontinued and all the physician's efforts should be devoted to clearing the tongue before resuming the antirrheumatic treatment.

(*To be concluded.*)

Book Notices.

A Manual of Surgical Treatment. By W. WATSON CHEYNE, M. B., F. R. C. S., F. R. S., Professor of Surgery in King's College, London, etc., and F. F. BURGHARD, M. D. and M. S. Lond., F. R. C. S., Teacher of Practical Surgery in King's College, London, etc. In Six Volumes. Volume II. The Treatment of the Surgical Affections of the Tissues, including the Skin and Subcutaneous Tissues, the Nails, the Lymphatic Vessels and Glands, the Fasciæ, Bursæ, Muscles, Tendons and Tendon Sheaths, Nerves, Veins, and Arteries. Deformities. Philadelphia and New York: Lea Brothers & Co., 1900. Pp. xix–382. [Price, $4.]

IN volume ii the authors have adopted the same general plan followed in the first volume, and have confined their efforts chiefly to presenting their readers with a clear and succinct treatise on the treatment of the various surgical affections of the tissues, including the skin and subcutaneous tissues, the nails, lymphatic vessels and glands, the fasciæ, bursæ, muscles, tendons and their sheaths, nerves, veins, and arteries, and of deformities. The latter are restricted to the abnormal conditions of the extremities, of both congenital and traumatic origin, usually embraced under the head of orthopædic surgery.

We find but little to dissent from. We think the treatment advised for the correction of cicatricial contractures after burns, although meeting with our approval, is too briefly dismissed. The authors have cited but a single example, which would hardly be of material benefit to their readers in overcoming the varied conditions so often met with. Subcutaneous operations also are so rapidly growing into disfavor with the surgeon of the present day that we are compelled to advise the open method wherever it is feasible. We therefore would condemn the tenotomy knife in favor of the scalpel in dividing the tendo Achillis for the radical cure of talipes equinus. The authors' preference for the subcutaneous method is dependent upon the possibility of adhesion of the cicatricial tissue between the divided ends of the tendon to adjacent structures following the open method. We find a solution of this difficulty later in the suggestion of the writers in their treatment of talipes calcaneus, where the flap method of exposing the tendon is pictured and also advised later in other plastic operations of similar nature. In the treatment of varicose veins of the leg we miss Trendelenburg's recommedation for the cure of certain selected cases by the excision of part of the long saphenous vein in the thigh. Many happy results have been brought about by this simple procedure, and we feel that it at least deserves mention.

It would manifestly be impossible in a book of limited scope to exhaust the surgical treatment of the many affections considered in this volume, and the pathology and symptoms have necessarily been given a secondary place. Operative suggestions, as well, have been limited to such procedures as have proved most satisfactory to the writers in their practice. They have succeeded in presenting the medical profession with a manual of more than ordinary interest, and we are happy to extend to volume two the favorable comment already received at our hands by its predecessor.

Raynaud's Disease (Local Syncope, Local Asphyxia, Symmetrical Gangrene). Its History, Causes, Symptoms, Morbid Relations, Pathology, and Treatment. By THOMAS KIRKPATRICK MONRO, M. A., M. D., Physician to the Royal Glasgow Infirmary, etc. Glasgow: James Maclehose & Sons, 1899. Pp. xii–251.

DR. MONRO has, in this little volume, brought together what is known of the history, causes, symptoms, pathology, relations, and treatment of the interesting phenomena first described by Maurice Raynaud.

It is an affection destined to receive greater attention and greater elucidation in the future. It is closely related to general disturbances of the nervous system, and resembles so closely some of its fellow trophoneuroses that it is at times indistinguishable from them.

Most of the pathological observations on Raynaud's disease date from a period when technical methods were much less delicate than they now are, and it is not too much to hope that before very long we shall have some definite information on the pathological anatomy of the disorder. Dr. Monro's work, while valuable in the way of collection and classification, can not be said to have thrown much new light on Raynaud's disease or on the affections with which it is allied.

Atlas of Diseases of the Skin. Including an Epitome of Pathology and Treatment. By Professor Dr. FRANZ MRAČEK, of Vienna. Authorized Translation from the German. Edited by HENRY W. STELWAGON, M. D., Ph. D., Clinical Professor of Dermatology, Jefferson Medical College, Philadelphia. With Sixty-three Colored Plates and Thirty-nine Full-page Half-tone Illustrations. Philadelphia: W. B. Saunders, 1899. Pp. 7 to 199. [Price, $3.50.]

THE present volume represents that one of the medical hand atlases published by Mr. Saunders which is devoted to diseases of the skin. It not only contains plates showing the most important affections of the skin, but also has 191 pages devoted to the description and treatment of the various diseases attacking the cutaneous envelope. Both of these portions of the subject are concisely and clearly given, and additional advantage is obtained from the fact that with every plate there is furnished the clinical history of the case in which the chromolithographic picture was taken. The atlas may be heartily recommended on account of its excellence, as well as its moderate price. Possibly in an atlas costing from two to three hundred dollars, larger as well as more detailed representations of cutaneous processes may be found, but, yet, they will not be of more aid or value to the general physician than this miniature atlas, as it may be called.

An Introduction to Dermatology. By NORMAN WALKER, M. D., Assistant Physician for Diseases of the Skin to the Royal Edinburgh Infirmary, etc. With a Frontispiece, Twenty-nine Plates and Thirty-four Illustrations in the Text. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent, & Co., 1899. Pp. xvi–247.

DR. WALKER modestly launches his book under the title of *An Introduction to Dermatology.* It contains in an abbreviated form descriptions of all the diseases of the skin which would be of interest to the practitioner. The rarer affections and those occurring particularly in certain restricted regions are, naturally, omitted. The author follows very closely the teachings of Unna, and the influence of the Hamburg dermatologist is apparent throughout the book. This might have been expected, since Dr. Walker translated Unna's work on the histopathology of the skin. It would have been more satisfactory, however, if Dr. Walker had embodied in his book his own views and more of his own personality and observations. An earnest investigator and student of dermatology himself, he certainly could enrich by his personal experience the subject in which he is especially interested, and we trust that he intends his book to be only a sketch preparatory to a more comprehensive work. Dr. Walker's book, however, can be recommended, and every one will cull some valuable hint from it. It is to be regretted that the colored plates did not receive more care in their reproduction, as they present such a great contrast to those shown in black and white.

Ringworm and Some Other Scalp Affections: their Cause and Cure. By HAYDN BROWN, L. R. C. P. Edin., Fellow of the Royal Institute of Public Health, etc. London: J. & A. Churchill. Philadelphia: P. Blakiston's Son & Co., 1899. Pp. 175. [Price, $1.75.]

IN this book Mr. Brown seeks to impress upon the physician that all work in regard to the diseases which he takes up has been useless, because no attention has been paid to their—to him—fundamental cause, which consists in "fungus dyscrasias." When, however, we have carefully gone over the chapter devoted to these, it is certainly not clear wherein those dyscrasias particularly lie, as nothing is brought out that has not already been constantly iterated in all books that treat of the diseases in question. Anæmia, uncleanliness, want of hygienic surroundings, etc., are again paraded as they have heretofore been. Still, the "fungus dyscrasia" is everything with Mr. Brown, and it is by the removal of these that he cures ringworm, alopecia areata, favus, impetigo, and phtheiriasis capitis, maintaining that local treatment never amounts to anything and may be of the most indifferent nature.

A quotation will, however, give a better idea of the style, contents, thought, and value of the book than any extended review. In the chapter on alopecia areata, after dealing with Sabouraud's work and with the opinions of Aldersmith and of Lockwood in regard to inoculation experiments with microbes on animals, Mr. Brown says: "When scientists inoculate, who shall classify conclusions? Who shall distinctly lessen cause and effect? Who shall argue that I should be wrong were I to aver now that the loss of hair in all the rat cases given above was in each instance due to fright and a compound dyscrasia that was the result of confinement and usage? I do not opine deliberately that the rats did die of these things, because I have no particular desire to do so; but suppose I did, I think I would have a chance of scoring a point as against Sabouraud and his eminently questionable expositions of cause and effect." (Page 89.)

Essentials of Physical Diagnosis of the Thorax. By ARTHUR M. CORWIN, A. M., M. D., Instructor of Physical Diagnosis in Rush Medical College, Chicago, etc. Third Edition, revised and enlarged. Philadelphia: W. B. Saunders, 1899. Pp. 17 to 220. [Price, $1.25.]

THE first edition of this little book appeared under the title of *Outline of Physical Diagnosis of the Thorax.* In the edition following, an added section on the subjective symptoms necessitated a change of title. The compend represents an epitome of the author's lectures to his classes. It suffers somewhat from being rather too condensed. That the work has met with popular favor, however, is evinced by its having so rapidly reached a third edition.

BOOKS, ETC., RECEIVED.

Remarks on the Present Mild Type of Small-pox. The Symptoms and Diagnosis. By William H. Welch, M. D. [Reprinted by permission from the *Philadelphia Medical Journal.* Published by the Illinois State Board of Health, 1900.]

Touching the Symptoms and Diagnosis of the Epidemic of Modified Small-pox Prevalent in Some Portions of the United States. An Open Letter to the State Board of Health of Illinois. By James Nevins Hyde, A. M., M. D., Chicago. [Published by the Illinois State Board of Health, 1900.]

Fifteenth Annual Report of the Directors of the New York Post-graduate Hospital for the Year ending October 1, 1899.

New Inventions, etc.

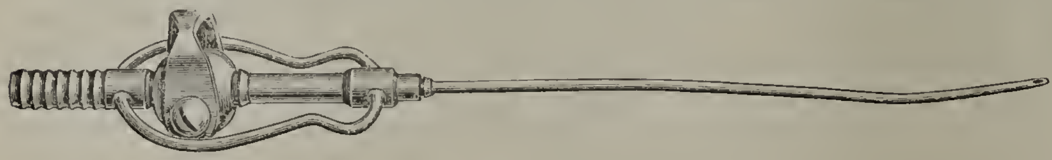
A NASAL-DUCT IRRIGATOR.

MESSRS. WHITE & WRIGHT, of Renshaw Street, Liverpool, have sent us the accompanying woodcut, which represents a cannula for irrigating the lacrymal sac and nasal duct. It has been used in its present form for two years by its designer, Mr. Hugh E. Jones, surgeon to the Liverpool Eye and Ear Infirmary, and has given perfect satisfaction to him and many of his *confrères.* The chief points about the instrument are the following:

1. It is made of silver.
2. The cannula is closed at the distal end, and two catheter eyes are cut as near the end as possible. In

this way the use of the stylet is avoided, while it is practically impossible to injure the delicate mucous membrane of the duct in passing the cannula.

3. The outside diameter does not exceed that of Bowman's original No. 6 probe, so that it is only necessary to divide half the length of the canaliculus in order to pass the instrument.



4. There is a tap at the proximal end of the instrument whereby the flow from the irrigator (which should be at least six feet above the patient's head) may be controlled by the hand which handles the instrument. If preferred, the cannula can be obtained without the tap, and a clamp used on the irrigator tube. If further particulars are desired, Mr. Hugh E. Jones's paper in the *Liverpool Medical and Chirurgical Journal*, June, 1899, may be referred to.

Miscellany.

Abnormal Self-consciousness in Children.—*Pædiatrics* for January has the following excellent editorial remarks on this subject:

"When the child's appetite is good and his temperature normal, most physicians are apt to think him safe in his mother's care and no longer dependent upon medical advice. Yet, if we counsel correct habits of diet, exercise, and sleep, we ought not to be considered as transgressing very far the legitimate bounds of medical practice if we essay occasionally a warning word about so bad a mental habit as self-consciousness. Such advice, when given to a reasonable mother, may be in the best sense prophylactic. Few parents can be got to believe, for example, that 'forwardness,' disobedience, and rude conduct in a young child are sometimes a grave sign of mental deficiency. Gowers has noted them as one of the earliest indications of abnormal cerebral function. Instead of the youngster's being prompted to rudeness and impertinence and laughed at for his supposed precocity, such performances should be viewed with anxiety and should be gently but promptly suppressed. That small children should be 'seen and not heard' is a maxim based on an enlightened psychology. The abnormal self-consciousness that prompts such outbreaks may easily develop into an incurable egomania; the growing brain tissue is, as Horace so well said long ago, *cereus in vitium flecti.* Even where it is not congenital, a morbid feeling of self can be awakened and nourished with alarming ease and speed. No child should be encouraged to repeat poetry before his mother's guests, or praised for his 'pretty curls,' or even have his first trousers made too much of. The less he thinks of himself the better. He may be judiciously commended for good conduct or for diligence in study, but never flattered for his cleverness or good looks, or for anything which he has not come by through self-forgetting endeavor. Both boys and girls should be taught to *endure;* to neglect trifling aches and pains, and to seek for a remedy rather than to cry over the trouble. Self-command and self-control are the noblest things a man can strive for, and he will never gain them unless he begins learning in infancy to fix his thought and will upon objects outside of himself. If such principles of education were more closely followed, hysteria and the 'artistic temperament' might gradually disappear; and the hosts of insane people now walking at large, because their disorders of consciousness are not directly menacing to society, might be much diminished."

"Cypridology."—According to the *Lyon médical* for December 31, 1899, Dr. Queyrat proposes the word cypridology for venereology or syphilology. The *Lyon médical* regrets that he did not speak before and so relieve the embarrassment of the French minister of public instruction who, in creating special chairs in the various faculties of medicine, did not dare to create one with the title of venereal and cutaneous diseases. Cypric and cutaneous diseases, the *Lyon médical* somewhat satirically suggests, would perhaps have been deemed more satisfactory.

A Woman's Breasts Sucked by a Snake.—The *Écho médical du Nord* for December 3, 1899, cites from *Lyon médical* the story of Dr. Malboux who, when on service in Algeria, where he was in charge of some fifteen hundred workmen of whom a certain number were married, was called to the wife of one man whose turn of duty was on the night shift. He had delivered this woman some two months previously, and she sent for him to show the increasing emaciation of her infant, and to tell him that for several days her milk had been poor and that often in the morning her breasts were empty and flaccid. This happened after nights in which she had experienced an inexplicable malaise and a sort of nightmare consisting of the sensation of an enormous weight on the chest, a chilling of the entire body, and an impossibility of moving or crying. She added that it seemed as though a beast lay upon her and drew her milk. The doctor, while paying little attention to the fancy of the beast, could not but realize that both in quantity and quality the woman's milk was rapidly deteriorating without any adequate explanation. Two days later he was called by the husband in the night to find the woman in a state of syncope, her limbs suffering from convulsive movements, yet with no other grave symptoms. The husband stated that he had returned unexpectedly during the night to find his wife lying as though paralyzed on the bed, and that on throwing off the clothes he had found coiled on her chest an enormous snake. Outside the hut was the snake, which the man had killed, and the doctor on opening it found milk in the stomach. The woman's indisposition rapidly disappeared after this incident, and she became an excellent nurse. Dr. Malboux remarks that it may be objected that the snake had not really been surprised in the act of sucking the mother's milk, and that the milk found in its stomach might have been taken elsewhere. But in that case, asks the doctor, how is it that the woman's breasts were always empty following these nocturnal attacks?

Medical Anecdotes of the Olden Time.—Mr. W. H. Harsant, F. R. C. S., in his presidential address to the Bristol Medico-chirurgical Society on Medical Bristol in the Eighteenth Century, gives some amusing illustrations of medical manners of the olden time, from which we quote the following:

"When Dr. John Paul was physician to the infirmary, from 1772 to 1775, the surgeons of the day called him 'their good friend Sangrado,' since the minute he was in attendance one of them was sent for to make use of his lancet. Mr. Metford used to say that he had bled thirty patients a day at the infirmary by Dr. Paul's order, and that he was occasionally in the admission room when Dr. Paul was taking in, and that the first question he asked of every male patient was, 'Are you a Bristol man?' If the reply was in the affirmative, he regularly wrote in his book 'V. S. ad ℥xx' by way of beginning. Mr. Metford requested to know why, without further inquiry into their complaints, he ordered them to lose so much blood. 'Because, sir,' said Dr. Paul, 'if he is a Bristol man, I know that he sits of an evening smoking tobacco and drinking your abominable fat ale; the first thing to be done, therefore, is to let some of that run out, and then we shall see what else is the matter.'"

Of Mr. John Townsend, another eminent surgeon to the infirmary, the following is told:

"He was once walking down Broad Street during an illumination, and observed a boy breaking every window which had not a light. He asked him how he dared to injure people's property in that way. 'Oh,' said the boy, 'all for the good of trade; I am a glazier!' 'All for the good of trade, is it?' said Townsend, lifting up his cane and breaking the boy's head. 'There, then, you rascal, get that mended for the good of my trade; I am a surgeon.'"

The days of the old "barber surgeons" gave rise to the following advertisement in *Felix Farley's Journal* for March 9, 1754, which reads: "Henry Haines, barber, Redcliff Pit, shaves each person for two pence, cuts hair for three half-pence, and bleeds for six pence. All customers who are bled he treats with two quarts of good ale, and those whom he shaves or cuts their hair with a pint each."

The Success of "Christian Science."—According to the *Medical Record* for January 13th, Mrs. Mary Baker Eddy, the head of the Christian Science cult, has, it is announced, given her son a check for ten thousand dollars and a house worth fifteen thousand dollars as a Christmas present.

The Death of Sir Thomas Grainger Stewart, M. D., F. R. S. E.—The death is announced at Edinburgh, on February 3d, of Sir Thomas Grainger Stewart, M. D. at the age of sixty-one years. Sir Thomas was physician in ordinary to the Queen in Scotland, professor of the practice of physic and clinical medicine in Edinburgh University, consulting physician to the Royal Hospital for Children, and to George Heriot's Hospital; late president of the Royal College of Physicians of Edinburgh, and an honorary president of the Tenth International Medical Congress at Berlin.

The Four-year Clause for Medical Study in Nebraska.—According to the *Medical News* for January 27th, the four-year studies requirement has been upheld by the district court in that State. An applicant holding a three-year diploma applied for a license from the medical board, which was refused. The board of health ordered the license to be granted, but on the application of the Lincoln Medical College to the district court at Lincoln for an injunction on the ground that the granting of the license would be a violation of the medical statute, the district court ordered an injunction against the board to be made permanent, thus upholding the requirement of a four-years' course in the State of Nebraska.

The German Translation of Dr. Achilles Rose's Book on Greece and the Greeks.—The German title of Dr. Rose's *Christian Greece and Living Greek* is *Die Griechen und ihre Sprache seit der Zeit Konstantins des grossen. Nebst einem Vorwort von D. N. Botassi.* In a recent issue of the *Münchener medicinische Wochenschrift* it is thus reviewed by Dr. Kossmann:

This beautiful work of our colleague, a German physician practising in New York, and corresponding secretary of the German Medical Society of the City of New York, is most warmly recommended to the attention of our readers. The author, an enthusiastic Philhellene, gives in chapters iii to vii the history of the Greeks from the time of the foundation of Constantinople, exposes many errors which have been current in regard to this history, and endeavors to enlist our sympathy for the descendants of the noble people in whom human thought and feeling had once developed to most glorious bloom. For physicians, however, chapters i, ii, and viii, which treat of the adaptability of Greek as an international language for scholars, are especially fascinating. The author demonstrates the great need of science for such a means of universal communication, which, however, national jealousy would never consent to supply by the adoption of one of the languages of the great nations of the present time as a world language. He points out that most of the technical terms, especially in medicine, now in use originated from Greek, and that it would be the simplest course to fall back on this language altogether. As compared with Latin, he considers that Greek would be preferable because of its being a living, not a dead, language; the language of the modern educated Greeks deviates only insignificantly from classical Attic, while the words themselves for the most part, the technical terms altogether, are identical with or formed according to the rules of classical Greek. Every modern Greek text-book, therefore, could serve to purify our scientific nomenclature from faults introduced into it through ignorance. The learning of Greek for the purpose of international intercourse would not, he says, offer more difficulty than the learning of any other language if we would only learn it from the Greeks of to-day, but to this end it would indeed be indispensable to abandon the pronunciation invented by Erasmus, a pronunciation which at no time has been recognized as the true one. We should have to consent to pronounce Greek with Greek pronunciation. In learning Greek, moreover, as a living language—that is, in learning to speak and to read before entering into the depths of grammar—we should be able to gain the true reward of our studies: the enjoyment and the spiritual proficiency which are acquired through the Greek classics by those who are able to read Greek with real fluency and who are able to think in Greek. Our schools, sad to say, are far from accomplishing such a standard of education for their pupils.

In the foregoing I have tried to give in short phrases the leading ideas from the work of our enthusiastic Philhellene, and I think we shall all agree with the author in most points, and especially in the statement that it is nonsense to teach pupils a Greek language which a Greek would be unable to recognize on hearing it as his own language, or to usher pupils into all the complicated details of Greek grammar without enabling them to express their own thoughts in Greek.

Whether, on the other hand, Latin may not be more qualified than Greek to become, as it has already been, the international language of scholars, I venture to doubt. Far into the nineteenth century Latin occupied this place; men whom we have personally known were wont to lecture and to write their medical theses in Latin. An official order against the Ciceronians and the grammatical pedants in our colleges (who themselves can not speak Latin) would suffice to divert the many hours which are at present devoted to Latin instruction to the real learning of Latin.

Our technical terms, it is true, are in part of Greek stem, but aside from the numerous Latin ones they are familiar to us in Latin pronunciation and accentuation. If we had to say now, instead of blennorrhœ′a, wlennória, and imiplegía instead of hemiplégia, all d's and th's being pronounced with the lisping sound according to English fashion, the circumstance that blennorrhœa and hemiplegia have in reality always been Greek words would aid us little in overcoming the difficulty of learning them over again.

One thing is certain, the introduction of Greek as the international language of scholars would offer more practical difficulties than the revival of Latin. However this may be, the enthusiasm of Rose for the Greek language as the source of the highest human art and wisdom is as justified as it is true. We may be proud that a German physician amid the burden of his vocation in the turmoil of the transatlantic world city has remained faithful to such noble enthusiasm for the most ideal good of mankind.

Diphtheria in the Tombs.—According to the *New York Times* for February 4th, a case of diphtheria was discovered in the Tombs on the 3d inst. The patient was at once removed to the Willard Parker Hospital and his effects were destroyed.

Forensic Medicine and Medical Practice.—According to the *Journal of the American Medical Association* for January 27th, the case of Sebastian *vs.* State, recently tried in the Texas criminal court of appeals, has shown that while the statute law may hold an examination of a medical man by a licensing board essential to permit him to practise medicine, such a provision does not make it compulsory upon him to be so licensed to testify in the courts as an expert witness. The profession of forensic medicine would thus seem to be open to a qualified medical man without the necessity of obtaining the State license to practise.

The Medical Society of City Hospital Alumni, St. Louis.—The programme for the last meeting, on Thursday evening, February 1st, included a paper entitled Report of a Fatal Case of Peritonsillar and Postpharyngeal Abscess, by Dr. Ernest H. Cole; and one entitled Report of a Case of Placenta Prævia, by Dr. F. Hinchey.

Credé's Silver Ointment in the Treatment of Erysipelas.—In the condensed edition of his *Surgery by American Authors*, Dr. Roswell Park, of Buffalo, says:

"Of all the numerous applications which I have ever tried, I have found but one thing which has given the universal satisfaction afforded by the following prescription or something equivalent to it: Resorcin (or naphthalin), 5; ichthyol, 5; mercurial ointment, 40; lanolin, 50. The proportions of these ingredients may be varied, and I often increase the amount of ichthyol, especially when the skin to which it is to be applied is not too tender. The affected parts are anointed with this, and then covered with oiled silk or some impermeable material, simply to prevent its absorption by the dressings; the parts are then enveloped in a light dressing and bandaged. Whenever I have to deal with local evidences of septic infection, I use an ointment essentially the same as this, and have learned to count on it with more reliance than anything that I have ever resorted to. This one better thing hinted at above is Credé's silver ointment, which is to be used as described above, and has been already alluded to in the treatment of septicæmia. As the disease becomes mitigated, the ointment may, if desirable, be reduced with simple lard, and may be discontinued when local signs have disappeared. Absorption of any of these preparations may be hastened by a series of scratches over the affected area with the sharp point of a knife, not deep enough to draw blood, but deep enough to better expose the absorbent vessels of the skin."

The German Medical Society of the City of New York.—The programme for the last meeting, on Monday evening, February 5th, included the presentation of a specimen of abscess of the brain, by Dr. Fraenkel; that of an improved Bottini instrument for the prostate, and the mode of using it, by Dr. Robert Newman; and a paper entitled Trophic Disturbances in Tuberculous Lung Disease—a Contribution to the Symptomatology of the Disease, by Dr. Henry Herbert.

The Thirteenth International Medical Congress.—The secretary of the American national committee, Dr. Henry Barton Jacobs, has issued a circular of which the following is the substance:

The secretary-general of the congress gives notice of the following reduction in rates:

1. All the railway companies of France will grant to the members of the congress a reduction of fifty per cent. upon round-trip tickets as follows: Every member of the congress will receive, upon application to the secretary-general,* a ticket which must be stamped at the railroad station where he enters France, upon paying the full price of a single trip to Paris. At Paris the member will have this ticket viséd in the office of the congress, and it will then serve as a return ticket without additional expense. The journey to Paris having been paid for entirely, and the return trip being free, there is of course a fifty per cent. reduction. It goes without saying that, in order to secure this, the return trip must be to the same point at which the original fare was paid.

2. The French line (La Compagnie générale transatlantique) will allow members of the congress a reduction of ten per cent. on tickets from New York.

3. The secretary-general has arranged to provide to early applicants a number of lodgings, including light and service, at the rate of five francs a day; and various agencies also advertise reduced rates for lodgings.

For further particulars and application blanks for membership, address Dr. H. B. Jacobs, secretary of the American national committee, 3 West Franklin Street, Baltimore, Maryland.

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* Dr. A. Chauffard, 21, Rue de l'École de médecine, Paris.

Original Communications.

STUDIES ON INTERNAL ANTISEPSIS.

By EDWIN KLEBS, M. D.,

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I. IODINE PREPARATIONS, ESPECIALLY TETRA-IODO-PHENOL-PHTHALEIN (NOSOPHENE).

INTRODUCTION.—Internal antisepsis is a problem the solution of which seems to require renewed investigations upon substances acting in this direction. Experimental methods are often dangerous, and will be objectionable if real danger is apt to arise from a certain therapeutic experiment. Under these circumstances animal experimentation alone is permissible, and renders possible a closer observation and study of the changes going on in the healing or toxic processes following the application of any substance to the infected animal.

If, however, the object is the study of the influence of some antiseptic upon a certain infection spreading to the internal organs, then animal experimentation is surrounded by great difficulties. The different degree of resistance of animals of the same race and the same weight requires a very careful selection of the animals subjected to an infection, the outcome of which can not always be predicted. Many experiments will have to be eliminated; control experiments must always be instituted, and comparison must be made under absolutely equal conditions. Examination of these animals makes possible not only a regular control of the temperatures and weights, but also affords opportunity for careful observation of all physiological processes which may have some bearing upon the struggle going on between the infected organism and the infecting bacteria.

Antisepsis.—By far the greater number of antiseptic substances are unfit for internal use, because they destroy the cells as well as the infecting micro-organisms. Of all of this class of chemical substances, iodine and its preparations have always been regarded as the most promising. The severe toxic effects noted after the use of large quantities of iodoform and the iodine salts do not exclude the possibility of favorable effects in cases where small doses are employed. On the contrary, there is good reason to believe that iodine exerts a very decided influence upon the growth of the animal organism, as is evidenced by its constant presence in the thyreoid gland and by the profound constitutional disturbances following the destruction or removal of the latter.

It is well known that grave forms of iodism often follow the surgical use of iodoform. The theory as to the exact nature of iodism may not as yet be thoroughly understood, but it can scarcely be doubted that the danger associated therewith is due directly to the liberation or formation either of free iodine, iodic acid, or iodo-albuminates—substances which, if present in too large amount, may be absorbed by the nervous structures. This view leads to the conclusion that iodine exerts some influence upon the multinuclear leucocytes. According to Hoegyes,* however, iodine is a negative chemotactic substance. But, it may reasonably be asked, is this true under all circumstances? Is it not possible that this phenomenon of chemotaxis is manifested only in the presence of high concentration of this substance? Experimentation alone can decide this, and the results of my experiments seem to demonstrate that this is the case. As Binz and Zuntz have shown, the iodine which is bound to the phenol in nosophene and is not set free in the body, acts quite differently upon the leucocytes of a negatively chemotactic body if toxines are present at the same time. Under these circumstances a pronounced invasion of leucocytes occurs from the bone marrow, whereas in the absence of this aid a very marked leucopenia (deficiency of leucocytes) may often be produced by the action of septic organisms. It can be demonstrated that this action is in two respects a favorable one: First in the elimination from the blood of products of destroyed blood-corpuscles by the way of phagocytosis or eosinophilia; secondly, by a favorable action of these cells upon the healing process, probably also upon the internal regeneration of tissues.

In clinical observation, fever is looked upon as the best indicator of infection, but it is very questionable whether this view is justifiable under all circumstances. Not infrequently elevation of temperature is indicative of an activity which is more favorable than harmful to the infected body. From this standpoint the rise of temperature often following the use of all iodine preparations, including nosophene, can not be considered as at all unfavorable. In support of this view experiments will be given in which the elevation of temperature following medication showed a decidedly favorable character. This is manifested by a parallel rise of temperature and weight; whereas an opposite effect—*e. g.*, decrease of weight and elevation of temperature, certainly shows a deleterious effect.

Fever and weight, however, give but a partial insight into the nature of infection and the struggle of the body against it. Hence, the phenomena occurring during a certain infection progressing under treatment and without, should also be investigated by examination of the blood after the action of one or both of these factors. In the experiments here detailed the blood examinations were made by a modification of Ehrlich's method, and with the Thoma-Zeiss apparatus. Finally, when the animals were killed, a large amount of blood was taken under aseptic precautions from the carotids, placed in sterilized bottles, and a few drops were employed for agar-agar plates to determine the bacterial content.

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* Kunkel's *Handbuch d. Toxikol.*, 1899, vol. i, p. 381.

The first observations of rabbits showed that the results of infection and treatment could be ascertained with a high degree of certainty. I shall now procced to give the results secured by infection with the *Streptococcus pyogenes* and the *Staphylococcus aureus*. The results of my experiments in this connection indicate that nosophene and antinosine can and do act as good antiseptics and are unattended by the dangers accompanying the employment of other iodine preparations. Chemically, nosophene is tetra-iodo-phenol-phthalein. Antinosine is the sodium salt of nosophene, and is distinguished from the latter by its ready solubility. In giving the results of experiments, the action of these chemical substances upon simple, non-infected wounds is first presented; then follow the observations made during the experiments with the above-mentioned micro-organisms.

II. The Normal Healing Process Under the Influence of Nosophene and Antinosine.

The healing of wounds is uninfluenced by the non-pathogenic organisms from the air. This demonstrates that a large wound can be exposed for some time to the air of rooms without danger of infection from microbes. The danger of infecting wounds by the hands of the operator is greater than that from infection by the air. Judging from the researches of Mikulicz, Döderlein, and other German investigators, it appears very questionable if a thorough disinfection of the hands is at all possible. Repeated cleansing and disinfection of the hands are, it seems, of greater importance than the use of the strongest disinfectants immediately before an operation.

In our operations for the study of aseptic wounds, the hands were washed in a half-per-cent. solution of antinosine. The backs of the animals were shaved and then washed with the same strength solution of antinosine, no other antiseptic being employed. Bleeding was controlled by Péan forceps. The wounds were closed incompletely by three silkworm-gut sutures through the edges of the flap; the sutures never gave rise to suppuration and needed no removal. Large portions of the wound were gaping, but these were left open permanently in order to allow free access of air. Scabs formed in a short time, resulting from drying of the wound secretion. The parts were of the nature of open wounds, offering no barrier to the subsequent introduction of disinfectants. Such wounds, when made upon sound animals, healed under the conditions mentioned within a very short time. As a rule, seven or eight days sufficed for the complete formation of a covering of whitish epithelium.

The two rabbits, Nos. XVI and XVII, offer a fair example of this healing process. The wound in No. XVI was treated by dusting nosophene over it in a thin layer and then closing the flap; in No. XVII the wound was closed without the application of any disinfectant. The results are shown in the table of temperatures and weights. The temperature of the animal with the non-treated wound was somewhat higher than in the animal immediately treated with a single application of nosophene. In reference to the undisturbed condition of both animals, as shown by the equally sustained weights of both, there can be no doubt that the slight degree of fever—once rising to 102.6° in XVII and to 103.2° in XVI—was the result of a more aseptic progress of healing in the treated animal. This view is confirmed by the examinations of the blood of both animals, which were made on the third and fourth days after infliction of the wounds.

XVI (treated with nosophene).	XVII (wound not treated).
V. 23 w. : r. 1 : 369 eosinoph. 0	w. : r. 1 : 162 eosinoph. 47 p. c.
V. 24 w. : r. 1 : 89 " 58 p. c.	w. : r. 1 : 438 " 3.3 "
V. 26 w. : r. 1 : 144 " 76.9 "	w. : r. 1 : 315 " 0

Here it is clearly shown that the non-treated animal manifests a decidedly greater migration of leucocytes into the blood during the first day following the injury than is the case in the treated animal; eosinophilia, also, is well developed in the former animal and wholly absent in the latter. This, in our opinion, shows that there were no destroyed red blood-corpuscles present in the latter animal. On the second and fourth days these relations are decidedly changed. Here the treated animal shows a very intense leucocytosis with high eosinophilia which rises to the maximum during the fourth day.

In suggesting that this eosinophilia is an indication of a healthy process, I rely chiefly upon the examination of the wound secretion. The non-treated animal showed no fluid secretion which could be extracted by capillary tubes; the wound of the treated animal, however, yielded a quite clear fluid. In this fluid I was very much surprised to find, in addition to multinucleated neutrophile cells, quite a large number of very small eosinophilous cells containing from one to six separate, well-defined, small round or oval nuclei. The contents of these nuclei were rich in nuclein, which indicated a high degree of vitality in the cells.

On the 26th of May I instituted a comparative examination of the blood by the hæmatocrite. It was thus shown that both animals had 3,500,000 red blood-corpuscles to the cubic millimetre. The non-treated animal showed no separate layer of leucocytes, whereas the treated animal showed a layer corresponding to 130,000 leucocytes. In a dry cover-glass preparation count, the untreated animal had 9,524 leucocytes—a number too small to be detected with the hæmatocrite. This shows a deficiency of 10,000 leucocytes, which are arrested in the mass of red blood-corpuscles precipitated during the very rapid revolutions of the apparatus (4,000 to 6,000 to the minute). The hæmatocrite estimation of leucocytes in a blood rich in these cells is thus exaggerated.

If the number of leucocytes in the blood of rabbit XVI is estimated by the dry cover-glass method, we find but 7,880 leucocytes to 3,500,000 red corpuscles instead of 130,000. The difference depends upon the inclusion of many red blood-corpuscles in the leucocytic layer.

This experiment demonstrates that simply covering fresh wounds with a layer of nosophene is sufficient to destroy the air germs which may be deposited in the depths or in the scabs of partially closed wounds. It is also very probable that it destroys the cocci which enter the wound from the hands of the operator, because a nearly momentary admixture of two-per-cent. antinosine with these organisms and with colon bacilli suffices to kill these bacteria. This we have often been able to prove. It may also be stated that repeated washing of the hands with two-per-cent. antinosine solution during prolonged operations will be sufficient to destroy all germs coming from the deeper layers of the skin.

III. Streptococcus Infection.

The streptococcic infections which I desired to study with reference to the reputed germicidal action of nosophene and antinosine were conducted as follows:

In the first experiment of this series I again used rabbits XVI and XVII to demonstrate the healing process in non-contaminated wounds under normal conditions and under the influence of these two substances. The weight of the two animals had remained nearly equal for a week, and the temperature ranged between 102° and 103° during the two days preceding the infection. The streptococci were injected beneath the nearly healed flaps of the wound. On June 1st rabbit XVI received sixty-one milligrammes of the culture, followed by an injection of nine centigrammes of nosophene in emulsion. No. XVII received but nine milligrammes of the same culture—*i. e.*, one seventh of the quantity used in No. XVI. In the last animal the culture caused a slow but continuous rise of temperature, ranging during the first day from 102.2° to 102.8° F.; during the second day, 103.4°; on the third day, 104°. On the fifth day I noted the highest temperature—viz., 104°. Here we had for two days a slowly rising temperature, and for three days a permanent and moderate fever. In animal No. XVI the admixture of nosophene with the sevenfold higher dose of streptococci produced a very different effect upon the temperature. For example, on the first day the temperature remained the same as on the day before injection, 103° maximum; on the second day there was a decline to 102°; on the third day 103.6° was noted in the evening; on the fourth the temperature was lower than in the other animal; on the fifth day there was noted a maximum of 103.4°. The morning temperatures were always lower than the evening; the fever curve was intermittent, not steadily rising as was noted without nosophene. This substance, therefore, undoubtedly exerts a favorable influence upon the progress of the fever. This healthful action reduced its duration to a few hours, during which the temperature rose higher than in the non-treated animal, which showed a permanent increase of temperature.

The experiments were further extended so that each animal received new injections of half a cubic centimetre and two cubic centimetres of culture fluid. In animal No. XVI, I added to the first injection thirty centigrammes of nosophene and one centigramme of antinosine; the second injection was accompanied by thirty minims, or two cubic centimetres, of two-per-cent. antinosine alone. On the day following the first injection No. XVI showed a temperature of 104.8° to 105° F., the highest reached in this case; this was followed on the succeeding day by a sharp decline to 103.8° to 102.8° and 102.6°. After injection into animal XVII of an equal quantity of the culture, a persistent and steady rise of temperature was noted, reaching a maximum of 104.8° on the second day. A rapid decline of temperature occurred a day later than in No. XVI. In both animals the effect of these injections seemed to end on the third day.

On the fourth day the largest injection (two cubic centimetres) of streptococcus culture was given. This, mixed with the same quantity of two-per-cent. antinosine, produced a rise of temperature of but 103.8° F. in No. XVI, while the same culture fluid administered to No. XVII without antinosine caused a rise of temperature on the same day to 105.6°. After this time both animals showed a decline and rise of temperature during a period of five or six days. In the nosophene animal, however, the temperature ranged below 102°, while in the non-treated animal the curve had a well-marked hectic character, the maximum reaching 103° and over, the minimum 101.4°.

This period is inaugurated in the non-treated animal by an enormous rush of leucocytes to the blood, the ratio of white to red being as 1:43, a true hyperleucocytosis. The eosinophile cells formed on this day amounted to 43.5 per cent. of the leucocytes, whereas on the following day they showed a percentage of 65.7. The nosophene animal had fifty per cent. of eosinophiles on both days.

The great difference in the course of infection will be shown most clearly by the relative weights. The greatest loss of weight, commencing with the streptococcus injections, was reached in both animals on the twelfth day after the initial injection. No. XVI, which received nosophene, had an initial weight of 1,845 grammes; No. XVII weighed 1,629 grammes. On June 12th No. XVI weighed 1,600 grammes; No. XVII, 1,436 grammes; loss: of No. XVI, 245 grammes; of No. XVII, 193 grammes. The loss to the 1,000 of the initial weight was 13.2 and 11.8 respectively. Nosophene saved fourteen grammes to the kilo of weight.

Now follows the regenerative period, characterized by lower temperatures. No. XVI gained 252 grammes in six days—*i. e.*, 135 to the kilo of the lowest weight; whereas No. XVII gained during the same period but 64 grammes, or 4.5 to the kilo of lowest weight. Hence, the regenerative power of the body is much higher under the influence of the remedy than is the case in the non-treated animal. The greater loss of the latter clearly shows that the infection was not of milder degree than in the treated animal; it also shows that the resistance and recuperative powers were better preserved in the nosophene animal. The question naturally arises, Can the cause for this better preservation of the forces just noted in the treated animal be determined? If it is asked in what portions of the body this power resides, no other answer can be given than that it must be assumed that there must be a difference in the migratory activity of the leucocytes. Naturally, the fluid parts of the body also contain the so-called alexines, or protecting substances. It has, however, lately been shown by Lastschenko * that these substances are secreted by the living cells, a fact of the highest importance since the detection by Van de Velde of leucocidin as a product of coccus vegetation, and of the bactericidal substances in the leucocytes by Bail.

According to these recent researches, the decision in the struggle between cocci and the body will depend upon the relation of these two substances. If the leucocytes do not produce sufficient bactericidin, as this substance may be called, the microbes will destroy the infected animal. On the other hand, if the microbes are prevented from producing leucocidin, or necrobiotic substances, the cellular action of the body may win in the contest by inclusion and final phagocytic destruction of the organisms. The same processes go on not only in the tissue cells but also in the blood, in which the cell-destroying substances of the cocci first produce necrosis of the red corpuscles. The latter fact has not as yet been sufficiently studied, but its occurrence can be demonstrated by the presence of polychromic blood-corpuscles, blood plates, and the formation of eosinophiles within the motile leucocytes of the blood.

In the two cases studied, such examinations were made on two days at the commencement of the regenerative process, which was marked by lowering of the temperature. In the nosophene animal a higher degree of eosinophilia was found than in the non-treated case No. XVII. On the first of these two days a very great rush of multinucleated leucocytes into the blood was noted, the ratio of white to red corpuscles being as 1:43, or 2,325 : 100,000, with but 43.5 per cent. of eosinophilia. The other animal showed fifty to fifty-five per cent. of eosinophiles, a difference which is not so great as was noted in many other cases. But the infectious process was not finished in either of these animals, as was shown by reappearance of fever after a period of low temperature. This secondary febrile reaction was much higher in the non-treated animal—*i. e.*, 104.5° F. against 103.2° in the treated animal.

The further development of the infectious process was interrupted by an operation undertaken to determine whether the internal septic process could be demonstrated by lesions of an internal organ. For this purpose crushing of the kidney by strong pressure between the fingers was resorted to. In rabbit XVI this procedure caused rupture of the capsule and tearing of the whole organ, as was proved at the post-mortem performed on the following night. In the other animal, No. XVII, the kidney was not dislocated or torn, but was covered with an irregularly thickened capsule, showing that the latter had been ruptured. The results of microscopic examinations of this kidney will be given in connection with the other organs operated on in the same manner; at the same time I will discuss the influence of antinosine upon the temperature following crushing of the kidney.

In the second series of streptococcus infection two rabbits were inoculated after they had fully recovered from a previous infection with diphtheroid bacilli. For three days Nos. XVIII and XIX had temperatures varying from 101° to 102° F., which is the normal rectal temperature of rabbits. The weight was 1,500 and 1,800 grammes respectively.

On June 23d the two animals were injected in the jugular vein with thirty minims of the same culture of streptococcus as was used in the animals XVI and XVII; the same amount was also injected below the flaps of the wound. Another portion of the body was injected with nineteen minims of five-per-cent. peptone solution. Animal No. XVIII received fifty minims of two-per-cent. antinosine immediately following the intravenous injection of the cocci; the antinosine injections (two per cent.) were repeated in thirty-minim doses during the four succeeding days. Seven injections were so made that the animals received in five days 156 cubic centimetres containing 0.78 gramme of antinosine. Neither the first injection, of more than eight centigrammes of antinosine, nor the following three doses of thirty minims each on the 26th, containing nearly 0.8 gramme a day, produced any toxic effect. To prove this I append a chart illustrating the temperatures of both animals. The dark line shows the temperature of the antinosine animal; the pointed line shows that of the streptococcus-peptone animal; the marks below the lowest horizontal line show the injections; the dotted lines, the streptococci; the interrupted lines, the antinosine, and the zigzag line the peptone. Two of the divisions correspond to a cubic centimetre of the solution.

This chart shows that during the first and second days the temperature reached its height in the non-treated animal No. XIX, the maximum in these two days being 105.6° F. The antinosine animal, No. XVIII, showed but 105°. The temperature on the following morning was somewhat higher in this animal, but it sank to 102.5° after the first antinosine injection on this day. A new rise was reduced to 103.6° by a second antinosine injection, and the highest temperature was only 105.1°. On the following day, Sunday, the morning temperature only was taken. On June 26th the non-treated animal showed high temperature, whereas the antinosine animal showed low temperature in the morning with a sharp decline in the afternoon. On the following day there was high temperature in the non-treated and low temperature in the treated animal. It is certainly very difficult to say from this chart which of the animals shows the better record. Every doubt is removed, however, if the average temperatures are compared with the average weights, as is done in the following table:

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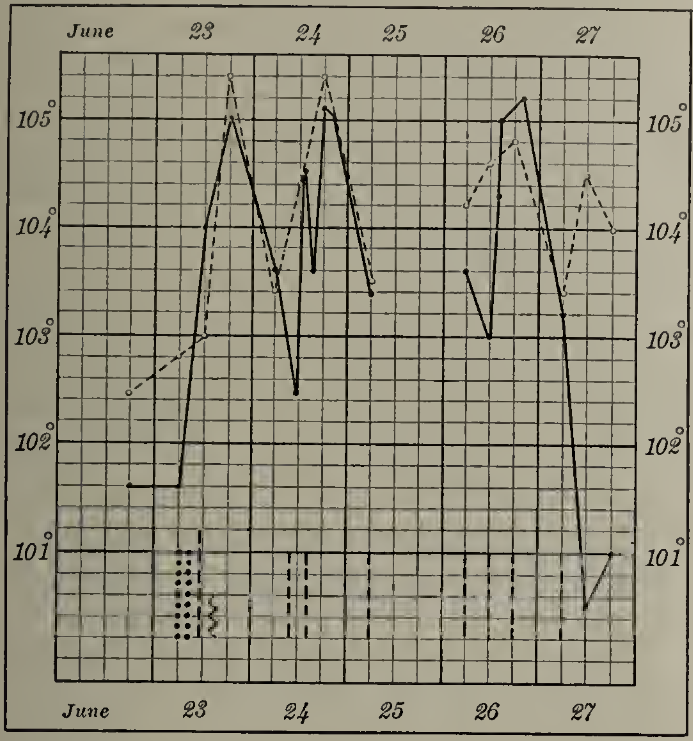
* *Münch. med. Woch.*, 1899, No. 15.



DATE.	R. XVIII. Average temperature and weight.	R. XIX. Average temperature and weight.	Infection (XVIII), antinosine.
June 23d...	104.5° 1,517	104.2° 1,731	
June 24th..	104.21° 1,420.66	104.33° 1,636	XVIII, 2 an. inj.
June 25th..	103.4° 1,386.00	103.5° 1,583	XVIII, 1 an. inj.
June 26th..	104.22° 1,460.5	104.53° 1,626	XVIII, 3 an. inj.
June 27th..	101.56° 1,478.5	103.97° 1,627.5	XVIII, 1 an. inj.
Av., 24-27.	103.35° 1,436.4	104.08° 1,618.1	
Against 23d.	−1.15° −80.6	−0.12° −112.9	

These figures show that the average temperature of the four days following the infection is lowered 1.15° F. by the antinosine. In the non-treated animal the natural healing process was capable only of lowering the average temperature by 0.12°. The difference is 1.02°, representing the amount of oxidation conserved by antinosine. The saving of body weight of rabbit XVIII as against rabbit XIX was 22.3 grammes in four days.

On June 28th the left kidneys of these animals were crushed. Great loss of weight followed—350 grammes in rabbit XVIII; 225 grammes in rabbit XIX. The latter regained its weight and more after six days, whereas the weaker animal (XVIII) made but slight progress. After a great drop in temperature, rabbit XVIII was killed by bleeding; then rabbit XIX was killed in the same manner. Both showed caseous abscesses under the flap, which was perforated in rabbit XIX and closed in XVIII. Suppuration was more extensive in the latter animal. The caseous masses contained colon bacilli.

As a result of this experiment it was shown that by pressure upon the left kidney of rabbits the capsule may be torn off without great danger to the kidney substance. Regeneration of the latter takes place very rapidly.

A careful comparison of the average temperatures of the three animals in whom the kidneys were crushed gives evidence of unexpected influence of the antinosine treatment. This is shown in the following table:

A. The Average Temperatures of

	Rabbit XVII (not treated with antinosine.).	Rabbit XVIII	Rabbit XIX
		(treated with 21 mgr. of antinosine the day before crushing).	
4 days before............	103.333°	103.547°	104.2°
4 days after.............	103.703°	103.422°	103.366°
5 days later	103.023°	101.916°	102.325°

B. The Average Weights of the Same Animals (Grammes).

4 days before............	1,475.4	1,492.5	1,623.4
4 days after.............	1,470.8	1,297.8	1,535.5
5 following days.........	1,378.5	1,161.3	1,647.2

The non-treated animal shows a diminution of the average from only 0.31 following the first four days after the operation, during which time the temperature was elevated. Rabbit XVIII, which had received antinosine injections some time before the crushing of the kidney, had less elevation of temperature after the operation, and the temperature then dropped to normal. Rabbit XIX, which received but four centigrammes of antinosine the day before the operation, showed no elevation of temperature after the crushing; the temperature later fell quite low, but not so far as in rabbit XVIII, which was affected most intensely, as is shown by the large loss in weight. The smallest loss of weight occurred in rabbit XVII, which lost but 4.6 grammes during the four days following the operation; during the five subsequent days, however, the loss was nearly 100 grammes. XIX lost nearly 90 grammes after crushing, but subsequently gained more than 100 grammes. The highest loss was attained by XVIII—namely, 331 grammes.

The depression of temperature after the crushing of one kidney is a very curious fact, the explanation of which is impossible at this time; the influence of antinosine upon the temperature and weight is, however, apparent, chiefly in rabbit XIX, to which a high dose of this substance was administered the day preceding operation.

(To be concluded.)

THE IMPORTANCE, BOTH MEDICO-LEGAL AND CLINICAL, OF THE EARLY RECOGNITION OF CERTAIN ORGANIC AFFECTIONS OF THE NERVOUS SYSTEM, INCLUDING PARESIS.

By J. LEONARD CORNING, A. M., M. D.

Whatever our hopes or our misgivings touching the curability of certain organic diseases of the nervous system, it must be conceded, I think, that if we are ever to accomplish anything in this baffling field, realization can only come by intervention at the very inception of the trouble—before the obliteration of important histological elements, which, once destroyed, are never built up again.

On this point pathology and therapeutics are in agreement.

Granting even that, discouraged by the ill success of the past, we have come to look into the future in a spirit of pure nihilism, so far as the curability of this class of diseases is concerned, it were well, at least, to concede that much may be done to ameliorate and something even to retard their course; and that certainly the latter—holding back the disease or delaying its forward movement—is best achieved before the pathological momentum, the morbid *vis à tergo*, has made irresistible headway.

But, aside from therapeutic considerations, present or expected, the element of early diagnosis is often invested with peculiar medico-legal significance. A prisoner, charged with murder, let us say, is arraigned for trial. For the lack of something better, his counsel sets up the plea of insanity. Medical experts are called in; the prisoner's mind is ransacked; and, what is proper enough in its way, he is put through what purports to be, and sometimes is, a rigid physical examination. The purpose of the last-named expedient—aside from any scientific data it may yield—is frequently largely judicial, the intention being to impress the jury, who might, perhaps, remain unconvinced by the purely psychological testimony, that the prisoner has grave organic disease of the central nervous system, which of itself proves that he must be *non compos mentis*. In assuming this position attorneys do not plant their feet nor base their hopes upon the pathology or clinical experience which are offered to the view, but upon the almost universal delusion of the lay mind that organic disease of the brain carries with it insanity as a usual, not to say inevitable, consequence. And you may be sure —especially those of you who have ever tried it—that to break down the ingeniously wrought defenses of this nature is to put your erudition, your logical acumen, and your powers of exposition to the touch of the severest proof.

Are there absolutely no signs of a single well-developed disease of brain or cord, then incipiency is invoked; the prisoner is said to be at the threshold of dire morbific calamity—only one foot, 'tis true, as yet, across the sill, but presently, aye, even while the court sits, he may be expected to lift the other after! Sometimes, however—and this bears upon the trend of the present argument—the signs are perceived to be either too unsubstantial or too conflicting to permit of their being safely brought to court as testimony in support of the incipiency of a single disease. Then it is that the attorney and his medical ally set up their master work—the plea of multiple incipiency, the plea that the accused harbors the first stealthy beginnings not of one disease but of half a dozen!

Yes, unsatisfied with the contention that the signs point to organic implication of the nervous system of some kind and resting there, they invoke a kind of fantastic particularization, naming each disease with much show of emphasis, and parceling out the signs, say one to each disease; or, when there are not enough to go round, using the same signs as indubitable evidence of the presence of three or four different diseases, ignoring altogether the pivotal question of characteristic grouping, which, indeed, they would fain avoid, since the signs available are usually either so few in number, so conflicting, or so shadowy as to daunt even the most brazen casuist. And this is important, both from the view-point of the jurist and that of the medical witness; for it should be appreciated that temerity of this kind is best met by bringing forward the symptom groups generally admitted to be characteristic of the incipiency of each alleged disease, and then revealing the full extent of the discrepancy by comparing these symptoms, group by group, with the imperfect or specious grouping set up by opposing counsel. When such a shallow attempt to establish the presence of several diseases is not revealed in the direct testimony, it may and should be brought out by the cross-examination.

Familiarity with the signs of incipient organic disease of the brain and spinal cord is desirable, then, from a clinical standpoint, and may rise to the dignity of a positive necessity when we are called to testify in a court of law.

Unfortunately, our knowledge is not yet sufficiently advanced to admit of a codification of the signs of incipiency applicable to all diseases of the nervous system. For this reason, and also to avoid the perils of a long and complicated disquisition, I shall limit the present paper to the discussion of the symptoms that proclaim with some approach to certainty the beginning of the following diseases: locomotor ataxia, multiple sclerosis, paralysis agitans, and general paresis—diseases which play a considerable part in the litigation of the day.

To win to an intelligent interpretation of the symptomatology of locomotor ataxia it is necessary to remember that the brain, spinal cord, and nerves, especially the cranial nerves, may all be implicated.

Among the possible symptoms of early tabes are paralysis of the abducens, atrophy of the optic nerve, paralysis of several of the extrinsic ocular muscles, and more or less involvement of the intrinsic ocular muscles. Upon the last-named complication hinge the various pupillary anomalies and the impairment of accommodation. Sometimes the pupils are uneven in size; at others they are greatly contracted. Again, they may fail to react to light, but respond to efforts at accommodation (Argyll Robertson symptom). More rarely there may be total absence of response to either light or accommodation. This condition was well exemplified in a man afflicted with incipient tabes, whom I recently saw in consultation with Dr. F. Le Roy Satterlee. Tactile and thermic sensibility were but slightly if at all affected in this patient; the patellar tendon reflex was, however, lacking, and he suffered from gastric crises and occasional pains in the legs of the characteristic lancinating type. There was no apparent insufficiency of innervation of the muscles. All movements of the hands and legs were normally executed, and Romberg's sign—swaying when standing with closed eyes—was but slightly manifest.

It remains to note that the contracted pupils of tabetic subjects may often be made to expand by smartly irritating the skin with the faradaic brush.

Only exceptionally are impairment of color appreciation and diminished acuity of vision associated with a normal visual field. Again, it is worth remembering that a narrowing of the visual field is sometimes observed in the absence of all apparent neuroretinal changes. My friend Dr. David Webster has given me an account of a case of this kind observed by him—a central scotoma of the left eye, without appreciable ophthalmoscopic lesion, occurring in a man of forty, in whom, several years afterward, there developed unmistakable symptoms of ataxia.

Besides the cranial nerves just mentioned, several others may become involved in ataxia. Disturbances pointing to implication of the vagus, the accessorius, the olfactory, the glossopharyngeal, the auditory, and the hypoglossal have all been recorded. Lesions of the facial, the trigeminus, the auditory, and the olfactory are relatively rare; while, on the contrary, implication of the vagus and the accessorius or their nucleus are to be counted among the early and common features of the disease. It is to the involvement of the last-named nerves—the vagus and the accessorius—that the gastric and laryngeal crises, the paroxysmal vomiting, coughing, and suffocative attacks are usually ascribed.

Of great interest from a clinical and medico-legal standpoint—and I can not forbear from a passing mention of them—are the cerebral manifestations and associates of tabes. Attacks of vertigo, depression, and morbid anxiety are among the lesser phenomena; delusional melancholia, dementia, paranoia, and, above all, paresis among the greater. In some instances the paresis precedes the ataxia, in others it comes after. Desirable as would be the determination of the exact sequence, this is often quite impossible, especially in medico-legal cases, because of the imperfect clinical history available.

We may well pass over the hypoglossal lesion, expressing itself in hemiatrophy of the tongue, since there is nothing in the least distinctive about it, the disease being more frequently met with as an independent affection than in association with well-marked ataxia. Indeed, much the same reservation, though somewhat more limited in degree, is applicable in the case of all the nerve lesions previously considered. Though significant, they are not in themselves determinative; only when associated with other symptoms do they attain their full diagnostic value.

What, and how many, then, are the symptoms which when associated with the phenomena induced by these nerve lesions enable us to proclaim with confidence that we are, in truth, confronted with true ataxia?

In my opinion, the presence of at least two additional symptoms is necessary to a decisive conclusion: First and foremost, the lancinating pains, with which all are familiar; and, secondly, absence of the patellar tendon reflex. These symptoms, especially when associated with immobility of the pupil, lend the ultimate of certainty to the diagnosis. Ataxia, and only ataxia, can it be, since in that disease alone are three symptoms of such striking dissimilarity to be found. So much for tabes.

The next disease, multiple sclerosis, or disseminated sclerosis, to which I would briefly advert, is not only a rather rare affection of the nervous system, but also one characterized by an obscure and insidious beginning. Moreover, in its subsequent evolution, it is frequently baffling and inconstant. Seldom do we meet with absolutely typical symptoms. The very early symptoms—vertigo, gastric derangements, headache, and minor sensory and motor disturbances—are, certainly, in no sense distinctive. We may, of course, suspect that a nervous disease of some kind is developing; but only with the appearance of the intention tremor—that form of tremor brought on alone by purposive acts or attempts at them—do we begin to fully realize the nature and extreme gravity of what lies before. The subsequent appearance of nystagmus, which represents merely an extension of the intention tremor, and the scanning speech, characterized by a drawling hesitancy between words and letters, complete what, for the books, is the typical symptom-group of the disease.

Aside from occasional paræsthesias, sensory disturbances are absent in multiple sclerosis.

On the other hand, muscular rigidity, increased skin and tendon reflexes, and a spastic gait are frequently met with. This spastic condition was strikingly in evidence in a young girl of sixteen, whom I saw in consultation with Dr. Stephen Pierson, of Morristown, New Jersey, a few years since. Tendon reflex and ankle clonus were as exaggerated as possible; the characteristic speech defect was present; and there was besides decided evidence of commencing dementia. But, on the other hand, of nystagmus there was practically none at all.

One or more of the cranial nerves is also frequently implicated. This fact has not the significance it possesses in tabes. The differential diagnosis is, indeed, quite simple when the course of the disease is in other respects fairly typical. Again, slight dementia and apoplectiform attacks are sometimes observed, the latter more especially toward the beginning of the disease, while the extension of the disease to the cortex has obviously to do with the genesis of the epileptiform seizures.

Where the diagnosis is beset with difficulty, as it often is in this disease, it would be but a betrayal of pedantry to attempt too much in the way of early augury. Enough, then, that the appearance of the intention tremor justifies the gravest suspicions—suspicions which deepen into certainty with the coming of nystagmus or marked exaggeration of the tendon reflexes.

While locomotor ataxia is a disease of the general nervous system with a predilection for the spinal cord, paresis, on the contrary, ravages by preference the brain, attacking the spinal cord and nerves much less sharply. Since in the clinic and in court the question often arises as to whether in a given case we have to do with early paresis or not, you will agree with me that a few minutes given to the recapitulation of the more important data will put a fitting ending to the discussion. In the beginning, as in the later stages of the disease, psychical changes play a prominent part. The subject is lethargic in thought and perception; he has likewise parted with his former power of attention, and is therefore unable to persist in his work for long. He is irritable and fretful; his equanimity is jostled by trivial circumstances; his will is weak, and he is lightly swayed in his fickle determinations. Still more significant is his neglect of the reasonable conventions and even the decencies of life. Formerly a respecter of cleanliness and decorum, he is now become slovenly in his raiment and indecent and obscene of speech. As a rule, he is quite unaware of this change of character; but exceptionally—and this applies especially to medical men, who are aware of the insidious nature of the disease—he may strongly suspect that all is not well with him, and communicate his suspicions to his friends.

All this is extremely significant in a general way; but it is not quite conclusive, for in mania and other forms of mental derangement there may be in the beginning striking alterations of appetite, habit, and propensity. Nor yet is the nocturnal insomnia nor somnolence by day decisive. Presently, however, or exceptionally only after the lapse of years, certain other symptoms of a somatic character are added. Prominent among them are alteration of speech. Words are brought out with difficulty; syllables and letters are misplaced, and there is a distinct loss of vocal timbre. This is the "syllable stumbling" of the German writers. To these derangements are soon added fibrillary trembling of the lips and tongue, inequality of the pupils, changes in the writing—manifested by irregularity and dropping of letters and syllables—and clumsiness of gait.

Clinically speaking, all the elements necessary to a diagnosis are now present, and the case may be declared without further hesitation to be one of incipient paresis. In medico-legal cases, however, matters are not always so simple. The inequality of the pupils may be produced artificially; the subject may be taught to shuffle about and affect the necessary idiosyncrasies of speech and conduct; and twitchings of the muscles may be produced by the aid of strychnine. All this opens a vista of unique possibilities.

The subsequent course of a case of paresis is known to all: how the subject, parting with his critical faculty, gives himself over to the dominance of the most quixotic schemes and extravagant, unsystematized delusion; how the pupils become absolutely inactive, the sensibility of the skin diminished, the tendon reflexes lost, the optic nerve atrophied, and the cranial nerves, or some of them, paralyzed.

Some or all of these things may happen, as all know, from reading and experience. Finally, the epileptiform and apoplectiform attacks, with their false recoveries, the bedsores, the relaxation of the sphincters, and the terminal dementia are things well known to those who have had asylum experience.

A word more on the principles of differential diagnosis applicable in the clinic and in court and I have done. Paresis, as everybody knows, does not always follow the classical course just indicated. Sometimes the symptoms point to progressive mental deterioration from the very beginning, dementia being an initial rather than a terminal feature. Again, the disease in its course may bear more or less resemblance to a number of other affections, notably chronic alcoholism, cerebrospinal syphilis, senile dementia, chronic meningitis, multiple sclerosis, and exceptionally even tumor of the brain has been mistaken for it.

In alcoholism, the disturbances of speech are less characteristic, the hallucinations assume a unique and prominent character, and the tremor is increased by abstinence and decreased under the influence of alcohol. Then, too, the history of the case is of service in forming a decision.

A sharp distinction from cerebral syphilis is often impossible; indeed, syphilis is generally conceded to be, as in ataxia, one of the chief causes, if not the chief cause, of the disease, and this quite aside from any hereditary predisposition. The characteristic splitting, persistent headache of cerebral syphilis is, of course, of some diagnostic service. In senile dementia the absence of important somatic criteria and the age of the patient are usually sufficient for purposes of exclusion. The comparative frequency of choked discs and the occurrence of delirium and fever in the beginning will help us to exclude meningitis. In multiple sclerosis the intention tremor, the nystagmus, and the scanning speech of fully developed cases make error impossible. When, however, the development of the disease is erratic, distinction is sometimes impossible. The absence of mental symptoms and pupillary changes, the attitude, the deliberate speech, quite unlike the precipitate scanning utterance of paresis, will serve to distinguish paralysis agitans.

What adds further complications to the problem of diagnosis is the fact that paresis frequently coexists with other diseases. This fact, as already noted, has been utilized by counsel in cases involving medico-legal questions with a view to mystifying the jury, the ultimate purpose being to imbue their minds with the idea that even though the attempt to prove the existence of paresis falls through, enough evidence still remains to establish the existence of grave organic disease of the cerebro-spinal system. And, as previously intimated, there being a popular idea that organic disease of the nervous system necessarily entails insanity, it requires little in the way of artful presentation to win to a favorable verdict, borne thither on a wave of maudlin eloquence, whose meretricious sheen casts in obscurity the poor protest of simple fact.

When a contention of this kind is set up, its speciousness is best revealed by insisting that the minimum of symptoms possible to the constitution of the typical group of each disease be produced in evidence. For example, when, as often happens, paresis and ataxia are alleged to be associated, the characteristic cerebral symptoms of the former should be demonstrable, and the spinal symptoms of the latter. True, both are diseases of the general nervous system; but, whereas in paresis the brain is chiefly attacked, in tabes it is the cord which is predominantly involved. This proposition being admitted—and pathologically it is incontrovertible—it follows that the decisive symptoms in paresis are cerebral, in ataxia spinal.

Many a web of fine-spun sophistry will vanish into smoke, you may be sure, at the touch of such simple logic.

53 West Thirty-eighth Street.

The Action of Heroine on the Respiration.—Paulesco (*Journal de médecine interne*, December 15, 1899) records a series of experiments from which he concludes that an action is exercised by heroine upon the nervous centres of respiration identical with the exaggeration of reflex excitability which it causes in the rhachidian motor centres.

OVERSTUDY.*

By LEROY M. YALE, M. D.

When the chairman suggested to me the subject of overstudy in school I hesitated to accept, because my experience, being drawn almost exclusively from private schools, might be too one-sided to fairly represent the facts as they would be if all kinds of schools were considered. Curricula may be different, age for age, and the aptitude for study, being somewhat a matter of heredity, also different.

Again, as my experience has led me to consider that overstudy as a real primary cause of results that would come to a physician's notice must be very rare, I feared that anything I might write would resemble the celebrated essay upon the snakes in Ireland.

Nevertheless, the question whether a child shall study, and how much, is one which has very frequently to be answered, and the considerations which determine the answer may well be mentioned in this discussion, whatever may be the truth concerning overstudy strictly as such.

Of course, it is not denied that overstudy may occur. What I mean to say is that the difficulties of school work arise much more frequently from somatic than from psychical causes, and when from the latter rather through worry than work; not from overstudy but from overworry about study. The distinction is not a quibbling one, although the two conditions may be entangled. The practical difference lies in the management of the case, according as we think a group of symptoms due to overstudy or to physical causes, which also make study laborious.

I suppose that in the schoolroom, as in the affairs of adult life, it is difficult for an individual in good health to overwork, provided the work is free from anxiety. Work thus free, if excessive, is brought to a standstill by wholesome fatigue or somnolence, which compels repairful repose. But if a child's health is not perfect, worry is easily excited by tasks not beyond its strength, and there are often, even for those seemingly completely well, sources of mental or nervous irritation. They are not easy to get at in all cases. If the parents are tactful, it is usually better to seek for information through them. As an example, you know how easily work is done under the leadership of a sympathetic teacher, a born educator, and with what labor and dissatisfaction it is performed under a master who seems to have confounded *educare* with *educere*, and thinks that to educate means to "take it out of" the pupil. It need not so far as this: even a simple want of understanding between teacher and pupil makes the task a worry.

Again, although the technique of teaching is outside of our present consideration, it has seemed to me that a source of irritation may be sometimes found in a faddish complexity of curriculum. A certain number of hours of work are easily borne if the topics are few, but the mind is vexed if frequent changes are demanded. Most minds require a little limbering, and do their best work after a certain momentum is gained. Many other sources of annoyance will occur to you.

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* Read before the Society of the Alumni of the City (Charity) Hospital, October 11, 1899.

But the real difficulties which lead us to consider the interruption or diminution of study usually come from physical causes in the strict or ordinary sense, even the nervous susceptibilities just alluded to being based upon some bodily ailment or disarrangement. Whether the effect of study shall in a given case be normal or quasi-pathological will depend less upon the burden or exertion *per se* than upon the physical condition of the child at the time. Let us look at this a little more in detail, and, as I have no new harvest, pardon me for threshing over old straw.

It can not have escaped the notice of any of you that the question of overstudy practically never comes up in the later years of pupilage: not in the college course and little in the high school. In professional schools the pace is very hard indeed, but the breakdowns are very rarely indeed from study. Of course, all this means that the years in which we hear of overstudy are precisely the years of development, especially those covering the second dentition and puberty. The root of the matter would then seem to lie in the developmental processes and not in the study. Teachers recognize this as well as physicians. In fact, whether we use the learned words of science or the vernacular phrase "the child has outgrown its strength," we admit a condition which may be called a developmental cachexia. And it is because of the conditions of this period, the intrinsic changes in the system and its susceptibility to external influence, that school life involves so many perplexities. Study coincides with physical disorders rather than causes them. It is easy for the physician to order the child out of school, but this may not be necessary, and in any case it will do little for the child's improvement unless the bodily ailments are sought out and search made for their real causes. These ailments are many indeed, but I believe that the commonest are anæmia with debility, gastro-intestinal catarrh, and some nervous manifestations, notably chorea and disturbed sleep.

If one reflects how frequently these same symptoms, especially the anæmia, develop at this time of life in those who have little or no tuition—if he is able to follow these children during the whole year and watches the recurrence of this anæmia, even in holiday time, under the best advantages—he is presently convinced that the causes are outside of study. Reasons enough can be found in the developmental conditions already alluded to, whenever the excessive strain is not met by great care in nutrition; in faulty hygiene of the school; in faulty hygiene of the home; and in the personal medical history of the child.

School hygiene has been discussed by another reader, and I can pass it by.

In the hygiene of the home are repeated all the requirements of school hygiene, with greater difficulty in fulfilling them, and to them others are added. In a good school discipline accomplishes much for the hygiene, but in many families discipline is unknown; the dietary, the sleeping hours, the times of study, the social amusements and occupations seem to be governed by the cooperative caprice of willful children and foolish parents. At the best, the hurried meal at breakfast and the ill-suited luncheon too often develop gastric and intestinal derangements, which again, combined with the morning hurry, tend to promote constipation, and so back again to the anæmia with which we started. If the conditions are worse, then the results are proportionally exaggerated.

A word about the nervous manifestations. School life has been charged with a considerable influence in the production of chorea. There is no doubt that a choreic child should be relieved from enforced use of its eyes, and from the often inconsiderate society of its schoolmates, but that school life or study very often is the main factor in the ætiology of the disease I must doubt. Its greatest frequency coincides with the developmental age, six to fifteen, and I believe that it is as likely to occur in children out of school as in. The frequency with which the disease appears in spring has been thought to depend upon the fatigue of the preceding winter's school work. I believe that it should be charged rather to the defective hygiene of the winter, and very probably to that enforced abstinence from fresh, especially green, vegetable food through the cold months. Physiology offers in explanation of this singular demand the difference between animal and vegetable nucleo-albumins. Be this as it may, we have the widest clinical evidence of the need. The same factor enters into the ætiology of anæmia.

The nocturnal restlessness of school children is often adduced as an evidence of overwrought brains, and we all know the impropriety of sending a child to bed with its imagination excited. But when a child is taken out of school because he grits his teeth in his sleep without the state of its gums or of its intestinal canal being investigated, I fear that those in charge of the child are themselves a trifle "overeducated."

It is not worth while to go over in this manner the multitudinous ailments of school-child life. These few points illustrate, as well as would many more, what I believe is the true position—namely, that overstudy is very rarely the true cause of physical ailments, but that physical ailments generally underlie difficulty in school work, and that the physician should never accept "overstudy" as a cause for deranged health until he has carefully sought for and failed to find a physical reason. When he has thus investigated he is in a position to determine to what degree study may be continued.

What I have said is not to be interpreted as overlooking or underrating the exciting elements of school life—the proper rivalry, the stimulation, often to a morbid degree, of conscientiousness in work, and all the rest; but it is a plea for the recognition of the fact that all these things are usually easily borne if the body is in sound condition.

THE THERAPEUTIC VALUE OF ALCOHOLIC STIMULANTS.

By F. A. CASTLE, M. D.

It has often been remarked that many things besides comets, wars, pestilence, and taxes occur periodically, and one such event appears to be an essay to explain the medicinal values of alcoholic stimulants. Feeling, as I do, that the occasion has arrived for the last-named infliction, I beg to offer the following, with the difference, however, from customary writings, of its relation chiefly to something else than alcohol *per se.*

It does not appear to have occurred to the thinking of most writers (the lamented Francis Edmund Anstie being a notable exception) that the inherent virtue of any alcoholic stimulant may be because of something else than alcohol, or that the existence of that something else is what chiefly determines the value of the thing rather than the percentage of alcohol does.

When one pays five or more dollars for a bottle of Château Yquem or Johannisberger, it is not on account of its alcoholic strength, nor is it the alcoholic element of any old wine or liquor that gives to it especial value.

When time was that "three-bottle men" were carried home by their valets, from under the table, after their port or madeira, but who "rode to hounds" on the day following and were again "under the table" after dinner, and so on diurnally, their inebriety was because of something besides C_2H_5OH.

When it is presumed, from data afforded by chemical analysis of any wine or liquor, that the analyst includes in it the sum total of its ingredients, it is regardless of an element which is not appreciable by chemical means as yet, but which, none the less, holds about the same relation to the thing as does the part of Hamlet to Shakespeare's rendering of it.

When an Ulster Hibernian can acquire four "royal jags" in one day and sober up between times, he does not avail himself of *potheen* therefor, however inexpensive may be the illicit distillation, or good otherwise; but he uses something more nearly akin to the true inwardness of good old wines and liquors, albeit less savory (*i. e.*, ether). He escapes, moreover, liability to acquire hepatic cirrhosis and some other pathological conditions that commonly follow alcoholic consumption.

It is the volatile ethers produced by oxidation of the alcohol and other elements of wine and distilled spirits which give to them not only their commercial but their chief therapeutic value. Therefore, when their use is needful, be careful to possess them. When a fresh bottle of wine or liquor is opened, decant its contents at once into smaller bottles and cork them tight. Then the last-used will be as serviceable as the first, and not of lesser value or essentially harmful as when taken only from the original container, from which, because of its frequent opening, the volatile ethers have mostly escaped. He who fancies his ability to get as good effects from a mixture of corresponding proportions of alcohol and water will only fool himself and "foozle" his patient.

51 West Fifty-eighth Street, *December 23, 1899.*

DIGITALIS AND ACONITE: THEIR PHYSIOLOGICAL AND THERAPEUTIC ACTION.*

By F. O. HAWLEY, M. D.,
CHARLOTTE, N. C.

If each of the members of this society were requested to name a list of drugs which he considered indispensable to success in clinical work, I venture the assertion that most if not all the replies would include digitalis and aconite. Perhaps a majority would select ergot, and not a few would mention Indian cannabis, strophanthus, convallaria majalis, or squill, as remedies that might each be considered a *sine qua non* to the general practitioner.

It is my purpose to rehearse briefly the physiological and therapeutical effects of digitalis and aconite, after which I shall present for your consideration certain facts relating to the advantages and the importance of selecting and employing only physiologically standardized preparations of such drugs as digitalis, aconite, ergot, Indian cannabis, etc.

Digitalis is to all intents and purposes the typical cardiac stimulant, or perhaps it would be better to style it a cardiac tonic. Other remedies, as you well know, have been brought forward and their use suggested for the purpose of displacing digitalis, but with the exception of strophanthus and convallaria majalis none of the proposed substitutes can compare with it in efficiency. Professor Lawrence Wolf, of Jefferson Medical College, was wont to say to his class: "Gentlemen, there is only one digitalis, and that is the great digitalis."

The first noticeable effect of a toxic dose of this drug is a marked reduction of the pulse rate, due to a prolonged diastole which, according to H. C. Wood, may be interrupted, but is more generally divided by an ineffectual attempt at ventricular contraction. The force of the systole is excessively increased, so that the ventricular walls become blanched as the last drop of blood is violently expressed. Finally, a condition supervenes which might be termed tonic spasm of the cardiac muscle; the systolic effort grows feebler; eventually a portion of the ventricle constantly remains in a state of systolic spasm, until at last the organ ceases to act altogether.

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* Read before the Charlotte, N. C., Medical Society, November 14, 1899.

The characteristic effects of digitalis are in the main due to the action of the drug directly upon the cardiac muscle, and not to any influence conveyed through the central nervous system. This statement is substantiated by the experiments of pharmacologists who have shown that these phenomena occur after section of the vagi and destruction of the cord, while more than thirty years ago Eulenburg and Ehrenhaus found that digitalis acts *at once* upon the heart when applied locally and before sufficient time has elapsed for the drug to be absorbed and carried to the cerebral centres. However, we must not lose sight of the fact that the reduction in the pulse rate produced by digitalis is in all probability due to its stimulating effect upon the peripheral filaments of the pneumogastric.

By no means the least important effect of a full dose of digitalis is an enormous rise of the arterial pressure, which is not entirely owing to increased systolic activity, but perhaps largely to a reduction in the calibre of the capillaries. This effect is manifestly brought about through the medium of the vasomotor system, and therefore indicates that digitalis is a direct stimulant to the vasomotor centre.

To sum up, then, the principal physiological effects of this valuable though powerful drug, we have observed that—

(*a*) Digitalis reduces the pulse rate—prolonging the diastole by stimulating the peripheral ends of the pneumogastric.

(*b*) It increases the force of the systole by its directly stimulating effect upon the cardiac muscle.

(*c*) It markedly increases arterial pressure by stimulating the vasomotor centre in the medulla, thereby reducing the calibre of the systemic capillaries.

The therapeutic effect of digitalis, while, of course, less intense in degree, may be said to be the same in character as the physiological effects. In other words, in therapeutic doses digitalis retards the pulse rate, increases the force of the heart's action, and contracts the arterioles. Our knowledge of these effects enables us to formulate with scientific accuracy the rational indications for the use of this drug in the treatment of organic cardiac lesions.

In general, digitalis is indicated in those diseases of the heart in which the organ is evidently incapable of performing its normal task. When about to undertake the treatment of any case of cardiac disease it is extremely important that the physician should study the condition thoroughly, and strive to acquire an accurate understanding of the capacity of the heart to do its work, as well as to differentiate the particular lesion. The latter may appeal more temptingly to the scientifically disposed individual; the former is eminently the more practical course to pursue.

Without entering into a discussion of the pathology and treatment of the various cardiac diseases, which my time precludes, I must content myself with the consideration of the general indications for the use of this valuable remedial agent.

Digitalis should never be given in cases of excessive compensatory hypertrophy, or in simple hypertrophy, lest it do harm instead of good. This fact has been known empirically for a long time, and happily has been verified by modern experimenters in the field of pharmacology. It is of signal value in mitral stenosis, as you all have had abundant opportunity to prove; here it relieves the attendant pulmonary hyperæmia and increases the amount of blood in the systemic circulation. In mitral insufficiency, where the mechanism is different, a similar condition exists and may be as readily relieved by the judicious use of digitalis.

In a case of aortic stenosis we are all well aware that we may expect to find compensatory hypertrophy. But the time will come when the power of that heart will begin to fail. Then we shall have a steadfast remedy in digitalis. In aortic insufficiency its use seems to be more limited, as the prolonged diastole permits of a greater measure of regurgitation and consequent risk of overdistention of the left ventricle.

Digitalis may be used with advantage in cardiac dropsy, in the second stage of pneumonia, and in typhoid fever and other exhausting fevers. It forms a valuable adjuvant in diuretic mixtures when it is desired to influence the blood pressure. In collapse and shock, or in poisoning with aconite, delphinium, or muscaria, to each of which it is a physiological antidote, digitalis is clearly indicated.

This drug should not be used in any pathological state in which there is a notable arterial excitement—*e. g.*, in cerebral hæmorrhage—even though the condition of the pulse may seem to suggest its administration, nor in aneurysm or marked arterial atheroma.

I advise that care always be exercised to select a reliable preparation whenever a drug so powerful in its action and so pronounced in its effects as digitalis is to be administered. I believe that none but a physiologically standardized specimen should ever be used, for good and sufficient reasons, which we shall consider presently.

In the entire range of materia medica I do not recall a more forcible illustration of physiological antagonism than that exhibited between digitalis and aconite. This antagonism is particularly emphasized in the diametrically opposite clinical effects of the two drugs upon the heart and circulation; and it is with reference to this phase of the subject that I shall devote a few moments to a consideration of the physiological and therapeutical action of aconite.

Upon the heart aconite exerts a very pronounced effect. Wood classes it as a cardiac sedative. In animals the administration of aconite is followed at first by a reduction and later by a rapid increase in the pulse rate, with notable loss of systolic power, until at last the action of the organ is totally arrested in diastole.

The experiments of Wartmann and Bohn indicate that aconite increases the pulse rate by gradually paralyzing the peripheral vagi, in direct contrast, as you will observe, with the action of digitalis, which stimulates the peripheral ends of the vagus and thus reduces the pulse rate. In precisely the same manner a physiological dose of aconite disturbs the respiratory function. Under its depressing influence the respirations become slower; each inspiration is followed by a prolonged expiration, and that, in turn, by a protracted pause. The entire respiratory cycle resembles very much the series of phenomena that we observe on section of the vagus, indicating therefore the paralyzant effect of aconite upon that nerve.

By its action directly upon the heart or its contained ganglia this drug diminishes the force of the systole and lowers the blood pressure. Let us bear in mind the fact that the reduction of the blood pressure under aconite is not due to any influence of the drug upon the vasomotor apparatus. This statement seems to be abundantly sustained by the fact that in aconite poisoning a rise of arterial pressure follows galvanic stimulation of the vasomotor centres.

Upon the nervous system aconite exerts a peculiar influence which is worthy of mention *en passant*. I refer to its well-known anæsthetic effect, due, no doubt, to paralysis of the perceptive centres, the peripheral end filaments, and finally the nerve trunks. It is considered by competent observers to be a fact that paralysis of the sensory nerves begins at the peripheral termini, thus accounting for early loss of reflex activity in aconitism.

From the foregoing argument let us proceed to deduce our therapeutic conclusions. As in the case of digitalis, the therapeutic effect of aconite differs from its physiological effect mainly in degree. The chief indication for the use of this remedy is primarily to lower cardiac activity and arterial tension, and secondarily to reduce elevation of temperature in sthenic states. Although veratrum viride seems to be the favorite arterial sedative with many practitioners in the treatment of pneumonia and puerperal eclampsia, a physiologically tested preparation of aconite may be depended upon to yield as satisfactory results to those who elect that mode of treatment. It is of service in the early stages of almost any acute inflammation, such as gonorrhœa, and in certain of the febrile exanthemata of childhood, as scarlatina and rubeola; its administration in these conditions must not be prolonged after the characteristic effect upon the pulse has been secured. It may be employed with advantage in follicular and interstitial amygdalitis, acute rhinitis, laryngitis, and bronchitis. In pericarditis its beneficent action is dependent upon its ability to soothe the excited heart. In selected cases of cardiac hypertrophy, when the force of the systole is out of all proportion to the work which the organ is called upon to perform, aconite may be given cautiously and with benefit. This powerful agent has long enjoyed an excellent reputation in the treatment of neuralgia, internally and locally, and for the relief of that distressing and obstinate malady, emesis gravidarum. Its salutary action in these conditions is undoubtedly the result of its capability of allaying sensory excitability.

Aconite is an exceedingly powerful remedy and, in my opinion, no practitioner should content himself with any other than a preparation which has been physiologically standardized if he would aim always to secure definite results.

Is there one among us who has never experienced surprise, nay, rather, disappointment, in the administration of an extract of some powerful drug?

Permit me to sketch in dim outline a scene with which we are all more or less familiar, and which will serve to illustrate the point I wish to make. The physician, after a thorough physical examination of a case upon which his attention is concentrated, prescribes a definite dose of digitalis, for example, which has been carefully adjusted to meet some particular indication. The result may or may not be satisfactory. In the latter contingency, in a justifiable effort to compensate for apparent remedial inefficiency, the dose is cautiously increased until the drug begins to manifest its power. So far so good; yet the practitioner feels certain that the specimen of digitalis he is using is not so active as it should be.

By and by the phial of medicine is exhausted; a new prescription is given the patient with directions to procure a fresh supply and to continue its use in the same dose as before. In a day or two the physician is hastily summoned to the bedside of his patient, who has been seized with uncontrollable vomiting. His face is pallid, his heart is beating violently, and the *tout ensemble* betokens that something of a serious nature has occurred. Explanations naturally follow, the substance of which is that on the new prescription the patient received a much stronger preparation of digitalis than before. He proceeded to take it in the same quantity, and of course is merely suffering from an overdose of a drug which in proper amount would benefit him immeasurably.

This is by no means an overdrawn illustration. In the crude state aconite, belladonna, Indian cannabis, ergot, digitalis, convallaria, strophanthus, and many other important drugs vary remarkably in proportion of active principle. No less an authority than the *Bulletin of Pharmacy* is responsible for the statement that

Professor Puckner, of the Chicago College of Pharmacy, assayed nineteen samples of belladonna leaves procured from dealers who were told that only the best was wanted, and that purchase would depend upon the results of assay. He found these nineteen samples to range in alkaloidal contents from 0.01 per cent. to 0.51 per cent.! The strongest sample fifty-one times as strong as the weakest!

The editor of the *Bulletin* thus voices his sense of mental perturbation over the apparently chaotic condition of materia medica: "Is it cause for wonder that physicians fail to get any results whatever in some instances, and in others produce symptoms of poisoning in their patients? Is it at all surprising that they are driven with despair to the use of alkaloids?"

No matter how much care is taken in the choice of the crude drug, we find that finished preparations are liable to vary in medicinal strength, and their administration may be followed by vexatious results, ranging from almost nothing to the full physiological effects.

There is but one remedy for this unsatisfactory state of affairs. Every important drug which can be so treated must be subjected to a scientific chemical analysis to determine what proportion of active principle it contains. Then it should be an easy matter to so adjust the strength of the finished product that a given dose shall always represent a fixed amount of alkaloid or other active principle.

Although chemical methods of drug assay are in use by the leading pharmaceutical manufacturers in this country, they are enjoined by the *United States Pharmacopœia* only in the case of extracts of nux vomica, cinchona, and opium, which are required to contain definite percentages of their respective alkaloids.

Why should not a similar standard be made to apply to extracts of every important drug? There seems to be no valid reason why the revision committee of the forthcoming pharmacopœia should not extend the principle of standardization to every powerful drug that is amenable to chemical assay, but at the same time let it be understood that that method will not apply to a large number of valuable drugs which can not be standardized by chemical means. Among these we may mention aconite, Indian cannabis, cantharides, ergot, digitalis, strophanthus, convallaria, squill, elaterium, and others equally important. These drugs can not be assayed in the laboratory of the chemist because their active principles decompose in the process of separation; therefore the results of their chemical analysis are vague and unreliable. The only rational method by which we can determine their strength is that known as physiological standardization.

Some of our great pharmaceutical manufacturing houses have gone into this subject in a scientific way, and have very completely equipped laboratories under the control of expert pharmacologists who test upon living animals all preparations of important drugs that can not be assayed chemically. In these establishments Indian cannabis is tested upon dogs. The oxytocic power of ergot is determined by observing its effect upon pregnant animals, and its hæmostatic action is estimated by noting the effect upon the combs of cocks, which become blackened and even gangrenous under its influence. The heart tonics, such as digitalis and strophanthus, are tested upon frogs, the demonstration of their action being accurately portrayed by kymographic tracings. Special apparatus is also provided to determine the physiologic effects of other medicinal agents upon the blood pressure, the heart, the respiratory apparatus, and the localization of their action in the nerve centres.

The crude drug is thus tested before it is accepted as fit to enter into the composition of medicinal preparations, and the finished product is again tested in the same way. Any variation is then corrected, so that a given dose of a physiologically standardized preparation may be depended upon to yield a positive result.

In conclusion, let me say only this: It seems to me that the importance of specifying standardized preparations must appeal to the intelligence of every medical practitioner. The advantages which they afford, such as reliability, assured activity, and uniformity of dose, render comparison of these with unstandardized, and therefore unreliable, preparations absurd and impossible. The welfare of the patient and the good name of the physician can only be enhanced by the adoption of physiologically standardized preparations.

26 WEST TRADE STREET.

THE GENERAL TREATMENT OF PHTHISIS PULMONALIS.*

By GEORGE A. EVANS, M. D.

It is generally believed by medical men that two concurrent ætiological influences operate in the production of this disease—predisposition and the tubercle bacillus. The former may be inherited, it may be due to congenital defects, it may be the result of vicious habits or of an unhygienic mode of life, the outcome of ignorance or of poverty. The latter is found more or less everywhere, associated with dust in the atmosphere, among the habitations of man.

A young adult whose vitality is at a low ebb contracts a catarrhal affection of the air-passages—a mucopurulent secretion results; part of this is expectorated and part of it is retained. This latter acts as a pabulum for the nourishment and multiplication of the tubercle bacilli which have entered the respiratory tract with the inspiratory tidal air. Now, should it so happen that a few of these micro-organisms find a resting place where they will not be disturbed for approximately twenty days, not only new colonies of the germ but tubercles will be developed. The softening of these tubercles is accompanied by the various phenomena which are symptomatic of pulmonary consumption.

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* Read before the Brooklyn Medical Society, October 20, 1899.

Pulmonary phthisis, occurring between the ages of twenty and thirty years, is to my mind more frequently due to the softening of latent tubercles—tubercles which have developed in the lungs during early childhood, the result of infection, at first of the post-pharyngeal lymphatics, then the bronchial glands, and finally the lungs themselves. These soften during young adult life the first time the systemic vitality is profoundly depressed. The symptoms which usually command our attention are cough, expectoration—at first of normal mucus mixed with air, then of a mixture of mucus and pus, and finally of almost pure pus containing caseous matter, blood-corpuscles, and disorganized lung substance, giving evidence on microscopic investigation of widespread mycosis, putrefactive decomposition, and bacillary growth—chills, sweats, progressive loss of flesh and strength, anorexia, pain, dyspnœa, etc.

During the initial stage—*i. e.*, when tubercles are developing and infiltrating lung tissue—we often have no cough, or a slight dry cough, or a cough with scanty mucous expectoration. Pus is absent, there is no mixed infection and no septic absorption. The symptoms of pulmonary tuberculosis *per se*, pure and uncomplicated, therefore, are cough and dyspnœa; practically all the other symptoms which have been enumerated and which occur after the appearance of pus in the expectoration, if we except occasional cases of acute miliary tuberculosis, are pathognomonic of systemic toxæmia—septicæmia.

Understanding the matter in this light, the treatment of the disease after the appearance of pus in the expectoration, and after softening has begun, should manifestly be different from that of the initial stage in which the process of putrefaction and the invasion of the systemic circulation by septic agents play no part. In addition to this we must not fail to take into consideration the element of self-infection, the great and only obstacle to spontaneous recovery, which in the early stage of pulmonary phthisis is relatively slight when compared with its rapid and aggressive action in the later stages, when abundant purulent material is in the air-passages.

The bacillus of tuberculosis and the bacteria of putrefaction do not develop, as a rule, in normal mucus, as you well know, while when purulent material is in the air-passages all the conditions exist favorable to their rapid growth and multiplication.

Ziegler tells us (*Herkunft der Tuberkelemente*) that tubercle is essentially defective granulation tissue; its defect consists in a deficiency of capillary loops, and that is why tubercle is so prone to soften—the nutrition of this tissue sympathizes with and is dependent upon the nutrition of its host. Therefore, if the vitality of the latter is maintained to a high degree, the former will not degenerate or soften. It has been frequently said that we all have tubercles in our tissues and that they do no harm if their softening is prevented. However that may be, I think we are all satisfied that it is the softening of tubercle that constitutes the disease under consideration.

The indication for treatment in cases of tubercular consolidation of lung tissue is undoubtedly to maintain the body vigor of those affected, and this is best done by removing the patient as soon as possible from the operation of any and all physically depressing influences.

An inherited predisposition and congenital defects, such as a delicate physique, weak tissue vitality, the so-called strumous condition, flat chest with small antero-posterior diameter, large lungs with inefficient circulation, flabby muscular development, and the like, suggest their own remedies, as do also vicious habits, unhealthy occupations, and a sedentary life. Ignorance and poverty are the two most important factors, however, with which we have to deal and the most difficult to antagonize; the former of these, I regret to say, is found almost as frequently among the wealthy as among the poor. It is in the early stage of the disease, before the onset of the softening, that hygienic and climatic treatment affords its most brilliant results. Simple tonics, good food, pure air, and an out-of-door life with moderate exercise, will in the larger proportion of cases bring about splendid and speedy recovery. The influence of temperature on tuberculous tissue is exceedingly pronounced. The mean level of the temperature has no significance for the frequency or rarity of phthisis in any locality, but, as Hirsch and other prominent observers inform us, it exercises a very decided influence on the course of the disease, for, according to nearly all authorities in tropical and semitropical countries, it runs usually a much more rapid and pernicious course in these regions than in higher latitudes. Cases of early phthisis, therefore, should be sent to a climate where the atmosphere is cool or cold, so that the disposition of their tubercles to soften will be lessened. In Central America and in the West Indies pulmonary tuberculosis runs its course in a few weeks or months at the most, while in central or northern New York it requires from two to three years, and this difference is due to the difference in temperature. Humidity of the atmosphere in itself is not objectionable, except in so far as it operates to hold the heat of the daytime in the air throughout the night. In districts in which the relative humidity is low the nights are always cool. Such places are found on the western slope of the Appalachian chain and on the eastern slope of the Cordilleran systems. Humidity is the great balance wheel of temperature—it prevents the atmosphere from heating up rapidly, and it prevents its rapid cooling. Coast regions are therefore not adapted to tuberculous subjects. Precipitation is always greater on the ocean slope of mountains near the coast than on the opposite side of the same chain. It is more or less intimately associated with humidity, and frequently operates to prevent the invalid from going out of doors. Atmospheric tension and barometric pressure do not possess the great value that we were a few years ago led to believe. Attenuated air localities demand greater and more frequent respiratory effort than at sea level—the patient gets less oxygen through his lungs into his circulation with the same muscular effort—his breathing area or vital capacity has already been lessened by the tubercular or fibrous infiltration, and why a further embarrassment of his respiratory functions should be beneficial I have never been able to understand. The circulation, however, is markedly stimulated, and the nutrition of the lungs is undoubtedly accelerated at first, and emphysema of normal lung tissue occurs. To my mind the meteorological factor characteristic of great altitudes which is the most serious to phthisical subjects in the first stage of the disease is the nocturnal low temperature, which is dependent upon the dryness of the air, which is the result of altitude and remoteness from the ocean. Great elevation produces extreme effects, and clinical experience shows that except in isolated cases moderate elevation gives the best results. One type of climate is distinguished from another by various combinations of the four meteorological factors—viz., temperature, barometric pressure, humidity, and precipitation. Drainage and the water supply are factors which influence the healthfulness of a locality, but they are not the climatic factors.

According to the vital statistics report of the Tenth Census of the United States, the great health region of this country is the western slope of the Appalachian system from Maine to Alabama, and it is this region which affords the best results in the climatic treatment of pulmonary tuberculosis in its early stage.

Theoretically this should be so because of the favorable combination of the four meteorological factors: the nights are cool, humidity is small, precipitation moderate, and the air tension may be regulated from an elevation of five hundred to five thousand feet. The drainage is good, the water supply pure, the comforts of home are easily obtained, and living is inexpensive.

There is nothing specific in climatic influences—suppurative processes and septic absorption go on practically the same in a pure-air locality as in the heart of a great city. A good climate, with good food, out-of-door life, and good habits, addresses itself to an improvement in the general health, and under such an influence tubercles which have not yet begun to soften may be prevented from doing so.

The proper treatment for cases of pulmonary tuberculosis after the necrosis of tuberculous tissue has begun, after purulent matter has made its appearance in the sputum, after evidences of local sepsis and septicæmia have appeared, is drainage to stop the local sepsis and the systemic absorption of septic agents, but above all to limit or prevent self-infection. Spontaneous recovery would occur in all cases of chronic pulmonary tuberculosis were it not for repeated self-infection. We have been informed by Böllinger, Nutall, Prudden, and others that the average consumptive expectorates several hundred millions of tubercle bacilli in twenty-four hours. Society is trying to prevent these subjects from expectorating their bacilli because of the danger of infection to those who are in health. Now, if these bacilli are so dangerous to the tissues of healthy, robust people, how much more are they liable to set up trouble in the remnant of a sound lung a patient may have left, if he retains these germs in his air-passages! What chance for recovery has a man who possesses about two thousand square feet of respiratory surface bathed more or less with bacillary muco-pus exposed to the constant influence of atmospheric air? Of what value will be the perfunctory applications of cod-liver oil, creosote, hypophosphites, and cough syrups to the gastric mucous membrane, hoping for absorption and a systemic effect, and then somehow in an inexplicable manner a local influence which will end in recovery? Naturally, the questions arise at this point, "What are we to do?" Can we hope with reason that a specific for the destruction of the bacillus in the patient's lungs will be found?

In reply to the first question, I am impelled by my understanding of the matter, together with my experience, to say that we must first stop self-infection, then the putrefactive decomposition of the sputa and the absorption of septic agents.

To the second inquiry I can only say that I believe that were it possible for any medical man to devise a way or means for the total destruction of the tubercle bacilli in any given consumptive's lungs, the germs would soon be replaced in his tissues from the atmosphere, which contains them in countless numbers in the form of floating dust. Drainage, therefore, is imperative—just as much so as it is in the tissues of the external parts of the body accessible to local antiseptic manipulations—in fact, even more so, because in the latter we have only the micro-organisms of putrefaction to deal with, while in pulmonary tuberculosis we have in addition the tubercle bacillus, which, though slower in developing, is much more tenacious of life. Drainage of the respiratory tract may be accomplished only in one way, and that is by expectoration, and this must be accomplished by local treatment.

The internal administration of drug expectorants will not accomplish this satisfactorily, because they operate by increasing the secretion of mucus from the bronchial mucous follicles; now, inasmuch as the mucous membrane of bronchial tubes having a diameter of less than a twelfth of an inch does not contain mucous follicles, and in view of the fact that usually tuberculous processes occur beyond or on the distal side of tubes of this calibre, their inability to serve is apparent.

Clinical experience has demonstrated that it is impossible to inspire compressed air where an albuminoid fluid is present in the air-passages without causing its expectoration, and that bronchial tubes and pulmonary alveoli which are at all permeable by atmospheric air at normal tension are much more so by compressed air. In recent years this fact has been taken advantage of, and the administration of compressed air in large quantities, associated with antiseptics, has taken its place by the side of well-established scientific procedures. The results of treatment by this means of chronic affections of the respiratory organs have been in my hands most gratifying. Of course, these cases do not all recover. Many tuberculous subjects will have small areas of lung tissue so densely consolidated as to be no longer pervious to air, compressed or otherwise; while other portions of the lung, though infiltrated with tubercle to a marked extent, admit air and are amenable to treatment. Sometimes caseous material will exist in a circumscribed mass, inclosed with a pyogenic membrane, and unless this membrane ulcerates or ruptures into a bronchial tube drainage can not be secured; and, again, plugs of mucus or of muco-pus may form in bronchial tubes, thereby cutting off a considerable number of pulmonary alveoli from the drainage which had previously existed, causing them to retain the products of diseased tissue, mixed with micro-organisms and air. Such occurrences are indicated by a rapid rise in the patient's temperature.

The antiseptic which to my mind should be placed preeminent, and which has given the best results in my hands in association with compressed air for the treatment of pulmonary tuberculosis by inhalation, is phenol, in the so-called crystallized state of carbolic acid, in from twenty-five to thirty-five per cent. solutions in equal parts of glycerin and water. The use of this solution in the form of a fine spray for thirty minutes every day under a pressure of about one twenty-fifth of an atmosphere is followed by an immediate improvement in all cases, and in cases not too far advanced, which follow out a hygienic course of management as well, recovery occurs as a rule.

The hygienic management of cases of pulmonary phthisis is difficult. It is not enough for the medical man to advise in a general way—detailed instructions must be given regarding the diet and the habits. In order to save time and to obviate forgetfulness on my part, as well as that of the patient, I have had a little folder printed, which may be carried in the pocket, one page containing directions concerning the diet, and the other directions I have thought advisable to suggest, which I will read at the suggestion of one of your committee:

DR. G. A. EVANS'S DIET LIST.

May take—

Soups, Broths, etc.—Bouillon; mutton, chicken, oyster, clam, turtle, tomato, barley, rice, bean, pea.

Fish.—All kinds that are found to "*agree*"—boiled, baked, stewed, or broiled.

Shellfish.—Oysters: raw, roast, or stewed.

Meats, etc.—Beef, rare, broiled, or roast; chopped beef patties; "Hamburger steak"; lamb or mutton chop, broiled; roast lamb or mutton; poultry, roast or broiled; game, roast or broiled; sweetbreads; brain; predigested meats ("beef peptonoids," "sarco-peptones," "liquid peptonoids," "beef meal," "peptonized beef tea," etc.); stewed tripe, gelatin, Neufchâtel or cream cheese, clabber.

Eggs.—Raw (raw, beaten with boiled milk, sherry, whisky, sweetened), poached, boiled.

Vegetables.—Greens, lettuce, celery, spinach, asparagus, cresses, cauliflower, Indian corn, young onions, tomatoes; green peas, string beans, lentils, and other leguminous vegetables; potatoes stewed with cream and roasted (sparingly).

Cereals (sparingly).—Cracked wheat, hominy, oatmeal, rice, wheat cakes, wheat bread, gluten bread, rye bread, "Graham bread," corn bread, toast, milk toast, zwieback.

Fruits, Nuts, etc.—Oranges, lemons, pears, plums, apricots, grapes, peaches, nectarines, fresh figs, fresh dates, melons, baked apples (sparingly); English walnuts, almonds, filberts, pecan nuts, roasted or boiled chestnuts, olives.

Drinks.—Pure water, hot water, Apollinaris and other carbonated waters, boiled milk (with or without Vichy), cream, milk punch, eggnog, peptonized milk, kumyss, lemonade, ginger ale (brandy, whisky, wines, and malt liquors as occasion requires), cocoa, chocolate, tea.

Avoid—

Iced drinks, ice cream, water ice, saccharine foods, pies, pastries, puddings, made dishes, salt and smoked meats and fish, all fried food. Starchy or farinaceous foods should be used very sparingly: macaroni, spaghetti, potatoes, turnips, carrots, parsnips, beets, arrowroot, cornstarch, sago, tapioca.

DR. G. A. EVANS'S GENERAL DIRECTIONS.

Retire between 9 and 10 o'clock P. M. regularly.

Arise between 6 and 7 o'clock A. M. regularly.

Remain within doors until at least one hour after sunrise.

Retire within doors before sunset.

Wear underclothing, and all other clothing, adapted to the season of the year.

Eat slowly when the nervous system is tranquil and when the body temperature is not high.

Do not take much liquid during or shortly after mealtime.

In cases of faulty digestion it is better to take small quantities of food frequently—about six times daily.

Spend six hours daily in the open air, protected, if necessary, from wind and rain.

Do not sleep in a heated room at *any* time.

Do not sleep or room with another.

Keep one window, at least, open in your sleeping room (up from the bottom) *always*.

Discontinue physical and mental labor, if possible.

Avoid excitement, depressing mental environment, introspection, and violent muscular effort.

Avoid draughts and gusts of air.

Avoid dusty places.

Avoid damp places and foul-air localities.

Avoid auditoriums—viz., theatres, concert and banquet halls, schools, churches, and crowded places of every kind.

Keep a daily (morning, afternoon, and evening) record of the body temperature.

When the temperature is more than 99.5° F., avoid exercise.

When the temperature is more than 100.5° F., lie down until the fever subsides.

When the temperature becomes and remains less than 98° F., a tablespoonful of brandy or whisky in sweetened hot water may be taken.

Tub baths should not be taken. Sponge baths of tepid or cold water, however, are very beneficial.

The habit of breathing deeply and slowly should be acquired.

Never breathe through the mouth.

Should lying on the sound side of the chest excite cough and expectoration, the patient should remain in that position until the cough no longer causes expectoration.

In the light of our present knowledge regarding diseases of the lungs and air-passages, it is the *moral duty* of those who suffer from such affections *personally to destroy, either by fire or by boiling water, whatever they may expectorate.* This may be done conveniently by using a pocket spit cup; or, in case a handkerchief is used, to boil it before the sputum it contains can dry.

Pure carbolic acid, one part, to water, twenty parts, may be used to disinfect cuspidors.

In sending tuberculous patients away for climatic treatment, I advise them to take the body temperature three times daily, about 9 A. M., between 2 and 3 P. M., and between 5 and 7 P. M., and inform them that so long as their temperature between the hours of 2 and 3 P. M. is normal and the body weight is increasing, though slightly, local improvement is going on. If, however, the temperature at that time of the day is above the normal, even though the body weight is increasing, the local condition is growing worse. A considerable clinical experience has taught me that this is a reliable method of procedure.

On June 20, 1893, I made the following statement in a paper which was read before the Medical Society of the County of Kings: "A febrile temperature exists in all the stages of phthisis pulmonalis; its daily maximum rise occurs, as a rule, between 1 and 3 P. M. In view of this fact a daily appearance of fever, even though slight, having its maximum rise during the afternoon, should be regarded as evidence in favor of the existence of pulmonary phthisis."

And believing in this, as I sincerely do, and knowing the disease to be eminently a progressive one, I must conclude that when a febrile temperature continues, having an afternoon maximum, an increase of the body weight to the contrary notwithstanding, the patient is losing ground. In conclusion, I should like to make a plea for the more *active medicinal and hygienic treatment of phthisis.* Personally, I should feel that I had committed a great wrong if to-day I permitted myself to manage a case of this disease in the old-fashioned perfunctory manner.

A PLEA FOR THE
MORE EXTENDED USE OF ANTITOXINE
FOR
IMMUNIZING PURPOSES IN DIPHTHERIA.*

By JOHN S. BILLINGS, Jr., M. D.,
ASSISTANT DIRECTOR OF THE BACTERIOLOGICAL LABORATORY, DEPARTMENT OF HEALTH, NEW YORK CITY.

SINCE the introduction of the antitoxine treatment of diphtheria in New York city in 1896 there has been a steady reduction in the number of cases of diphtheria occurring each year, and in the mortality from this disease, down to January 1, 1899. During 1899, however, there has been an increase in the number of cases of diphtheria and in the mortality, as shown by the following table:

TABLE I.—*Showing Number of Cases, Deaths, and Mortality (per Cent.) of Diphtheria in the Boroughs of Manhattan and the Bronx from 1891 to 1899 inclusive.*

PERIOD.	Cases.	Deaths.	Mortality (per cent.).
1891	5,364	1,970	36.7
1892	5,184	2,196	40.6
1893	7,021	2,558	36.4
1894	9,641	2,870	29.7
1895	10,353	1,976	19.1
1896	11,399	1,763	15.4
1897	10,896	1,590	14.6
1898	7,593	923	12.2
1899	8,240	1,087	13.1

This table shows the steady increase in the number of cases from 1891 to 1896. In that year the use of antitoxine first became general throughout the city, although it was first introduced in January, 1895. The moderate diminution in the number of cases of diphtheria which took place in 1897 became more marked in 1898, the reduction amounting to 33.3 per cent. Along with the reduction in number of the cases there was a steady diminution in the number of deaths, and a lowered mortality from the disease. But the records of this department show that during 1899 there were six hundred and forty-seven more cases of diphtheria and a hundred and sixty-four more deaths than in 1898. How is this increase to be accounted for, and how is it to be put a stop to? According to our present knowledge, it is improbable that diphtheria can ever be eradicated from such a large community as New York city: the best we can hope for is to reduce the number of cases to a minimum. Diphtheria is a very contagious disease, and can be contracted in a great many ways, thus furnishing a strong contrast to typhoid fever, for instance, epidemics of which are almost invariably due to contamination of the water supply. (Epidemics due to infected milk can always be traced back to infected water supply.) By purification of the water supply the disease can be practically obliterated. But in diphtheria the disease spreads from *person to person* through many channels, especially through childish habits, and those coming into contact with an individual suffering from diphtheria may become infected before the disease is recognized. Furthermore, the perfect isolation of children who have recovered from diphtheria, but in whose throats virulent diphtheria bacilli are still present, is impossible, especially among the poorer classes. The difficulty would be partially met by sending every case of diphtheria to a hospital for contagious diseases, and retaining it there until the diphtheria bacilli have disappeared from the throat and danger of infection is over. But this is still a question of the future.

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* A report to H. M. Biggs, M. D., director of the Bacteriological Laboratories of the Department of Health, New York City.

Turning to the consideration of the measures taken to prevent the spread of the disease, we may divide them into curative treatment; isolation of the patient until all danger of infection is past; disinfection of premises, etc., where the disease has occurred, and, finally, immunization with antitoxine of those individuals who have come into contact with the patient or have been exposed to infection.

The antitoxine treatment of diphtheria, while a specific and effective remedy, and lessening the number of deaths from the disease, can not alone bring about any marked reduction in the number of cases, for the reasons mentioned earlier in this report in the comparison of diphtheria and typhoid fever.

The records of this department show that antitoxine has been used in a greater number of cases in 1899 than in 1898, and with as good or better results.

Table II.—*Showing the Number of Cases of Diphtheria in the Boroughs of Manhattan and the Bronx in which Antitoxine was administered Free of Charge by this Department and Others in 1898 and 1899, with the Number of Deaths, Mortality, and also the Corrected Mortality after deducting the Cases already Moribund when Antitoxine was administered.*

Period.	Cases.	Deaths.	Mortality (per cent.)	Moribund deducted.	There remain		Mortality (per cent.).
					C.	D.	
1898.........	1,494	206	13.7	81	1,413	125	8.8
1899.........	1,902	234	12.3	91	1,811	143	7.8

This table shows that the number of cases treated in 1899 was greater than of those treated in 1898, and the results were if anything more favorable.

Furthermore, the methods of inspection, isolation, and disinfection in diphtheria, as practised by this department, have been carried out with the same care and thoroughness in 1899 as in 1898 and the preceding years; and no laxity on the part of the medical profession on the same score has been apparent.

But when we take up the question of immunization with antitoxine for 1899, we find that while there has been an increase in the total number of cases of diphtheria, and in the number of cases treated with antitoxine, there has been no corresponding increase in the number of individuals immunized against the disease; on the other hand, there has been an actual diminution, as shown in the following table:

Table III.—*Showing the Number of Individuals Immunized in the Boroughs of Manhattan and the Bronx by Inspectors of the Department of Health and Physicians; also the Number of Cases of Diphtheria occurring in Immunized Individuals.*

Period.	Number of individuals immunized.	Number of cases of diphtheria occurring after twenty-four hours or within thirty days.
1898	1,711	3
1899 (first 9 months)..	1,093	6

Note.—All of the 9 cases occurring after twenty-four hours and within thirty days in 1898 and 1899 were mild and terminated in recovery. Only 150 antitoxine units were used in each case.

The foregoing table shows what has just been stated.

It is not the purpose of this report to prove the efficacy of antitoxine as an immunizing agent against diphtheria. For that purpose, reference is made to the report of Dr. H. M. Biggs on The Serum Treatment and its Results, read before the New York Academy of Medicine in March, 1899, and published in the *Medical News*, July 22 and 29, 1899. But in passing, it is to be noted that out of 3,109 individuals immunized only nine contracted the disease, and these in a mild form. A minimum dose of antitoxine was used in each of these nine cases (150 units), and it is highly probable that if a larger amount had been used (300 to 500 units) immunization would have been perfect in every one of the 3,109 cases. The inspectors of this department, as the result of their experience, are now using 300 units or more as an immunizing dose, and I am informed by the most experienced member of the staff that the rashes and other occasional sequelæ of antitoxine administration are less frequent with these larger doses. In the division of bacteriology of this department a record is kept of all cases of diphtheria: not only of those in which cultures were taken, but also of all the cases reported to the Bureau of Contagious Diseases. From this index the following table has been compiled, showing the number of cases of diphtheria contracted after twenty-four hours from an original case in the family:

Table IV.—*Showing the Number of Cases of Diphtheria in the Boroughs of Manhattan and the Bronx from January 1, 1899, to January 1, 1900, secondary to a Case in the Same Family, the Number of Families in which such Infection took Place, and the Number of Deaths and Mortality (per Cent.).*

Number of secondary cases of diphtheria............	682
Number of families in which secondary cases occurred.	522
Number of deaths of such secondary cases..........	61
Mortality..	8.9 per cent.

These figures represent only the minimum number of secondary cases of diphtheria. As stated above, only those cases occurring at least twenty-four hours after the original case were taken into account. But in many cases the physician, either through carelessness or through faulty information on the part of the parents of the patients, has reported two or more cases as beginning on the same day. This occurred in 141 instances, which cases were not counted in.

Further, only the number of individuals of the same family name was estimated, although in many instances several cases occurred in the same house, many of which were doubtless in the same family circle. If antitoxine had been used to immunize these cases the total number of cases of diphtheria for 1899 would have been reduced to its proper figure; instead of 8,240 there would have been only 7,558, making the number of cases for 1899 less by 25 than for 1898; and the deaths for 1899 would have been reduced to 1,026.

A majority of the secondary cases occurred a week or more after the primary case. In many instances where the secondary case occurred some weeks after the primary case, it was noted that cultures from the primary case showed the presence of diphtheria bacilli at the time of inception of the secondary case. In one instance this was striking enough to be mentioned:

> F. W. had diphtheria, beginning March 9, 1899. On April 1st, while cultures from his throat still showed diphtheria bacilli, A. W., a sister, contracted the disease. She died three days later, on April 4th, when A. W., the mother, showed symptoms of the disease. Twenty days later S. W. contracted diphtheria, the cultures from the mother's throat still showing bacilli, and the cultures from the throat of S. W. showed bacilli until May 20th; the disease thus remaining active for two months and eleven days.

If the entire family had been immunized when the disease first manifested itself, the mother and two daughters, in all probability, would not have contracted it, and would have been spared death and suffering.

CONCLUSIONS.

1. The increased number of cases of diphtheria in New York city in 1899 is probably due, in part, to neglect of a most important prophylactic measure against the disease—*i. e.*, immunization by antitoxine.

2. Immunization furnishes one of the most potent means of preventing the spread of diphtheria and lessening the number of deaths from this disease.

3. It is probable that in some cases the immunizing dose of antitoxine hitherto recommended (150 units) is insufficient, and that at least 300 units should be used in children and 500 in adults. Owing to improvements in the mode of preparation and the increased concentration of the antitoxic serums now in use no ill effects are to be apprehended.

Faith Cure versus Mind Cure.—According to the *Albany Medical Annals*, says the *Medical Times* for February, Charles Dudley Warner says that the difference between the "faith cure" and the "mind cure" is that the mind cure doesn't require any faith, and the faith cure doesn't require any mind.

FOUR CASES OF DIABETES MELLITUS OF APPARENT BACTERIAL ORIGIN, AND THEIR SUCCESSFUL TREATMENT.

By J. P. SHERIDAN, M. D.

In the latter part of 1898 a writer in the *Medical Record* related his experience with bichloride of mercury in the treatment of diabetes mellitus and advanced the novel theory of the bacterial origin of this affection.

At the time of publication of the article in question I had some diabetics under treatment. As a moderately rigid antidiabetic diet and the time-honored remedies did not check the glycosuria in my patients, I adopted the newly proffered theory and eagerly prescribed the advocated chemical.

To-day, after a year's trial of germicidal remedies in diabetes, I have become a firm believer in the bacterial origin of diabetes. It is true, the bichloride of mercury did not prove a success in my hands, but this only tends to demonstrate the existence of a peculiar diabetic toxine, which has to be combated by other means. This toxine, in my opinion, is particularly apt to attack the nervous matter, which in turn gives rise to the well-known disturbance of metabolism in diabetes—namely, preventing the deposition of glycogen in the liver and muscles and causing its discharge by the kidneys in the form of grape sugar. The irritation of the vasomotor centres, to which may be attributed all the symptoms of diabetes, seems to be caused by this toxine. It is plainly the physician's duty to eliminate the toxic influences, for he thereby relieves the irritation of the nervous centres. However, he must be most careful in the selection of the proper remedy and in the administration of its indicated dose. The failures in diabetic therapy have to be ascribed either to a wrong medicine or its improper administration, or to both. The ideal antidiabetic drug should not only exert distinct germicidal and antiseptic powers, but should be a powerful alterative. At the same time the system should not become weakened and emaciated by its prolonged administration. On the contrary, the ideal diabetic remedy should afford great tonic properties.

Bichloride of mercury and auri et sodii chloridum, which latter is so much lauded of late by a Chicago physician, possess some of these desiderata, but neither proved of any success in my hands in the treatment of diabetes mellitus. This non-success is due to three factors:

A. The specific toxine of diabetes is affected only by a specific antiseptic.

B. Bichloride of mercury or auri et sodii chloridum, when pushed to their physiological tolerance, do not effect the decline of the glycosuria.

C. Bichloride of mercury as well as chloride of gold and sodium, when administered for any length of time and in larger doses, reduce the oxidizing power of the red blood cells, thereby weakening the system and producing rapid emaciation.

The remedy answering all the demands for an ideal antidiabetic I find in a combination of bromide of gold with bromide of arsenic, called by its makers "arsenauro." This preparation undoubtedly exerts a specific influence upon the bacteria and the toxine of diabetes mellitus, which is elucidated by the following four cases:

Case I.—Mr. C. L., aged fifty, American, clerk, consulted me on June 8, 1898. Family history was negative. Patient complained of polyuria, the existence of which dated back about three months. The frequency in urination he thought to be due to a stricture, the possible result of a neglected gonorrhœa. Patient had a moderate appetite, felt quite thirsty at times, and had lost some weight. The urine (which was voided to the amount of about seven pints daily) on June 10, 1898, showed a specific gravity of 1.038 and contained 7.1 per cent. of sugar, as ascertained by means of Stern's urinoglucosometer. A restricted diet and the administration of codeine caused only a moderate improvement of the symptoms. Bichloride of mercury, which was given for the last three weeks of December, 1898, in the doses recommended, not only produced no beneficial influence whatsoever upon the diabetic condition, but actually aggravated the condition of the patient. Early in July, 1898, my attention was drawn to the chloride of gold and sodium, which was handed to the patient in tablet form and administered first in doses of a fiftieth of a grain. The dose was gradually increased to a twentieth of a grain. After five weeks' trial of this drug it had to be abandoned, as the condition of the patient had become alarming in the meantime.

At about this period I ran across an article in the *New York Medical Journal* regarding the use of arsenauro in diabetes and determined to test this product, having previously used it with satisfactory results in malarial toxæmia.

On February 7, 1899, eight drops of arsenauro were given in half a glass of water three times daily. The restricted diet was ordered to be continued. Patient reported to me in one week. The glycosuria and polyuria were greatly diminished. The feeling of thirst was not experienced any longer, and he expressed himself as feeling perfectly well. The dose of arsenauro was gradually increased until he reached his full limit of toleration, which supervened at fifty drops. The quantity was lessened to forty-five drops, and continued in this dose for sixteen weeks. After this period I examined the urine, which revealed a specific gravity of 1.020 and was absolutely free of sugar. Patient was discharged as cured, with the instruction to continue the arsenauro for at least six months.

Case II.—M. H., a woman, aged thirty-four, American, unmarried, came to consult me September 11, 1898. In July previous, during the hot spell, she perspired greatly and suffered from excessive thirst. Her weight, which normally was a hundred and sixty-five pounds, had diminished to a hundred and thirty-five pounds. Frequent micturition was distressing her greatly. Appetite was voracious for some time and her strength gradually declined. When first seen by me the daily quantity of her urine amounted to eight pints. Specific gravity, 1.046; sugar, 7,538 grains a day. She complained of incessant thirst, inordinate appetite, pain in back, and extreme feebleness. She was put on a restricted diet on September 20th, but no medication given her. Patient improved somewhat, but not sufficiently. In December, 1898, bichloride of mercury was given and the same diet continued without effecting any noticeable change in the patient's condition. In February 1899, she was put on arsenauro, and the same diet still continued. The medicine was started in eight-drop doses three times daily, to be taken in a glassful of Vichy water. Ten days after, great improvement had taken place. The urine became reduced to forty-nine ounces, specific gravity 1.028, and the sugar output to two hundred and ten grains for the twenty-four hours. After this the dose of arsenauro was gradually increased until the patient reached her full physiological limit; this took place at forty-drop doses—that is, after the administration of two drachms a day. Patient was instructed to occasionally discontinue the administration of the remedy for twenty-four hours, and then to start again on thirty-five drops.

This latter dose was taken for some months with the result of rendering the urine entirely free of sugar. She was advised to continue with the medicine for at least six months longer. I examined her urine of late and found it absolutely normal and free of sugar.

Case III.—H. E. B., a man, aged thirty-seven, American, railroad conductor, consulted me in March, 1899, on account of an irritable bladder. Patient was compelled to urinate quite frequently during the day as well as during the night. His other symptoms left no doubt as to his real affection—diabetes mellitus. The disease, so far as I could ascertain, dated back for about a year and seemed to be devoid of further complications. The quantity of urine voided varied from twelve to fifteen pints a day, with an average specific gravity of 1.042. Sugar averaged four thousand grains for the twenty-four hours. The treatment consisted in restriction of diet and the administration of arsenauro, ten drops of which were ordered to be taken in half a goblet of water three times a day. This dose was gradually increased until patient took sixty drops three times daily. When this quantity, three drachms, was taken every day, the patient's lids began to puff and his bowels became loose and caused griping. The medicine was discontinued for twenty-four hours, but again ordered to be taken in fifty-five-drop doses. Patient had taken the fifty-five-drop doses for eight weeks, when I again examined his urine, which contained only a trace of sugar. One month later he was perfectly well, and all vesical irritation had disappeared—in fact, I pronounced him well. I advised patient to report to me from time to time, but to continue the arsenauro for at least six months.

Case IV.—B. R., aged forty-seven, a woman, unmarried, American, milliner, thin and emaciated, able to attend to her business, consulted me April 12, 1899. Patient complained of great weakness, which had gradually increased for several months. She had excessive thirst and had voided a greatly increased quantity of urine, but her appetite was moderate. Her skin was dry and she complained of intense pains in the calves of her legs, especially in the morning. There was distressing pruritus vulvæ present. The specimen of urine sent to me for examination presented a specific gravity of 1.045 and contained 8.1 per cent. of sugar. I restricted the patient's diet as to starches and sugar and placed her at once on ten-drop doses of arsenauro, to be taken in a half tumblerful of water three times daily. After one week the dose of arsenauro was increased three drops every day until she reached its toleration. Physiological saturation was obtained when forty-five drops were taken three times a day. The administration of the remedy was then stopped (as I am in the habit of doing) for twenty-four hours, after the lapse of which it was again ordered to be taken in forty-drop doses. This dose was kept up for six weeks. On July 3d she had gained seven pounds in weight; uranalysis demonstrated entire absence of sugar; the pruritus had entirely disappeared, and there were no evidences whatsoever of symptoms pertaining to diabetes mellitus. Patient was advised to continue the medication for at least another six months.

The four cases which so readily yielded to this antitoxic treatment were apparently of bacterial origin. Arsenauro, by saturating the system, arrested bacterial activity, or killed the germs, or neutralized their toxines. However, only by saturation with the proper medicine—and, by the way, arsenauro is the only powerful alterative neutralizer which can be pushed to an almost incredible dose without doing bodily harm—can such results as are recorded in the foregoing be obtained.

SKIN MANIFESTATIONS OF INFLUENZA OBSERVED IN THE PRESENT EPIDEMIC

By J. EDWARD HERMAN, M. D.,
BROOKLYN.

Influenza is at present prevalent in Brooklyn. The disease is mild in character, but extremely infectious. In almost every instance in the writer's experience, when one person was sick, at least one more member of the family would contract the disease.

The three usually described forms, affecting the respiratory, gastro-intestinal, and cerebro-spinal functions, have all been seen.

Besides, very many cases show some skin manifestation of the disease. These eruptions are something new in the United States, although they have been described in England and continental Europe since the year 1890.

The eruptions most often seen by the writer simulate those seen in scarlet fever, measles, and herpes.

The scarlatiniform rash has been frequently described in England.

The measles eruption closely resembles the papular form. It has been described as mottled, or at times as blotchy. It may be confined to the cheeks or it may cover the entire surface of the body.

The herpetic eruption is described in Finkler's article in the *Twentieth Century Practice*. It is frequently called urticaria, but it seems to me to be more properly called herpes. One of my cases had a typical herpes zoster, and infected two other children in the same family with a disseminated herpes. At the last meeting of the New York State Medical Society, Reilly reported an epidemic of intercostal neuralgia with herpetic eruptions. He did not make a diagnosis, but felt sure that the cases were not malaria. There is very little doubt but what the cases described by him were influenza. I have succeeded in demonstrating the presence of the Pfeiffer micro-organism in my cases.

1098 Bushwick Avenue.

Therapeutical Notes.

An Ointment for Trachoma.—Bloebaum (*Deutsche Medizinal-Zeitung; Medical Review of Reviews*, December, 1899) reports having observed decided benefit from the use of the following ointment in all stages of the disease:

℞ Copper sulphate, Salicylic acid, Cocaine,	of each ..... 1 part;
Vaseline	100 parts.

Arsenic as an Intestinal Antiseptic.—*Riforma medica* for January 13th attributes the following to Wilson:

℞ Fowler's solution	60 grains;
Distilled water	1,800 "

M.
A coffeespoonful to be taken every three or four hours.

To Arrest a Cold.—The *Indian Lancet* for December 16, 1899, quotes the following from the *Woman's Medical Journal* of unspecified date:

℞ Tincture of gelsemium	2 drops;
Liquid extract of ergot	5 "
Camphor water	4 drachms.

Mix and take every hour immediately the cold is felt. If this is taken for twelve hours, the patient at the same time keeping indoors in the warmth, many a cold will be cut short.

An Agreeable Purgative.—The *Revue médicale* for January 3d gives the following formula:

℞ Scammony	15 grains;
White sugar	4 drachms.

Triturate and add little by little—

Pure milk	4 ounces;
Cherry-laurel water	1½ drachm.

For Premenstrual Pain.—*Riforma medica* for January 11th gives the following:

℞ Codeine	¾ grain;
Chloral, Bromide of ammonium,	of each, 15 grains;
Camphor water	450 "

M.
To be taken as a draught at bedtime.

An Antiseptic Gargle.—Dr. Escat (*Gazzetta degli ospedali e delle cliniche*, January 16th) recommends the following:

℞ Salol	15 grains;
Alcohol at 90°, Glycerin,	of each..... 750 "
Boiled water	6,000 "

M.

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THE KENTUCKY STATE BOARD OF HEALTH AND THE "ACCURSED WITCHERY OF ILLITERATE TERMS."

The State Board of Health of Kentucky is deserving of great praise for the excellent defense it has made in an action at law brought by an "osteopath" to restrain it from denying him the license to practise, on the ground that his diploma was not that of a reputable and scientific school of medicine. The board is to be congratulated on the fact that the case came before such a learned and catholic jurist as Judge Toney, of the Law and Equity Division of the Jefferson Circuit Court. Judge Toney denies the plaintiff's petition and rules as follows: "1. The statutes of Kentucky against empiricism are constitutional. 2. Whether a school of medicine from which a party holds a diploma is a reputable medical college is a question alone and exclusively for the State Board of Health to decide. 3. Mandamus will not lie to compel the said board to decide a particular way. Their act is quasi-judicial and is not subject to mandamus. 4. On the merits, held that the American School of Osteopathy at Kirksville, Mo., from which the plaintiff holds a diploma, is not a reputable medical college, and that the State Board of Health is right in refusing to allow the plaintiff to practise osteopathy in this State." Judge Toney analyzes the evidence, reviews the law, and gives an historical sketch of "kindred quack schools of mysterious healing." The document appears in full in the *Journal of the American Medical Association* for January 13th.

Probably that widespread failing of human nature commonly termed gullibility is largely dependent on admiration for the unknown, the unreasonable, the absurd, the nonsensical. According to the old saying, says the judge, *quo magis nesciunt eo magis admirantur.* Coupled with what Byron termed "that accursed witchery of illiterate terms," an expression cited by Judge Toney, this credulity readily lends itself to the charlatan's designs. It seems to be impossible for man to imagine a creed or theory so utterly ridiculous as not to meet with ready acceptance at the hands of the multitude. It is to protect them against the bitter fruits of their readiness to mount a phantom and ride to destruction that most of the States have enacted stringent laws governing the practice of medicine. "It is singular, indeed," says Judge Toney, "that in an enlightened age like this such humbug schools and ignorant pretenders could find recognition by the laws of any State." The days of "osteopathy" in Kentucky seem to be numbered. It is to be hoped that Judge Toney's exposure of it will be laid before the legislators of other States as occasion requires, for it ought to prove an unusually effective weapon against the schemes of pretenders who seek legal authority for practising medicine while professing not to do so.

SNAKE POISONING.

Few people in civilized life have an adequate conception of the amount of suffering and death due to the bites of venomous serpents, and still fewer know enough about snakes to distinguish readily those that are deadly from those that are harmless. The power of discrimination, however, is of the utmost importance. In nearly all parts of our country poisonous snakes are to be found, though, happily, for the most part they are not common. To kill a snake whenever one is encountered is almost an instinct in man, but most of us would not go far out of our way to destroy a serpent or run any avoidable risk; but almost any man would willingly exert himself and incur danger if he saw a fellow-man threatened by a reptile he knew to be highly venomous. It is on such an occasion and in avoiding danger that a knowledge of the thanatophidia may stand one in good stead. Time spent in the study of snakes is not wasted, as was shown some weeks ago by Dr. Howard A. Kelly and Dr. Thomas R. Brown, at a meeting of the Johns Hopkins Hospital Medical Society (*Bulletin of the Johns Hopkins Hospital*, December, 1899). The subject of the recognition of the poisonous serpents of North America was handled by Dr. Kelly, who gave a striking illustration of popular ignorance with regard to it when he said: "Another snake with a bad reputation is this one, which came to me from Alabama labeled 'orange-bellied moccasin,' 'deadly poisonous,' which is really only a large water snake (*Tropidonotus*, or *Natrix*) found abundantly everywhere and not resembling in the least any form of poisonous serpent except in his natural vicious, ugly disposition." Dr. Kelly's article is illustrated with a number of very clear reproductions of photographs of snakes of different kinds.

Dr. Brown dealt with the chemistry, etc., of snake poisoning and with its treatment. What he had to say about the treatment is naturally of more immediate interest to the general reader than his review of the chemistry and mode of operation of serpent venom, although it is satisfactory to be able to note that our countrymen, as represented by Mitchell and Reichert, have done no mean part of the task of working them out. Dr. Brown shows that, to be efficacious, the treatment of a snakebite must be prompt. If the bite is on a limb, the first thing to do is to put a tight band around the limb above the bite; then as much of the poison as possible should be removed by suction or destroyed by cauterization or the use of oxidizers, including the injection of potassium permanganate, calcium hypochlorite, or gold chloride about the wound, or, if these are not at hand, a caustic alkali, bromine or chlorine water, carbolic, tartaric, or chromic acid, tincture of iodine, or even a weak solution of corrosive sublimate. As to internal treatment, there is no direct antidote. Alcohol is unjustifiably held by most of the laity to be an antidote, but, quite as undeservedly, it is condemned as injurious by some. Although it is useless as an antidote, says Dr. Brown, it is probably useful in mild cases in lessening the nervous and cardiac depression.

As regards the antitoxine treatment, there is no doubt of its efficiency as a preventive of fatal poisoning, and there is good evidence of its curative power if it is employed promptly, but there is great diversity of opinion as to whether an antitoxic serum developed from the venom of a particular snake is efficacious only against that one venom or, as Calmette contends, against snake poison in general. Probably the protective action will be found to be more powerful and more lasting against the venom from which the antitoxine was cultivated, but also of considerable potency and duration of action against other varieties of serpent venom.

THE STATE AND THE CONSUMPTIVE.

It is now pretty generally admitted that tuberculosis will soon be regularly catalogued among the preventable diseases. All that remains is for the different State boards of health to declare the disease at least communicable if not contagious. This will afford sufficient basis for compulsory isolation when that is necessary. Naturally, there are many difficulties in the way. Chief among them is the well-known apathy of the public to its own deepest interests, to which must be added the antagonism of that very class most subject to the ravages of the bacillus, and this is no small matter. To discuss means for getting more effectively at this class, a joint meeting of the Philadelphia County Medical Society and the Pennsylvania Society for the Prevention of Tuberculosis has recently been held. The plans of the Preventionists are twofold. First, there is an educational plan appealing not only to the lawmakers, but also to the people in the alleys and back streets. This has been partly carried out by means of tracts left with nearly every family throughout the poor districts of Philadelphia. In addition to this work, the Preventionists urge the registration of all cases of tuberculosis, human or animal, but in this phase of the work there is opposition at every step. People object to being labeled "dangerous," and small wonder. It is very human.

The discussion seemed to centre about the second feature of the Preventionists' plan, namely, the establishment of sanitaria and hospitals. Sanitaria alone were shown to be insufficient. A scheme providing special city hospitals for established and advanced cases of tuberculosis, cooperating with one or more sanitaria in high, dry, well-wooded districts, where might be sent those who were convalescent or whose disease was only incipient, seemed to promise the best results. Nothing, it was said, could better or faster educate the unthinking classes to the benefits of isolation and the dangers of promiscuous intercourse than a brief stay of a few of their friends in some such institution. The advantages of institution life, its discipline, the need of care, the danger to self, to family, and to the community, would all be borne in upon patients and friends in such manner as could only result in a higher standard of public health. That we are naturally tending in this direction is true, as shown by the improvement in paving, lighting, draining, and water supply in most of our cities. That a decided impetus in this direction would grow out of the presence in each city of an institution for consumptives acting as a feeder to some sanitarium is equally true. For these things State help is needed, but not the kind of State help that looks to the housing of the tuberculous in county homes. The futility of this system in caring for the insane is already too well known. The real need is for large institutions fashioned either after the State hospitals for the insane in Pennsylvania and New York or, what seems even more to the purpose, after the colonies for epileptics in New York and Pennsylvania. Dr. Da Costa well says: "The State must step in if anything is to be accomplished. Individual work is but a drop of relief in an ocean of woe. Koch's discoveries have only added to the hardships of the consumptive by making him a source of danger in the public eye." The duty of the State to protect itself is all too plain.

ROTTEN WOOD AS A CAUSE OF YELLOW FEVER.

Dr. W. J. Clarke writes to the *Louisville Monthly Journal of Medicine and Surgery* for February to call attention to the theory broached many years ago by an unknown writer in a magazine, that to the upturning of quantities of earth in warm weather must be added the rotting of wet wood as a predisposing cause of yellow fever. In support of this hypothesis the author refers to an outbreak of that disease at Shreveport coincident with the alternate wetting and drying during the hot weather of a huge raft, and ceasing when the raft disappeared. A rotten condition of the wood pavement at Memphis is said by him to have coincided with an outbreak of yellow fever there. Another epidemic in Florida, having hibernated at Plant City, jumped to Jacksonville and extended to a small place about thirty miles west thereof in the pine woods, presumably a most unsuitable focus. A government inspector found at the latter spot that the sawmills were dropping their dust in the shallow water at the edge of a pond. At Jacksonville he found the fever most prevalent on the east bank of the St. John's River, where the sawmills were. At Plant City similar conditions prevailed. At Fernandina a strike of lumbermen leaving timber to rot at the water's edge was quickly followed by an outbreak of yellow fever. The author gives more instances in support of his contention that rotting wood at the seasonable time is preeminently suitable for the development of the yellow-fever germ, and it seems to us more than likely that there is considerable truth in his contention.

NIGHT AIR IN THE TREATMENT OF CONSUMPTION.

This is indeed an iconoclastic age. One by one our old settled and cherished beliefs are being shattered, and principles and methods adopted for medical guidance not merely differing from, but directly opposed to, all that we have hitherto been accustomed to regard as certain. The *Medical Standard* for February cites a paper by Dr. C. S. Millet, of Brockton, Massachusetts, published in the *Maryland Medical Journal* of unspecified date, wherein he reports five cases of pulmonary tuberculosis in which he recommended the patients, they being of the poorer class and unable to obtain that change of climate which was considered requisite, to sleep out of doors at night without even a covering or roof over their heads, save when rainy weather called for it. Beds were fixed out on the roofs of their houses, in which the patients slept under ordinary bedclothes, wearing only soft felt hats and cotton night shirts. In all five cases the results appear to have been marvelous. Within two weeks improvement was visible. The temperature fell to normal, the cough disappeared, respiration was improved, and, above all, a rapid and considerable increase of weight ensued. Dr. Millet considers dampness and draughts of no account, and holds that the only inconvenience, even of heavy dews, consists in the necessity of drying the bedclothes. His results as recorded would certainly seem to bear this proposition out.

BOGUS SPERMATORRHŒA.

The notorious difficulty of convincing a frightened youngster that the occasional escape of a viscid fluid from the urethra is not of such dismal portent as his imagination pictures may sometimes be overcome by a very simple procedure suggested by Dr. James Ross, of Halifax, in the January number of the *Maritime Medical News*. "The cloudy condition of the urine often present," says Dr. Ross, "is due to the alkaline phosphates, the clearing up of which by a few drops of acid in the presence of the sufferer is usually of value in restoring his mental equilibrium."

INFLUENZA IN THE DOG.

The relations of man and the lower animals, in the matter of the communication of disease, seem to be coming constantly more clearly into view. It is not very long ago that the horse's agency in communicating tetanus and the cow's part in the spread of tuberculous disease were unsuspected, and now Mr. H. Karslake Tasker, M. R. C. V. S., declares in the *Veterinary Record* (cited in the December number of the *Journal of Comparative Medicine and Veterinary Archives*) that he has no hesitation in saying that a certain "new disease in dogs" that has made its appearance in Great Britain is influenza. So far as he is aware, he says, influenza may attack any animal. He thinks it is not so communicable from animals to man as from man to animals. We hope this will turn out to be true.

SCABIES OF THE CORNEA.

Among the curiosities of medicine we shall have to include a case related by Saemisch (*Allgemeine medicinische Central-Zeitung; Medicinisch-chirurgisches Central-Blatt*, January 12th), that of a rustic lad who had keratitis accompanied by a little projecting mass in the middle of the cornea. One day a shred was seen hanging down from this point, and it was torn away with a forceps. On examination, it was found to contain a typical female acarus, near which there lay eight ova in different stages of development.

THE PRAVAZ SYRINGE.

It is interesting to note that at a recent meeting of a Lyons medical society (*Lyon médical*, January 14th) M. Aubert showed the original syringe made for Pravaz by Charrière in 1852. Pravaz designed it for injecting coagulant fluids into aneurysmal sacs, but it was soon put to other uses.

COLORADO AND TUBERCULOUS DISEASE.

It appears from the newspapers that somebody in Denver is getting alarmed lest the influx of consumptives may prove threatening to the health of the inhabitants, and a sort of exclusion act is hinted at. It is not very long since a similar movement was talked of in California, but it looks now as if the people of that State had had their eyes opened to the injudiciousness of engaging in it. We do not see that Colorado is differently situated from California in the matter.

THE NEED OF MORE MEDICAL OFFICERS FOR THE ARMY.

Congress should not hesitate to provide for the adequate medical corps asked for by the surgeon-general. He ought not to have to go on much longer without a force of commissioned officers sufficient for the needs of the service. It seems to us that more than a certain small proportion of acting assistant surgeons are not an element of strength in the work of caring for the health of the army.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported for the two weeks ending February 10, 1900:

DISEASES.	Week ending Feb. 3.		Week ending Feb. 10.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	20	13	14	10
Scarlet fever	220	21	257	23
Cerebro-spinal meningitis	0	3	0	5
Measles	817	21	859	39
Diphtheria	322	55	286	55
Laryngeal diphtheria (croup)	13	8	23	12
Tuberculosis	237	144	186	175
Chicken-pox	43	0	36	0
Small-pox	2	0	0	0

The Buffalo Academy of Medicine.—At the last meeting of the Section in Ophthalmology, Otology, and Laryngology, on Monday evening, the 12th inst., the following papers were read: Some Improvement in Operating X-ray Apparatus, by Dr. Elmer Starr; Radical Operation for Caries of the Middle Ear, by Dr. George F. Cott; and A Report of a Case of Retropharyngeal Abscess, by Dr. Irving M. Snow.

At the last meeting of the Section in Medicine, on Tuesday evening, the 13th inst., Dr. Matthew D. Mann read a paper on Dress Reform, which was discussed by Dr. Hopkins, Dr. Bartow, and Dr. Stockton.

Marine-Hospital Service Health Reports.—The following cases of small-pox, yellow fever, cholera, and plague were reported to the surgeon-general during the week ending February 9, 1900:

Small-pox—United States.

Mobile Ala.	Jan. 27–Feb. 3	1 case.	
Arkansas	Feb. 2	Generally prevalent.	
Los Angeles, Cal.	Jan. 18	3 cases.	
Washington, D. C.	Jan. 23–29	3 "	
Jacksonville, Fla.	Jan. 27–Feb. 3	5 "	
Springfield, Ill.	Jan. 21–27	1 case.	
Clay County, Ind.	Jan. 28	Prevalent.	
Evansville, Ind.	Jan. 27–Feb. 3	6 cases.	
Calcasieu, La.	Jan. 20	5 "	
De Soto, La.	Jan. 20	1 case.	
Iberia, La.	Jan. 20	3 cases.	
New Orleans, La.	Jan. 27–Feb. 3	28 "	30 deaths.
Shreveport, La.	Jan. 27–Feb. 3	8 "	
Tangipahoa, La.	Jan. 20	1 case.	
Barton, Mass.	Jan. 27–Feb. 3	1 "	
Lawrence, Mass.	Jan. 27–Feb. 3	1 "	
Minneapolis, Minn.	Jan. 20–27	8 cases.	
New York, N. Y.	Jan. 27–Feb. 3	2 "	
Cincinnati, Ohio	Jan. 27–Feb. 3	3 "	
Cleveland, Ohio	Jan. 27–Feb. 3	27 "	
Portland, Ore.	Jan. 23	1 case.	
Philadelphia, Pa.	Dec. 24–Jan. 27	5 cases.	
Greenville, S. C.	Jan. 27–Feb. 3	1 case.	
Nashville, Tenn.	Jan. 27–Feb. 3	6 cases.	
San Antonio, Texas	Jan. 1–31	2 "	
Twelve counties and localities in Texas	Jan. 17–23	43 "	
Salt Lake City, Utah	Jan. 27–Feb. 3	1 case.	
Portsmouth, Va.	Jan. 27–Feb. 3	4 cases,	2 "
Roanoke, Va.	Jan. 1–31	12 "	
Spokane, Wash.	Jan. 31	75 "	
Calhoun County, W. Va.	Jan. 31	Cases reported.	
Gilmer County, W. Va.	Jan. 31	" "	
Mingo County, W. Va.	Jan. 31	" "	
Upshur County, W. Va.	Jan. 31	" "	
Lafayette County, Wis.	Feb. 3	1 case.	
Lemonweir, Wis.	Jan. 24–Feb. 3	5 cases,	1 death.
Mauston, Wis.	Jan. 24	1 case.	

Small-pox—Foreign.

Prague, Austria	Jan. 6–13	5 cases.	
Antwerp, Belgium	Jan. 6–13	5 "	1 death.
Ghent, Belgium	Jan. 13–20		1 "
Cairo, Egypt	Jan. 7–14		1 "
Liverpool, England	Jan. 13–20		1 "
London, England	Jan. 13–20	21 "	
Southampton, England	Jan. 13–20	1 case.	
Lyons, France	Jan. 6–13		2 deaths.
Nice, France	Jan. 13–20	2 cases,	2 "
Paris, France	Jan. 13–20		1 death.
Hamburg, Germany	Dec. 31–Jan. 13	4 "	1 "
Königsberg, Germany	Jan. 6–13	4 "	1 "
Athens, Greece	Jan. 13–20	4 "	1 "
Bombay, India	Dec. 26–Jan. 2		68 deaths.
Calcutta, India	Dec. 16–23		3 "
Chihuahua, Mexico	Jan. 20–27		3 "
Campbelltown, New Brunswick	Jan. 27–Feb. 3	8 "	
Moscow, Russia	Dec. 23–30		1 death.
Odessa, Russia	Jan. 6–13	8 "	4 deaths.
Riga, Russia	Nov. 1–30		15 "
St. Petersburg, Russia	Jan. 6–13	17 "	3 "
Warsaw, Russia	Dec. 31–Jan. 10		11 "
Edinburgh, Scotland	Jan. 13–20	1 case.	
Corunna, Spain	Jan. 6–13	3 cases.	
Zurich, Switzerland	Jan. 6–13	1 case.	

Yellow Fever—Foreign.

Havana, Cuba	Jan. 20–27	3 cases,	1 death.
Vera Cruz, Mexico	Jan. 20–27		1 "

Cholera.

Calcutta, India	Dec. 16–23		26 deaths.

Plague.

Honolulu, Hawaii	Jan. 21	42 cases,	41 deaths.
Bombay, India	Dec. 26–Jan. 2		244 "
Calcutta, India	Dec. 16–31		42 "
Kurrachee, India	Dec. 23–31	1 case,	1 death.
Kobe, Japan	Dec. 26–Jan. 10	23 cases.	
Osaka, Japan	Dec. 26–Jan. 10	34 "	

The Medical Society of City Hospital Alumni, of St. Louis.—At the last regular meeting, on Thursday evening, the 15th inst., the following papers were read: The Development of the Fœtal Bladder and Conditions leading to Exstrophy, by Dr. T. C. Witherspoon; and A Preliminary Report of the Diplococcus Scarlatinæ, with a demonstration of specimens, by Dr. R. B. H. Gradwohl. Dr. Bransford Lewis presented a patient with complete exstrophy of the bladder.

The St. Louis Medical Society.—At the last regular meeting, on Saturday evening, the 10th inst., the following papers were presented for discussion: Fibroma of the Ovary, by Dr. L. H. Laidley, and A Case of Secondary Post-partum Hæmorrhage, by Dr. L. E. Newman.

The Parliamentary Representation of London University.—According to *Science* for February 2d, Professor Sir Michael Foster, F. R. S., has consented to become a candidate for the University of London's seat in Parliament, rendered vacant by the elevation of Sir John Lubbock to the peerage. Sir Michael Foster would prove a worthy successor to his eminent predecessor.

The University of Pennsylvania, Medical Class of 1875.—The executive committee of the Society of Alumni has appointed the undersigned to endeavor to secure a reunion of the class of 1875 at the coming commencement in June. Members of the medical class of 1875 who may see this are requested to send at once to me their present addresses and some brief account of their doings since graduation. As many as possible of the class are urged to be prepared to come to a social gathering to celebrate its twenty-fifth anniversary.

[Signed.] CHARLES W. DULLES.

4101 WALNUT STREET, PHILADELPHIA.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from February 3 to February 10, 1900:*

BLACK, ALLEN J., Acting Assistant Surgeon, United States Army, is assigned for duty with troops on the *Leelanaw* during the voyage to Manila.

CATTERMOLE, CHARLES A., Acting Assistant Surgeon, United States Army, is relieved from duty with the Twentieth Infantry and will report at the First Reserve Hospital, relieving BROWNLEE, CHARLES Y., Acting Assistant Surgeon, United States Army, who will report on the *City of Peking* for duty on board that vessel during the voyage to the United States and return.

DARNALL, CARL R., First Lieutenant and Assistant Surgeon, United States Army, will proceed to Governor's Island, New York city, for duty with recruits going to Manila on the transport *Sheridan.*

DU BOIS, FRANK, Acting Assistant Surgeon, United States Army, is assigned to duty with troops on the transport *Conemaugh* during the voyage of that vessel to the Philippine Islands.

DUCKER, ORLANDO, Major and Brigade Surgeon, United States Volunteers, will make an inspection once a month, at least, of all the hospitals, asylums, and charitable institutions within the limits of the Department of Havana.

FITZGERALD, C. J., Acting Assistant Surgeon, United States Army, will report for temporary duty at the General Hospital, the Presidio, California, awaiting return transportation to the Philippine Islands.

GIBSON, ROBERT J., Major and Surgeon, United States Army, is assigned to duty as sanitary inspector, Department of California, with station in San Francisco, *vice* OWEN, WILLIAM O., Captain and Assistant Surgeon, United States Army.

HOWELL, EVAN P., Acting Assistant Surgeon, United States Army, will proceed to Fort Duchesne, Utah, for duty, to relieve DAVIES, WILLIAM O., Acting Assistant Surgeon, United States Army, who will proceed to San Francisco for duty with troops going to the Philippine Islands.

HOYT, H. F., Major and Surgeon, United States Volunteers, will proceed to Angeles, Luzon, and report to the commanding officer of the Second Brigade, Second Division, for duty, relieving BALCH, LEWIS, Major and Surgeon, who will proceed to Zamboanga, Island of Mindanao.

HYSELL, JAMES H., Major and Surgeon, United States Volunteers, will proceed to Santiago, Cuba, for duty as medical supply officer, to relieve, COMBE, FREDERICK J., Major and Surgeon, United States Volunteers, who will proceed to New York for further orders.

KELLY, JOHN P., Acting Assistant Surgeon, United States Army, will proceed to San Francisco for duty on a government transport.

SHATTUCK, EDWIN C., Acting Assistant Surgeon, United States Army, will proceed to San Francisco for duty with troops going to the Philippine Islands.

SMITH, BAT, Acting Assistant Surgeon, United States Army, will proceed to Santiago, Cuba, for duty.

WADHAMS, S. H., Acting Assistant Surgeon, is relieved from duty at San Juan, Puerto Rico, and will proceed to Humacao, Puerto Rico, relieving RUSSELL, F. F., First Lieutenant and Assistant Surgeon, who will proceed to San Juan for duty.

WOODHULL, ALFRED A., Lieutenant-Colonel and Deputy Surgeon-General, United States Army, will proceed to San Francisco, with permission to delay two months *en route.*

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending February 10, 1900:*

BARBER, G. H., Passed Assistant Surgeon. Detached from the Naval Academy and ordered home to await orders to sea duty.

Promotions.

The following-named officers have been commissioned medical directors: DICKINSON, D., from November 11, 1899; DRENNAN, M. C., from February 5, 1900; HAWKE, J. A., from September 24, 1899; MARMION, R. A., from October 23, 1899.

The following-named officers have been commissioned medical inspectors: HARMON, G. E. H., from November 11, 1899; STREETS, T. H., from April 16, 1899; WAGGENER, J. W., from February 8, 1899.

The following-named officers have been commissioned passed assistant surgeons: BLAKEMAN, R. S., from May 27, 1899; COSTIGAN, G. W., from February 8, 1900; ELLIOTT, M. S., from October 6, 1899; ROSENBLEUTH, J. C., from October 14, 1899; SMITH, R. K., from April 3, 1899.

The following-named officers have been commissioned surgeons: BERRYHILL, T. A., from April 9, 1899; STONE, E. P., from April 16, 1899.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the United States Marine-Hospital Service for the Seven Days ending February 8, 1900:*

WASDIN, EUGENE, Surgeon. On expiration of leave of absence to proceed to New York for orders.

WERTENBAKER, C. P., Passed Assistant Surgeon. To proceed to Martinsville, Virginia, for special temporary duty.

AMESSE, J. W., Assistant Surgeon. To proceed to Cleveland for temporary duty during the absence of Surgeon W. J. PETTUS.

GIBSON, R. H., Hospital Steward. Relieved from duty at South Atlantic Quarantine Station and directed to proceed to Gulf Quarantine Station, Mississippi, for duty and assignment to quarters.

O'GORMAN, T. V., Hospital Steward. Relieved from duty at Gulf Quarantine Station and directed to proceed to Louisville for duty and assignment to quarters.

MCKAY, M., Hospital Steward. Granted leave of absence for five days from January 29th.

COMFORT, N. C., Hospital Steward. To report at Washington for special temporary duty. To proceed to Manila, Philippine Islands, and report to Passed Assistant Surgeon J. C. PERRY, Chief Quarantine Officer, for duty.

Society Meetings for the Coming Week:

MONDAY, *February 19th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Connecticut, Medical Society; Chicago Medical Society.

TUESDAY, *February 20th:* New York Academy of Medicine (Section in General Medicine); Buffalo Academy of Medicine (Section in Pathology); Ogdensburgh, New York, Medical Association; Syracuse, New York, Academy of Medicine; Medical Society of the County of Kings, New York; Baltimore Academy of Medicine.

WEDNESDAY, *February 21st:* Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark).

THURSDAY, *February 22d:* New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Brooklyn Pathological Society; Brooklyn Society for Neurology; Roxbury, Massachusetts, Society for Medical Improvement (private); Pathological Society of Philadelphia.

FRIDAY, *February 23d:* New York Clinical Society (private); New York Society of German Physicians; Yorkville Medical Association, New York (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

SATURDAY, *February 24th:* New York Medical and Surgical Society (private).

Births, Marriages, and Deaths.

Married.

ELLIOTT—FORSYTH.—In New Orleans, on Thursday, February 8th, Dr. John Barnwell Elliott, Jr., and Miss Noel Louise Forsyth.

IRION — HUNTER.—In Alexandria, Louisiana, on Thursday, February 8th, Dr. H. A. Irion, of Eola, Louisiana, and Miss Sadie Hunter.

NEAD—WHITE.—In Brookline, Massachusetts, on Monday, January 29th, Dr. Daniel W. Nead, of Philadelphia, and Miss Rose White.

PARKER—MILLER.—In Santiago, Cuba, on Sunday, January 14th, Dr. Herman P. Parker, United States Marine-Hospital Service, and Miss Helen Miller.

Died.

BROWN.—In Duluth, Minnesota, on Friday, February 2d, Dr. Z. K. Brown.

HERGERT.—In Brooklyn, on Sunday, February 11th, Daisy Hergert, wife of Dr. Emilio L. Hergert and daughter of the late Dr. Philip O'Hanlon.

MACIVOR.—In New York, on Thursday, February 8th, Dr. Abbie Hamlin MacIvor, in the fifty-eighth year of her age.

WOODRUFF.—In Fort Riley, Kansas, on Tuesday, January 30th, Ruth Hope, infant daughter of Dr. Charles E. Woodruff, United States Army.

WOODS.—In Victory, Georgia, on Sunday, February 4th, Dr. C. B. Woods.

Pith of Current Literature.

The Treatment of Puerperal Sepsis. — Vineberg (*American Journal of the Medical Sciences,* February) endeavors to establish the following points: 1. Puerperal sepsis is wound fever or wound infection; and wound infection in the female genital canal, as elsewhere, calls for surgical measures, such as free drainage, irrigation, and the removal with a sharp instrument of any *débris* or exudate that may form on the surface of the wound. These means failing to accomplish the desired result, ablation of the diseased organ or organs as a *dernier ressort* is indicated. 2. In a given case of puerperal sepsis a thorough search is to be made of the whole of the genital canal in order to determine the site of the original infection. 3. If this is situated in the uterus, curettage, drainage, and irrigations are to be employed. In ninety-five per cent. of the cases of puerperal sepsis nowadays met with this plan of procedure will be all that is necessary to bring about a cure. 4. In the remaining five per cent., roughly speaking, these measures will not be efficacious to arrest the progress of the infection, as will be evidenced by the pulse, temperature, general course of the disease, and sometimes by local signs. An exploratory laparotomy is then indicated, the further course to be guided by the pathological lesions found. In most of these cases total hysterectomy will be required. 5. When large collections of pus form and are so situated that they can be readily reached either with a vaginal incision or with one above either of Poupart's ligaments, no time should be lost in resorting to surgical relief. When, however, they are not so favorably situated, judicious delay is advisable, with the hope that ultimately the pus may be evacuated without the risk of soiling the general peritonæum. Such a course not only averts the risks to which the patient would be exposed by a more radical procedure, but affords her an opportunity of being restored to health with the conservation of her sexual organs.

"Craw-craw," a West African Disease.—Dr. Charles G. L. Wolf (*Montreal Medical Journal,* January), in an article on West African Medicine, says that one of the most interesting diseases which have afflicted the white population is known as "craw-craw." This is a very intractable form of eczema which seems to follow the bathing in rivers not too far inland to be unaffected by the sea. It is probably of an infective character and seems more particularly to affect the thighs and genitalia. It is not at all confined to the white population, for some of the most distressing cases the author has seen were among natives. Among them, since no measures were taken to check the disease, the whole of the body and face became patched with areas of infection, and the eyes were nearly closed with scabs which formed on the upper and lower lids. As in ordinary eczema, all remedies tried have little effect, except that, by careful watching, the disease is to a great extent checked, but when once it has started it seems to be one of the most difficult things in the world to effect a cure of.

The Treatment of Accidental Hæmorrhage of Pregnancy.—Dr. J. Keogh Murphy (*Treatment,* December 28, 1899), in a thesis for the M. D. degree of the University of Cambridge, says on the subject of accidental hæmorrhage of pregnancy: To summarize: 1. Accidental hæmorrhage is not due to external injury, but to disease of the uterus, accompanied in a large majority of cases by kidney mischief. 2. It must be divided clinically into two classes: those where uterine contractions are absent, and those where they are present. 3. In the latter and milder form, rupture of the membranes and delivery *secundum artem* will suffice. 4. In the former, vaginal plugging, uterine binding, and general stimulation should be employed until the cervix dilates sufficiently to allow of delivery. 5. If symptoms of internal hæmorrhage continue under this treatment, the patient's desperate condition can probably be only best relieved by Porro's operation. 6. In serious cases of accidental hæmorrhage, in the absence of positive signs, the child's life need probably never be considered.

What are Inhuman Bullets?—The *Lancet* for December 16, 1899, in an editorial asks:

"The comparative harmfulness of these projectiles having been established, the question arises, Which should be employed? The answer is, that which accomplishes its object without unnecessary destruction. The object of firing a rifle at a man in a battle is, in the first place, to stop him; and, in the second place, to prevent him resuming his military duties at too early a date. The 'stopping' power of a bullet varies chiefly with its diameter and its velocity; it varies, also, according to the racial peculiarities of those against whom it is directed; savage races require much more to stop them in a charge than do civilized races. It is further desirable, though this is of much less importance, that the damage inflicted by the bullet should prevent a return to duty within at least a few weeks. It is impossible to 'stop' a charging enemy without injuring him, and to use weapons so little harmful that his onward progress is not arrested is, indeed, to 'inflict unnecessary injury,' for the wound has failed in the object for which it was inflicted. That bullet is, in the end, the most merciful which by the shock of its impact arrests the charge and yet leaves the structures in a condition to be repaired; but no such sharp line can be drawn in practice, and the efficacy of the stopping power must take precedence of other considerations. It is a dreadful necessity which requires us at at any time to slay or wound our fellow men, but if we are convinced of the necessity, then there is no true mercy in doing it inefficiently, in wounding without effecting the object which we have in view. Against a civilized foe we can employ a Mark II or a Mauser bullet with the knowledge that we are doing as little damage as is consistent with our object in firing at all; but with savage races the bullet must be unprotected at its tip so that it may spread, and for this the dum-dum bullet is very suitable; it inflicts much less severe injuries than were attributed to it by von Bruns, who employed in his experiments a bullet which was not a dum-dum, for it had much more of the tip uncovered by the casing."

Proceedings of Societies.

THE SOCIETY OF THE ALUMNI OF THE CITY (CHARITY) HOSPITAL.

Meeting of October 11, 1899.

The President, Dr. William L. Stowell, in the Chair.

A Sacculated Stone in the Bladder.—Dr. Joseph B. Bissell showed a specimen of bladder taken from an old man, seventy-four years old, the walls of which were enormously thickened and lined with trabeculæ and sacculi, in one of which latter there was a stone of the size of a pigeon's egg, completely shut off from the bladder, except at a narrow point, where there was a communication.

Fracture of the Patella; Complete Union by Open Operation Seven Months after Injury.—Dr. Bissell presented a paper on this subject. (See page 195.)

Dr. Fielding Lewis Taylor said that he had had some experience in the operative treatment of recent fractures of the patella, but had never had any in the case of old fractures. In fresh cases he used a catgut suture carried from the ligamentum patellæ on one side to the quadriceps tendon on the other side of the fracture, after the method of Stimson. This was sufficient to hold the fragments in apposition after they had been adjusted. A periosteal fringe, which was usually attached to the upper fragment and hung down between the fragments, was the cause of fibrous union in cases in which no operation was performed. After the effusion had been washed out and the patella had been sutured in the manner described, the fragments showed no tendency to separate. Bony union was the rule.

The Health of School Children.—The President, in introducing the subject, stated that many books had been written in regard to the health of school children, and one of the latest writers stated that our schools were becoming hotbeds for the development of spinal curvatures, myopia, chorea, and various nervous diseases. Many of the writers contended that the health of the school children was not properly looked after. Several members were to speak in regard to this matter, and it remained to be seen whether they agreed with these different writers of the last half century. Dr. Hamlin, being a member of the board of education of Greenpoint, ought to speak with authority.

School Hygiene.—Dr. G. D. Hamlin read a paper on this subject. (See page 164.)

The Benefits of Medical School Inspection.—Dr. Henry Graham MacAdam read a paper on this subject. (See page 182.)

The Influence of School Life on Vision.—Dr. Peter A. Callan read a paper on this subject. (See page 92.)

Athletics in Public Schools.—Dr. J. Gardner Smith read a paper on this subject. (See page 198.)

Overstudy.—Dr. Leroy M. Yale read a paper on this subject. (See page 225.)

The President stated that the subject so far had been treated of in a somewhat one-sided way, being in the hands entirely of the medical men. In order to judge better, they should hear from some one actually on the Board of Education. Dr. Haney, who was at the head of the manual training department of the board's work, was present and they would be glad to hear from him.

Dr. James P. Haney said that Mr. Burlingham, of the board of education, had asked him whether he would be willing to come and speak to the members of the Charity Hospital Alumni Society. He had given rather short notice—indeed, had promised to come himself and speak, but had not appeared. The speaker was an alumnus of Charity Hospital, although he had not the honor of being a member of the society. He had been asked by Mr. Burlingham to represent the schoolmasters' side of this question of the health of the school children. He had telephoned to Dr. Roberts, of the Board of Health, to get statistics on the health of the school children, and Dr. Roberts had said: "By gracious! what is to happen to-night? You are the fourth man to-day who has called me up to get statistics on the health of the school children." The speaker concluded the statistics had already been secured, and would be presented by those far more able than he.

There was, however, something which he felt perfectly at liberty to say in regard to this matter. He thought it quite proper for the medical profession to call the schoolmaster to account and ask him what he had done in bettering the hygienic surroundings of the school children. He had no little diffidence in attempting to recite at such short notice the various things that had been attempted by the school authorities, but would rehearse them from the attitude of the school man. He then recited some of the practical factors in the problem. The school authorities wished to build a large schoolhouse uptown and asked for an appropriation of five hundred thousand dollars for this purpose. They were asked, "What are you going to do with this enormous amount of money?" "Build a schoolhouse." "But there are no people there. Don't count your chickens before they are hatched." Not a year ago there was a very large building opened uptown. There were not children to more than half fill it, and they began to hear criticisms about the foolishness of building these gigantic structures when there were not children to fill them. Within six months the property in the neighborhood was sold and double-decker tenement houses a whole block in extent were put up, holding hundreds of families. Instead of the school at the end of the school year having two or three hundred empty seats, there were two or three hundred children in the streets who could not find room in the school. The building at Hester and Allen Streets had been alluded to. He had spent his entire time in the summer in that neighborhood, in connection with the summer schools. When they opened new No. 42, which had been referred to as one of the most beautiful school buildings, with roof playground, beautiful gymnasium, shops and kitchens, they said they would abandon the old building. Within a few weeks the new building was full, but they could not close the old one, thereby turning away hundreds of children. The school men agreed with those present in thinking that these wretched old buildings, with their badly lighted rooms, with artificial lights in some of them burning all day long, and stables in the rear, ought to be torn down, and they would be very glad to do it if the wherewithal could be got to put up others.

The greatest strides had been made in the way of ventilation. Forced ventilation apparatus had been put into a great many of the old buildings, wherever there was room below for the engines. In the new buildings the rooms were almost invariably ventilated with the forcing apparatus. Different systems were in vogue in different buildings. The roof playground had been established and was found in nearly all the new buildings, making it unnecessary for the children on the top floors to go downstairs to the playground. The question of lighting had been attended to. Any member of the society passing the new buildings could not fail to have been struck by the acres of glass which were shown, sometimes the entire side of the classroom being made of glass, with only sufficient iron supports to keep the building together.

The individual seat had been procured, and great attention was paid to the seating of the children, the seat being adjusted to each child by means of a very simple apparatus, so that the graded seat was a thing found in all the new buildings and in a great many of the old ones.

The question of room was one of the greatest importance. Dr. Smith had called attention to the practice in the gymnasium; but in the new building No. 42, with a gymnasium completely fitted with apparatus, horses, etc., there were two, three, or four hundred children down in the street clamoring to get in. Would the gymnasium be allowed to remain vacant under those circumstances? Some of the members of the Board of Education believed that under these circumstances the gymnasium could not remain. The same thing had happened to the kitchens and workshops: this tremendous pressure for admission the board recognized and had foreseen, but could not always meet in advance. What had been done in regard to the education of the public along these lines? There was a course of evening free lectures by our professors, and a great deal of instruction was given along hygienic grounds. The speaker had been assured by Dr. Leipziger that these were the most popular lectures in the course.

The medical inspection of the schools had been called to their attention by a very admirable paper. There was one phase of it that he would like to bring to their attention. Not so many years ago Dr. Warner had examined a hundred thousand children in London. He found that not only myopia could be easily detected in a large number of children, but also many other diseases—kyphosis, etc. To prevent that, the seats had been made adjustable to the children, and they had been taught to write in what was known as the vertical hand, instead of the slanting, which put one eye closer to the paper than the other, and also lifted one shoulder.

Had their attention not been called in one of the papers to the outdoor gymnasium he should like to refer to it. The advocacy of outdoor gymnasia by physicians would be of the greatest value. There was no place where the child could play ball. It would be a great advantage if the medical profession would urge the opening of the parks which were promised some years ago. He wished them to feel that the sympathy of the Board of Education and of the borough superintendent and his corps were with them in every move that they made toward the betterment of the hygienic conditions of the school children.

Dr. George T. Jackson said that the way the school children's health impressed itself upon him was from the standpoint of the dermatologist. During the last few years at the Vanderbilt Clinic he had seen a great many children sent there by the medical inspectors. He was convinced that this medical inspection was a good thing for the schools and for the community at large, and that many of the inspectors were active and efficient. The statistics that Dr. MacAdam gave showed that most of the pupils excluded had parasitic diseases, and of these the most common was phtheiriasis of the scalp. The teacher looked for the children who scratched their heads, and they were sent to the medical inspector, who, if he found lice, excluded them, thus preventing the spread of the disease. Ringworm of the scalp was another common disease in the schools. It could be detected easily when there was a round patch; but the trouble was that it did not always occur in little round rings, but sometimes as disseminated ringworm, where over the whole scalp there were scattered small patches with broken-off hairs in them. The child's hair was nicely dressed for school and these patches were entirely concealed; yet this type was the most dangerous for schools and institutions. Some years ago he had been asked to look over the children in a public institution where there was an epidemic of ringworm, and he found quite a number of these cases among the children who were thought to be free of the disease. Ringworm was certainly very prevalent in the city, and he did not know but by and by it would be a good idea to have here, as they had in Paris, a ringworm school, where the children could be treated by trained nurses and at the same time go on with their studies. It was a most difficult thing to tell when ringworm was cured, and he wondered how much care the inspectors took before giving a clean bill of health. Another disease that they found was favus. Nearly all the cases of this disease were imported from Europe, and they could be kept out if the children were examined before entering the country. They were comparatively rare. Scabies was not often contracted in the schools, because scabies was almost always communicated at night. But it was possible to communicate it by prolonged clasping of hands, a practice common among children. Another ailment that children were subject to was boils. They should be put down among contagious diseases to be excluded from school. The boil was a disease that was passed on from one subject to another. No child with a boil should be permitted to go to school, unless, by properly applied antiseptic dressings, the other children were protected from infection.

Dr. **Henry G. Piffard** said that thirty years ago he had taken up this question of the inspection of schools for contagious diseases, and, after he had labored with the members of the board for about a year, endeavoring to impress upon them the necessity of having the children inspected for contagious skin diseases and for the various manifestations, it had finally been settled upon this ground, and if the gentlemen cared to look back to the minutes of the Board of Education for the year 1869 they would find a resolution appointing the speaker examiner for the suspected cutaneous diseases. The teachers were instructed to send children suspected to have contagious disease to the dispensary, where the speaker inspected them and gave them a certificate stating whether the case was contagious or not, and whether the child could go to school or not return to school till he had seen the case again. That worked well for a few weeks, but the teachers became forgetful and they discovered that nothing happened to them in consequence of their neglect, so they neglected still more. It did not take more than three months for the whole thing to come to a stop. The speaker could not find any one to take charge of the eye affections, which he did not feel competent to deal with. He believed that the first attempt at school hygiene of any sort was inaugurated by himself in the year 1869.

It had always seemed to him that the public schools were overeducating the children; that the public was doing more for the child than was called for. The expense was greater than the public should bear, and giving them the kind of education that it did, was doing harm both to the public and to the child. He was aware that these views would be unpopular, it would make him disliked by many. When he broached his views to a former mayor, the mayor told him that it would be a very unpopular movement, and he did not care to have his administration identified with it. He thought the children should be given a fair English education—they should be taught the three R's from seven to fourteen years of age. After they were fourteen, book learning should be discontinued, and the children should be trained to be good carpenters, stone masons, machinists, etc., and they should not try to make so many clerks or lawyers or doctors. The girls, after the age of fourteen, should be put for a year or two through branches of domestic economy of different sorts. They had been injured very much as the boys had by this attempt at overeducation. There were too few servant girls and too many stenographers and typewriters. They were a drug on the market; they did not earn as much as a domestic servant. There was no reason why the public should pay for the instruction of these children in Latin, Greek, Spanish, French, German, and music. When it was considered that the Board of Education this year called for an appropriation of thirty-three million dollars, it seemed to be sapping the resources of the city to a very dangerous extent. They contended that the money was needed, a large portion of it, for new buildings and improved buildings, all of which was admirable, but so much money would not be required if the curriculum was made shorter, and if many of the unnecessary studies were left off. It would give an opportunity for better hygiene and better physical development. While he did not believe there was any likelihood of a material change, he thought the time would come when the public would wake up to the fact that they had been overdoing this matter of book learning for the children.

Dr. **Adolph Rupp** said that the Germans had a saying that the best was not too good for the child. And although their form of government was monarchical, that spirit of extreme conservatism which Dr. Piffard spoke for was foreign to them. Every one had a right to the best that this world afforded if it could be got or paid for, and this principle he said applied to the least important person as well as to the highest person in the land. If Dr. Piffard's conservative practice could be realized, there would be no need of the expression of opinion, and representative government would be dead. The school question was more than one of political-economy importance; it was of social and ethical moment besides. Concerning the question of ventilation, he would for one protest against making the medical profession responsible for such shortcomings. That was a matter for special engineers and architects to settle.

Dr. Rupp did not think that the lessons children were given overtaxed their capacities. He based his opinion on recollections of his school days at public school, and what he observed his own children and those of friends did. He agreed with Dr. Yale that the child must be looked after before being sent to school, and those maladies inhibited or corrected which handicapped a child at school. Children had been brought to him who were looked upon as inferior children and whose parents thought the school duties overburdened them, but who, after they had their defective hearing remedied, proved to be equal to other children and to their studies. Physicians should impress upon the parents the importance of having the child well taken care of at home.

Dr. **S. R. Dunlop** said he was an alumnus of Charity Hospital. He had been a pupil in the public schools of New York city, and was now a practising physician in the western part of the State, a member of the board of education of the township, and sole trustee of two schools. He thought the public schools of the city could learn a lesson from the country schools. The primary classes began at nine and had a recess at 9.45; they went to their homes at 11.45. The older classes had a recess at eleven and remained until twelve. They all came back at one o'clock; the primary had a recess at two, the older classes at 2.30. The primary went home at three, the older classes at four. Thus there was a breaking up of the school time, there was an hour longer and at the same time less actual class work. There was a large playground, and each window was furnished with screens with curved elbows, a crude system of ventilation. There was plenty of room for each scholar, and they were not crowded with the amount of their studies. He spoke of the surgical amphitheatre of the Medico-chirurgical Hospital in Philadelphia. It was put up with three individual devices as to the forced ventilation, two as to the heating. He did not think there was a more perfect system of forced ventilation in the world than that used in the Medico-chirurgical Hospital.

Dr. Haney said that not long ago there was a famine in a distant country, and a gentleman came down to the Board of Education building and said to the superintendent, "Sir, how many children have you in the schools?" and the superintendent said, "About 250,000 in round numbers." "Well, sir," he said, "are you going to have the people of this land suffer starvation when if each child brought a potato every day there would be potatoes enough gathered to amply supply the needs of these starving people?" He told the story to illustrate the fact that things which were possible to some were not always possible to others. Dr. Piffard struck a very tender cord in the schoolmaster's bosom. The plan which he advocated had been tried in England, which gave practically no money to public schools, and private schools sprang up all over the land. Then they held an exhibition between England and Germany not so very many years ago, and since then England had been using her efforts to establish a public-school system which would carry the children forward to the extent of enabling them to compete in the open markets with the public-school-trained children of the Continent.

There was one point that had not been mentioned except incidentally, by Dr. Rupp. In regard to the medical inspection of the schools, only those cases were examined which were brought to the doctor. It would be a great advantage if each child were actually examined during the school year. Such examination of all school children was now being made in Chicago. The children who had been spoken of as being dull were often found by the doctor possessed of absolute reason for their dullness. Cases of eye disease would be detected in their first stages. This was carried out in some countries, but not in this city, despite the very large corps of school inspectors. It was one of the most important things that could be undertaken in connection with this very admirable work.

Book Notices.

A Text-book of Pharmacology and Therapeutics; or, the Action of Drugs in Health and Disease. By Arthur R. Cushny, M. A., M. D. Aberd., Professor of Materia Medica and Therapeutics in the University of Michigan, etc. Illustrated with Forty-seven Engravings. Philadelphia and New York: Lea Brothers & Co., 1899. Pp. 5 to 730.

We do not now recall a work upon pharmacology in the English language that has impressed us more favorably than the one before us. This is the day of compends and vade mecums and condensations, no doubt, and from this fact the size of this volume may discourage the student, but we wish that we could impress upon every student of medicine that the way to learn pharmacology is from the honest study of a thorough and reliable text-book, and not from such superficial and inadequate sources as the average compend. Condensations have their place, but that place is rather in reviewing a subject than in learning it. Of the sources from which the student may advantageously derive a knowledge of pharmacology the work of Professor Cushny is a striking example.

The author's object in writing this book is thus explained in the preface: "My object has been to bridge over the hiatus which exists between the phenomena occurring in the normal organism and those which are elicited in the therapeutic use of drugs, to show how far the clinical effects of remedies may be explained by their action on the normal body, and how these may in turn be correlated with physiological phenomena. It necessarily follows that the subject is treated from the experimental standpoint, and that the results of the laboratory investigation are made the basis of almost every statement. Where these fail to elucidate the therapeutic effects or even to suggest a possible explanation, I have preferred to leave the question undiscussed rather than to call on such occult *dei ex machina* as alterative or tonic actions." From the standpoint of the student a work built upon a plan like this might be either very good or, what is far more likely, very bad, as not a few examples have proved. In attempting what Professor Cushny has aimed at, many authors have overshot the mark and have simply submerged the willing student in masses of laboratory reports of which the application is none too direct. Even those that have escaped this fault have, most of them, been far from practical, and our pleasure is therefore the greater that a work projected as this one was could be practically and satisfactorily carried out.

The author's classification and the grouping of drugs are unusual, but that has been made necessary by the fact that "the results of the laboratory investigator are made the basis of almost every statement," for, of the dogmatic classifications of yore, the greater number would certainly suffer shipwreck upon this rock. The grouping here, however, is eminently practical and to the point.

In the case of this work we do not feel that a detailed review is necessary, and indeed such a criticism would require a greater space than we can give it; we may assure the reader, however, as to its completeness and its accuracy and add that the student who seriously desires pharmacological instruction may find it in this work, and more satisfactory and more logical instruction than in any book on the subject we remember to have read.

Evolution by Atrophy in Biology and Sociology. By Jean Demoor, Agrégé of the Free University of Brussels; Jean Massart, Chargé de cours of the Free University of Brussels; and Émile Vandervelde, Professor at the Institute of Hautes études of Brussels. Translated by Mrs. Chalmers Mitchell. New York: D. Appleton and Company, 1899. Pp. xiii–7 to 322. [*The International Scientific Series.*]

The standpoint from which the question is approached, its richness in example, and its thoroughness in detail make this little volume a valuable and interesting one. The development of higher organisms and institutions from the lower by the loss and gradual disappearance of parts no longer of use, or no longer supplied with means of existence, is demonstrated with the fullest illustration from both the biological and the sociological side. An attempt is thus made to use the advances in biological science to the advantage of a better understanding of sociological conditions. And, as the parallel is followed accurately throughout, and the inferences are always clear, one can not help feeling, as he reads, that this is an excellent biological treatise interleaved with an equally excellent sociological work.

System of Diseases of the Eye. By American, British, Dutch, French, German, and Spanish Authors. Edited by William F. Norris, A. M., M. D., and Charles A. Oliver, A. M., M. D., of Philadelphia. Volume IV. Motor Apparatus, Cornea, Lens, Refraction, Medical Ophthalmology. With Fifty-one Full-page Plates and Two Hundred and Eleven Text Illustrations. Philadelphia and London: J. B. Lippincott Company, 1900. Pp. xii–3 to 949.

This is the final volume of the *System.* The first volume appeared in 1897. The opening article is one of 165 pages, on the Anomalies of the Motor Apparatus, and is by Laudolt, of Paris. He begins with paralysis of the ocular muscles, and devotes considerable space to the field of fixation in muscular paralysis, to the clinical diagnosis, to the ætiology, and to the surgical treatment of paralytic strabismus. He then takes up the subject of non-paralytic convergent squint. He believes that in the light of more recent cerebral physiology, the ætiology of squint will become clearer, but that we should not lose sight of the belief that the origin of squint is to be attributed to the relations between accommodation and convergence and to the alterations of binocular vision. He lays great stress on the use of the stereoscope in the treatment of convergent squint, in order to reestablish binocular vision. In discussing the surgical treatment of convergent strabismus, he decries the truth of the theory in favor of tenotomy that the antagonist gains in power what the tenotomized muscle loses. He advocates now, as always in the past, the advancement of the antagonistic muscle, with tenotomy of the squinting muscle when necessary, for the reason that the excursion of the eye is always increased on the side of the advanced muscle. He recognizes four forms of insufficiency of convergence: one due to central lesion, one to neurasthenia, one to lack of exercise, and one to defective development of the adductor muscles. His directions for examining patients are very complete.

The second chapter is upon Diseases of the Cornea, by Professor Nuel, of Liége. The illustrations are new and good. Some of his pronounced statements in regard to the efficacy of certain drugs may fairly be criticised, as when he says that calomel in powder is a sovereign remedy for non-vascular phlyctænulæ. The paragraphs on the microbic infection of ulcers and on filamentary keratitis are very good.

The third chapter, on Diseases of the Lens, is by Dr. Norris. It is very full and beautifully illustrated with photomicrographs, and contains a section upon the removal of the lens in high myopia with a full discussion of the arguments for and against the operation.

The fourth chapter is on Ametropia, by Dr. Oliver, and is distinguished from the other chapters in the volume in that it has not a single illustration.

The fifth chapter is by Professor Haab, of Zurich, on Ocular Lesions dependent upon Diseases in the Circulatory System, and is of great interest, especially to the general practitioner. The author goes very fully into the subject of embolism of the central retinal artery, and states that the entire theory of embolism requires fundamental verification in order that light may be shed upon its obscure points.

The sixth chapter is on Eye Diseases and Eye Symptoms in Relation to Organic Diseases of the Brain and Spinal Cord, by Mr. Swanzy, of Dublin, and the all-important subject is handled with the usual skill and thoroughness of the well-known author. He begins by dividing the organic diseases of the brain into focal and diffuse. The section on localizing eye symptoms of focal disease of the brain is particularly good. He considers lesions of each portion of the brain separately, and the matter is arranged with great simplicity and dexterity.

The seventh chapter is by Dr. Lawford on Ocular Lesions dependent on Disorders of the Secretory and Excretory Organs. As regards uræmic amaurosis, Lawford is of the opinion that its cortical origin has not yet been fully established. Under the head of retinitis albuminurica the author says that two facts are fully established: 1. That the onset of retinitis in Bright's disease is a certain indication of a fatal termination of the malady. 2. That the duration of life after the appearance of the retinitis will vary within fairly wide limits, depending on the severity of the renal disease and on the conditions under which the patient lives. Lawford also believes in the occurrence of a primary albuminuric chorioiditis, independent of any retinal lesion. Under the head of diabetes, he gives it as his opinion that the onset of myopia in persons fifty years of age or over, without visible abnormity of the lens, should always excite a suspicion of diabetes. The lesions of the optic nerve in diabetes bear a close resemblance to certain well-known forms of toxic amblyopia, especially those induced by tobacco and alcohol.

The eighth chapter, by Dr. John B. Story, of Dublin, is on Ocular Lesions in Variola, Rubeola, Morbilli, Scarlatina, Erysipelas, and Diphtheritis.

In speaking of the last class of cases, Story accepts the opinion of Knies that the post-diphtheritic lesions can not be accounted for by the hypothesis of hæmorrhage or inflammation in the nerves or muscles, but are due to some ptomaine produced during the diphtheria or shortly after, which has a direct influence on accommodation.

The ninth chapter, by Dr. Santos Fernandez, of Havana, considers the Ocular Lesions of Influenza, Cholera, Malarial Fever, Dengue, and Yellow Fever. The section on the ocular manifestations in malarial fever is of especial interest, particularly as such manifestations of paludism are rarely met with outside of large malarial foci.

In the tenth chapter Dr. Parinaud devotes a great deal of space to the Ocular Manifestations in Hysteria, especially to amblyopia and the state of the visual field, which is always concentrically contracted. Dyschromatopsia may occur, but it is not constant. Parinaud calls attention to the fact that hysterical disorders of the motor apparatus are almost always of the nature of contractures, even when they present the objective characteristics of paralysis.

The eleventh chapter deals with Eye Affections due to Graves's Disease and Herpes Zoster, and is by Jonathan Hutchinson, Jr. When the facts are thus laid before us we appreciate how little we can do in the way of treatment of the first of the two maladies.

In the twelfth chapter Dr. Standish gives an admirable account of the Motor Changes in the Ocular Apparatus associated with functionaal neuroses. The subject is discussed in a very dispassionate and fair-minded manner.

The Toxic Amblyopias form the subject of the next chapter, in which they are discussed by Dr. de Schweinitz with his well-known thoroughness and attention to detail. The subject is profusely illustrated with charts of the field of vision and photomicrographs of the optic nerve and retina.

The fourteenth chapter is by Selzmann, of Vienna, on The Entozoa of the Human Eye.

In the fifteenth chapter, Baudry, of Lille, gives an exhaustive account of Simulated Blindness and the means for its detection.

The final chapter in the volume is on The Ocular Signs of Death, by Gayet, of Lyons.

There is an excellent index filling thirty closely printed pages.

We congratulate the editors on this most satisfactory completion of their encyclopædic work.

Water and Water Supplies. By John C. Thresh, D. Sc. (London); M. D. (Victoria); D. P. H. (Cambridge); Medical Officer of Health to the Essex County Council, etc. Second Revised Edition. Philadelphia: P. Blakiston's Son & Co., 1900. Pp. xv–438. [Price, $2.]

The second edition of this valuable work is quite as meritorious as the first, and of that our opinion has already been expressed. Should one desire a thorough treatise on the subject of water supplies, and one of not undue bulk, he will do well to possess himself of Dr. Thresh's work.

On the Prevention of Eye Accidents Occurring in Trades. An Address delivered at the Opening of the Section of Ophthalmology at the Annual Meeting of the British Medical Association at Portsmouth, August, 1899. By Simeon Snell, F. R. C. S. Edin., Ophthalmic Surgeon to the Royal Infirmary, Sheffield, etc. London: John Bale, Sons, & Danielsson, Ltd., 1899. Pp. 32. [Price, 1*s*.]

The subject of this address is drawn from Mr. Snell's immense experience with such accidents in the city of Sheffield, the centre of extensive iron and steel works of various kinds, and of a very large coal field. He gives the statistics of eye accidents covering a period of fifteen years, and they are found to average 5.19 per cent. of all accidents. He considers the subject among steel workers, grinders, chippers, or fettlers, and also the injuries from molten metals. He then discusses the necessary preventive measures and suggests that the use of eye protectors should be compulsory for those workers whose employment renders them liable to be injured by iron or steel splinters, or who are exposed to danger from molten metal. He also advises the use of a pneumatic chipper whenever practicable and the use of screens, so as to avoid injury to their fellow workmen and to passers-by. He has devised a protector made of wire-gauze netting, which covers the eyes and adjacent parts. The meshwork is made of fine aluminum wire, the mesh being sufficiently close to prevent even small chippings passing through. The portion over each eye bulges forward so as to allow very free play to the eye beneath, and the convex surface is a greater protection than a flat one would be.

BOOKS, ETC., RECEIVED.

The American Yearbook of Medicine and Surgery. Being a Yearly Digest of Scientific Progress and Authoritative Opinion in all Branches of Medicine and Surgery, drawn from Journals, Monographs, and Textbooks of the Leading American and Foreign Authors and Investigators. Collected and Arranged with Critical Comments by Samuel W. Abbott, M. D., Archibald Church, M. D., Louis A. Duhring, M. D., D. L. Edsall, M. D., Alfred Hand, Jr., M. D., Milton B. Hartzell, M. D., Reid Hunt, M. D., Wyatt Johnston, M. D., Walter Jones, M. D., David Riesman, M. D., Louis Starr, M. D., Alfred Stengel, M. D., A. A. Stevens, M. D., G. N. Stewart, M. D., Reynold W. Wilcox, M. D., J. M. Baldy, M. D., Charles H. Burnett, M. D., J. Chalmers DaCosta, M. D., W. A. Newman Dorland, M. D., Virgil P. Gibney, M. D., C. A. Hamann, M. D., Howard F. Hansell, M. D., Barton Cooke Hirst, M. D., E. Fletcher Ingals, M. D., W. W. Keen, M. D., Henry G. Ohls, M. D., Wendell Reber, M. D., and J. Hilton Waterman, M. D. Under the General Editorial Charge of George M. Gould, M. D. Volume I. Medicine. Pp. 3 to 656. Volume II. Surgery. Pp. 3 to 560. Philadelphia: W. B. Saunders, 1900. [Price, $3, each.]

The International Medical Annual Synoptical Index to Remedies and Diseases. For the Twelve Years 1887 to 1899. New York and Chicago: E. B. Treat & Co., 1900. Pp. 411. [Price, $2.75.]

A Text-book of Physiological Chemistry. By Olof Hammarsten, Professor of Medical and Physiological Chemistry in the University of Upsala. Authorized Translation from the Author's Enlarged and Revised Fourth German Edition. By John A. Mandel, Professor of Chemistry and Physics, and of Physiological Chemistry, in the New York University and Bellevue Hospital Medical College. Third Edition. First Thousand. New York: John Wiley & Sons, 1900. Pp. viii–628. [Price, $4.]

Recollections of a Rebel Surgeon (and Other Sketches); or, in the Doctor's Sappy Days. By F. E. Daniel, M. D. Illustrated. Austin, Texas: Von Boeckmann, Schutze, & Co., 1900. Pp. 264.

Leçons de clinique médicale faites à l'Hôpital général de Montpellier. Par le Dr. J. Vires, Professeur agrégé à la Faculté de médecine de Montpellier, etc. Avec 6 planches hors texte. Montpellier: Coulet et fils, 1900. Pp. vii–245.

Cura e guarigione della tubercolosi polmonare. Por Dott. Carlo Ruata, prof. di materia medica nell' Università e d'igiene nel Regio Istituto agrario sperimentale di Perugia. Città di Castello: Stab. S. Lapi, 1900. Pp. 7 to 102.

Thirty-second Yearbook of the New York Orthopædic Dispensary and Hospital. January, 1900.

Forty-sixth Annual Report of the New York Infirmary for Women and Children. For the Year 1899.

Transactions of the Luzerne County Medical Society. For the Year ending December 31, 1899. Volume VII.

Proceedings of the American Medico-psychological Association at the Fifty-fourth Annual Meeting, held in St. Louis, May 10–13, 1898.

Die Ohrenheilkunde im Kreise der medicinischen Wissenschaften. Akademische Antrittsrede, gehalten am 26. Juli, 1899. Zugleich Programm zur Eröffnung der Universitäts-Ohrenklinik. Von Dr. med. E. Bloch.

The Resuscitation of Animals "Poisoned" with Illuminating Gas. An Experimental Study. By Percival Walter Darrah, M. D., of Philadelphia. [Read by invitation before the Pathological Society of Philadelphia.]

Miscellany.

Snakebites and Warfare.—According to the *British Medical Journal* for January 20th, citing the London *Spectator* for January 13th, several cases of snakebite are said to have been among the casualties at Modder River. The snakes of South Africa, it is added, are both common and deadly, cobras of all sizes, pale yellow to black, being the most active and dangerous. There is also a snake called by the Boers the "spitting snake," because they believe it can spit the venom which oozes from its fangs. The writer, "a South African campaigner," points out that, though snakes are plentiful, snakebites are rare, inasmuch as the snakes rarely bite unless trodden on, and this they usually escape by making for their holes on sight of man. Of the "spitting snake" the writer can testify that this is no mere legend. There is a small, active snake, he says, which does squirt a poisonous fluid in this way, and a case came under his notice in which a personal friend, while stooping to pick up a stone with which to destroy one of these reptiles, had this fluid squirted into his eye by such a snake, a "ring hals." Fortunately, he was near a stream, to which he rushed and in which he at once bathed the eye. When the writer saw him the whole of the conjunctiva was acutely inflamed and remained in this condition for several days, although the eye eventually returned to its normal condition.

The Splash in the Christian-Science Puddle.—The *New York Times* for February 5th says:

"Every little while the business managers of the organization known by the doubly false name of 'Christian Science' give out for publication a mass of statistics nominally showing that the number of their—well, we will be polite for once and call them followers, is steadily and rapidly increasing. For all we know the data thus presented in regard to new churches built and the size of their congregations are accurate, lamentably accurate. Nevertheless, these statistics, like everything else connected with the pseudo-science, are deceptive, and the fact is that Eddyism is already showing the signs of swift decay. It still spreads in an ever-widening circle, and therefore more people, probably, are agitated by it to-day than yesterday, but complete calm is already establishing itself at the original centre of commotion, and that, too, is extending fast. Nobody who has paid careful attention to the matter can have failed to note the large number of persons, formerly affiliated more or less closely and enthusiastically with the cult, who have now abandoned it altogether, or whose interest is cooling. The proselytes continue to multiply and for the time being they more than make up for the backsliders, but the process in operation can have only one end. The 'scientists' raise a single big crop almost everywhere, but the same land never produces twice, and famine follows quickly after the feast. Soon there will be no new ground to take up, and then—no more will be heard of this particular set of cultivators. Mrs. Eddy has made the fatal error of becoming ridiculous. She prospered on denunciation, but success intoxicated her and she lost her shrewdness. Now her pretensions are too absurd for the endurance of any except those financially interested in the defense of her theories, and her book agents must go further and further afield with every week that passes. This is a matter of small consequence to 'Mother,' for she had, and utilized, many years for her own enrichment. The situation, however, must be extremely painful to those belated exploiters of credulity who are endeavoring to duplicate her achievements."

The West African "Ju-Ju" Man.—Dr. Charles G. L. Wolf (*Montreal Medical Journal*, January), in an article on West African medicine, says that all along the coast, but also in the interior, the chief factor in native medicine seems to be the Ju-Ju or medicine man, who holds a position in the tribe perfectly analogous to that of the medicine man of the North American Indian. To him are brought all cases of sickness of whatever sort, and he also prepares the thousand and one "fetiches" which are supposed to bring good luck or otherwise to the bearer. Added to this somewhat wide sphere of action he combines under the king the function of priest, and hence is the prime mover in all religious ceremonies. What his real knowledge of medicine is seems to be very difficult to get at. The author had a number of opportunities of meeting some of them and of inquiring of medical men who had been many years on the coast in official positions, and who were therefore in the best position to get the desired knowledge, but none of these were able to afford very much information of a definite nature on the subject. Naturally, anything which is so much shrouded in mystery as their art purposely is, is difficult to get at, especially for foreigners, who are always to a greater or less extent objects of mistrust. But whatever, says the writer, may be said of the simplicity of the Ju-Ju man's medical armamentarium does not describe his knowledge of toxicology, and it is safe to say that nowhere in the world has poisoning been brought to a finer point than on the west coast of Africa.

Paralysis of the Oculo-motor Nerve from Indirect Violence.—At a meeting of the Section in Ophthalmology of the College of Physicians of Philadelphia held on January 16th Dr. C. A. Veasey reported the case of a man, thirty years old, who fell from his bicycle while coasting and struck his *left* temple. He was bruised and stunned, but had no cerebral symptoms, such as nausea or headache. He continued his ride for an hour and a half and noticed that objects appeared "out of place." On the following morning he had paresis of all the branches of the *right* oculo-motor nerve. The visual acuity was normal and there was no disease of the media or of the fundus. The accommodation returned, but the other symptoms improved but little under treatment.

Transient Blindness.—At the same meeting the chairman, Dr. George C. Harlan, related a case of transient blindness in a delicate and nervous woman, twenty-three years of age, who complained of loss of vision in the left eye of three days' duration. She said that a month before there had been double vision in each eye, which lasted three weeks, and was followed by almost complete blindness in the left. The right eye was normal in all respects. In the left, vision was reduced to the ability to count fingers at four inches. A mydriatic had been used. The media were clear and the fundus was normal, but various prism and confusion tests failed to reveal any higher degree of vision than she had admitted. Three days later there was absolute uniocular blindness. All attempts to produce diplopia by prisms failed, and the test suggested by Priestley Smith, and brought to the attention of the section by Dr. Edward Jackson, was deemed conclusive of actual blindness. When the patient was directed to look at a flame, and a prism, base toward the temple, was placed before the blind eye, there was no deviation of either; when it was held before the right eye, there was evident deviation of both eyes to the left, with recovery after removal of the prism. Dr. Harlan was particularly interested in this case because in a considerable experience with hysterical blindness he had met with only one other instance in which he had been unable to demonstrate that the blindness was not real.

The Explosion of the Non-combatant Notion.—The *British Medical Journal* for January 20th quotes from the London *Morning Post* a paragraph from its war correspondent in praise of the behavior of the Royal Army Medical Corps under fire. They "faced a hot fire all day long," says the correspondent, "going close up to the firing line to bring back our wounded. It seems almost incredible that during the day five hundred wounded men should have been brought back by the medical corps, though to get them back stretcher bearers and searchers had to cross and recross a zone of fire at least a mile wide." Then follow these verses:

"He marches with the rest of us, he swaggers all the way,
His step ain't right, but his boots is bright, and he draws a soldier's pay,
He wears a kit of a perfect fit, and his figure is just the one
To go ahead when the ranks outspread and the bayonet's red on the gun;
But when it's 'Charge!' he stays behind—he doesn't swarm no kop—
But don't you think that his morning drink is a basin o' dribblin' sop,
He doesn't shy when the shots whizz by, nor he doesn't shake when a shell
Splits over his head, and his friend falls dead who was sound as a bloomin' bell.

Look at the doctor! We don't look at him,
Not till a bone's disarranged in a limb;
What he is doing ain't nothing to us,
What he is thinking, now, who cares a cuss?
We must go fighting, and he must stand still,
Bust all the doctors until a chap's ill!

"But when our leg is broke in half, and, truth, we must go sick,
He joins the strife with his long lean knife, and cuts at the wounded quick,
His words are short, but you can't pay court to one of a hundred such,
And we don't grouse when he wastes his nous on some of them groaning Dutch;
Oh, his hand it kind o' soothes the pain, when the eyes see only red,
He stays behind, but he stays to bind a regular splitting head,
And if we die of our scratches, why, it isn't his bloomin' fault
Who stays behind (which is very kind) while we carry the hot assault.

Go for the doctor, and mind where you tread,
Tell him I'm feeling that bad in my head,
Tell him the pills as I've swallowed ain't good,
Tell him I've lost lots o' flesh, likewise blood,
Go for the doctor, and tell him come quick,
Fetch up old Sawbones, a Tommy's gone sick.

"In barracks, morning stables done, on Saturday he comes,
We have to show our chests in a row, and he looks between our thumbs,
We don't go sick for a horse's kick, but a bite when you're bending down
Will make you feel as your goin' to peel from the ball of your foot to your crown;
And so we go to hospital, and if he orders port
A man lies low. 'Are you better?' 'No,' you ought to hear us snort!
But it's hard to stick when another's sick—there's a empty bed in the room,
And worser still, when we've finished drill, there's another old hoss to groom!

But, here's to the man of the R. A. M. C.,
Buzzing about on the field like a bee,
Tending the wounded where lead's flying hot,
Biting his lip when he gets hisself shot;
Brave as the best of us, hurt and not tell,
Doctor he may be—he's soldier as well."

The Purity of Examinations.—The *Medical Times* for February says that the medical profession in Pennsylvania is in an uproar over the detection of fraud in the State examination for the license to practise. The fraud is alleged to have been perpetrated by collusion between a student and the office where the questions were printed. Interesting developments are promised.

The New York Academy of Medicine.—At the next meeting of the Section in Ophthalmology and Otology, on Monday evening, February 19th, cases are to be presented as follows: Foreign body in the cornea, removed after four years, by Dr. James Albert Meek; advancement of the internal rectus, by Dr. S. M. Payne; strabismus, three years after operation, by Dr. W. H. Bates; and mastoid disease followed by complications of the frontal sinus, by Dr. Thomas J. Harris. Dr. Julius Wolff will read a paper entitled The Occurrence of Retraction Movements of the Eyeball, together with Congenital Defects in the External Ocular Muscles.

The programme for the next meeting of the Section in Medicine, on Tuesday evening, February 20th, includes the following: Some Observations in Counting Blood Cells, by Dr. A. H. Gardner; Membranous Colitis, by Dr. W. H. Thomson; Mucous Colitis, by Dr. W. Mendeldon; Phlebitis and Some Other Complications following Colitis, by Dr. R. W. Wilcox; Report on Three Cases of Amœbic Colitis, by Dr. H. R. A. Graeser; Examinations in Cases of Amœbic Colitis, by Dr. H. Brooks; The Duration and Prognosis of the Various Forms of Chronic Colitis, by Dr. J. K. Crook; and a general discussion.

THE NEW YORK MEDICAL JOURNAL, February 24, 1900.

Original Communications.

ALBUMINATE OF MERCURY (SAPODERMIN) IN THE TREATMENT OF PARASITIC AND FUNGOID DISEASES.

By GEORGE J. BUCKNALL, A. B., M. D.,
SAN FRANCISCO.

The study of infectious diseases received a new impetus and was placed upon an entirely new basis when the agency of bacteria in their production was discovered. The efforts of clinicians were then directed to the study of the influences of those chemical formulæ which have a destructive action upon the parasitic and living causes of disease. The great desideratum was to find substances having the power either to destroy microbes or to neutralize the noxious products which they elaborate. In the course of such experimental studies, however, we were led to realize more forcibly than ever before the resistant power of parasitic organisms present in diseases of the skin, their germination, reproduction, and cultivation; and, above all, the poisonous products by which the infection of tissue is accomplished. The attention of physicians was directed not only to the destruction of micro-organisms and the neutralization of their poison, but also to the assistance of the tissues in their struggle against invaders.

As long ago as Willan's eight orders or divisions, it was considered well to regard the skin as being subject to certain morbific influences. These, whether they were held to act from within or from without, not only gave a character to the disease, but also necessitated special study with a view to enlightened and successful treatment.

This classification has been so often enlarged upon during the past decade, that we now find each individual author with a classification of his own. No two of these can be considered identical and all are more or less misleading. Every physician, however, understands the general classification, "animal parasitic diseases," and is well acquainted with scabies in particular, since this disease is now quite common in this country.

Scabies is a disease depending essentially on the burrowing of the itch mite, a parasite which belongs to the class *Arachnidæ*. The disease is characterized by the burrows or cuniculi, which are small canals serving as a habitat for the impregnated acarus for the eggs, larvæ, fæces, and secretion of a very irritating quality whose presence causes the production of papules, pustules, wheals, furunculi, etc. The burrows are diminutive tunnels dug by the impregnant female. When placed on the skin the mite inclines her head, raises her body by aid of the bristles of her hind legs, and disappears below the surface within half an hour. Openings in the roof of such burrows have been described, which are believed to be the places where young mites have escaped. The adult mite can move forward in the burrow, where it finally dies, and is easily obtained for microscopical examination by clipping off with curved scissors a small segment of the integument containing the burrow.

The itch mite attacks with predilection the sides of the fingers, interdigital folds, the wrists, the elbow joints, the axillæ, the mammillæ, the navel, the glans penis, the knee joint, and the buttocks. These regions are preferred, not on account of the softness of the epidermis, as is alleged, but because the skin of these regions is comparatively immovable, or is more firmly attached to the underlying tissue, both of which conditions are very favorable to the mite.

The presence of the parasite in the human skin gives rise directly to an inflammatory process of the papillary layer of this organ. Papules, pustules, vesicles, or bullæ are formed and may be found on or very near a burrow. Red, rather hard infiltrations, following the course of a burrow, appear not infrequently around the axillæ, the penis, the nipples, the navel.

Itching is a very constant symptom, and is usually rather severe, though varying in degree in different persons. It is most intense at night, especially when the patient gets warm in bed. That such warmth is relished by the parasite is proved by the fact that it remains quite motionless when placed upon a cold glass slide, but immediately begins to move when the slide is warmed. The itching is by no means confined to the parts where the acarus resides, but is diffused over other parts of the body as well. To relieve this annoying sensation, the patient scratches the skin wherever it can be reached conveniently. A pruriginoid eruption is the result, which consists of scratch marks, excoriations, and irregular patches of papular, pustular, or vesicular eczema.

In severe cases, especially in children, large pustules appear on the hands, feet, and hips. In exceptional cases furunculi, and even cellulitis, have been observed. In women suppurative mastitis may attack those whose mammillary region is severely affected. In persons who do not scratch, either from apathy or from pathological changes of the ends of the sensitive nerves of the skin, the crusts accumulate to an excessive degree. This form of scabies was originally described by Danielsen and Boeck, who saw it in persons suffering from leprosy. It is termed "scabies crustosa, or norwegica." The thick crusts abound with male and female mites, a description of which is as follows:

The female is just visible as a round, white, shining body, one sixtieth to one eightieth of an inch long (0.3022 to 0.4322 millimetres) and about two thirds as wide. Attached to its conical, stumpy legs are four suckers anteriorly and four setæ or bristles posteriorly, one to each limb. On the back are numerous transverse striæ and serrated lines, with a few short, nail-like setæ; while on the under surface are the legs and a few setæ, and an ovum is often to be seen. The male is about two thirds the size of the female and has a small sucker on each of the inner posterior pair of legs for the purpose of copulation. The larva has at first only six legs, and is not fully developed until after its second or third moult; it also burrows a short distance while it is undergoing its moults. The male acarus has very little clinical significance and is found in shallow excavations of the skin. The time for the larvæ to develop from the eggs is about four to seven days, while the development of the adult acarus from the larva takes about fourteen days (Crocker).

To find the burrow, or even the acarus itself, is not so easy as some authors would lead us to believe. Indeed, the rough edges of epidermal scabs may easily be taken for cuniculi, but if the dark edges of minute epidermal scabs are removed with a pledget of cotton these dark lines disappear, which is not the case with true cuniculi.

An examination of the blood in many skin diseases, such as dermatitis, pemphigus, pellagra, herpes zoster, prurigo, and in some cases of universal eczema, shows a distinct leucocytosis; while in urticaria, pellagra, dermatitis herpetiformis, and pemphigus, an increase in the percentage of eosinophiles in the circulatory blood is constantly found.

Neusser, however, considers this probably a reflex disturbance from the presence of all sorts of psychoses and vasomotor troubles associated with menstruation, pregnancy, and the climacteric; and the so-called "reflex" disturbances attending uterine or ovarian disease are well known. The connection of the skin with both of the last-mentioned systems is seen in the trophic disorders and sympathetic dermatoses of hysteria and ovarian disease.

Scabies shows no blood changes that can be conclusively demonstrated as pathognomonic. But it must be borne in mind that various other eruptions may coexist with scabies. Syphiloderma with scabies, or scabies in children with congenital syphilis, is not of rare occurrence. Purpura and impetigo contagiosa may be associated with scabies. The combination of scabies with leprosy has also been recognized.

In eczema the eruption does not show the localization so characteristic of scabies. In pediculosis capitis an eruption is found chiefly on the head and about the neck, while the eruption caused by pediculi vestimentorum is found in those places where the folds of the clothes touch the skin.

The parasite of pediculosis or phtheiriasis belongs to the anoplura, and is a degraded member of the order *Hemiptera.* This parasite lives exclusively on the scalp and capillitium, and causes irregular patches of moist eczema, pustules, crusts, excoriations, furunculi, and even abscesses, affecting chiefly the occipital region. Pronounced swelling of the glands of the neck is usually present in cases of long standing. The superficial lymph glands may suppurate. Erythema and eczema of the neck and forehead, blepharitis, and conjunctivitis appear quite often. Prurigo papules are densely and numerously located on the extensor surfaces of the lower and upper extremities, while the skin covering the flexures of the joints is rarely involved.

A solitary indurated lesion, caused by the presence of the acarus on the nipple or penis, may be confounded with a hard chancre. In one such case reported by Leviseur there was even an indolent swelling of the inguinal glands of one side, and only the subsequent development of characteristic scabies dispelled all doubts as to correct diagnosis.

The treatment best suited for the cure of all forms of parasitic diseases is that which first of all destroys the parasite, its larvæ and eggs, without irritating the skin, and which at the same time causes an involution of the secondary or pruriginous eruption. To accomplish this many forms of ointments have been used, such as Kaposi's, Wilkinson's, Hebra's modification of Wilkinson's Helmrich's, Bourguignon's, and others.

The so-called Wineberg salve may be effective in certain conditions, but styrax and naphthol may give rise to an acute nephritis if used too freely. The urine of patients who are using these remedies should be systematically watched. A resinous precipitate coagulated by boiling, and treated with nitric acid, is sometimes found in the urine of patients treated with preparations of styrax. This sediment must not be mistaken for albumin; it is soluble in alcohol and ether. Naphthalene is not equal to naphthol.

Oxynaphthoic-acid ointment (Schwimmer) is a non-irritating salve, the formula of which is now so well known as to require no comment.

Ointments and salves, however, have all been tried and are found wanting in many respects, entirely aside from the grease which is so disagreeable to many of the patients who appear for treatment. The strength of the antiparasitic ointments prescribed should also vary according to the individual case. The age of the patient, whether an infant, child, or adult, the natural sensitiveness of the skin, the duration of the affection, and the amount of secondary disturbance are all important points, which have to be carefully considered.

Before the days of bacteriology all treatment was aimed directly at the inflammatory process, and lotions and ointments were prescribed to correct the circulatory disturbance and remove inflammatory exudation. Hebra treated sycosis with diachylon ointment alone and used no antiparasitic agent and no internal treatment. Now many have gone to the opposite extreme, and recognizing organisms as the direct cause of many skin inflammations, employ only direct antiparasitic agents—agents which kill organisms in a test tube. In some inflammatory affections, such as ringworm of the body or an eczema of the head from pediculi, scabies, etc., the circulatory disturbance is not to be considered, and antiparasitic treatment is the only kind necessary; but in sycosis the inflammatory process and the nature of the ground are to be seriously considered. The parasitic agents are also very important, and antiparasitic measures must be combined with the antiphlogistic treatment.

The principles of treatment are: 1. The avoidance of all external irritating or injurious agents of whatever kind, whether solutions, ointments, soaps, or what not. 2. The avoidance of all substances which cause a roughening of the epidermis; and the employment of those only which tend to soften and leave the skin in a healthy condition. 3. The use of antiparasitic agents to destroy the organisms causing the inflammation.

These cardinal principles I believe are all happily combined in a remedy which was brought to my notice last April, since which time I have tried it very generally with results even beyond my most sanguine expectations. The albuminate of mercury has all along been disregarded and designated inert, because it was considered that the bichloride of mercury, when brought in contact with fats and oils, was transformed into an insoluble albuminate, a theory which has lately been entirely exploded by English, French, and German chemists.

Sapodermin is a soap in which the bichloride of mercury is incorporated with triple refined stearin and glycerin. The bichloride is therefore changed into an albuminate of mercury, which is highly active as an antiseptic, destructive to all forms of parasites, fungoid and bacterial growths, yet leaving the skin in a soft, velvety, and pliable condition. There has been no absorption so far as I have been able to judge, and its action is so thorough that I consider it worthy of extensive employment.

A citation of the clinical histories of all the cases observed by me must be omitted here for want of space. It is, however, essential to quote five of these, since they illustrate my views regarding the prompt action of this formula.

C. H., aged nineteen years, came under observation May 20, 1899. Had suffered for several months from intense itchings of the hands, arms, knees, and ankle joints; previous history good, family history negative.

Status Præsens.—Young woman, fairly well nourished, but a trifle anæmic possibly. On hands, outside of arms, the elbow and knee joints, is seen characteristic eruption of scabies. Parasite fully identified. Diagnosis, scabies. Under treatment six days. Discharged cured. Employed only sapodermin, one-per-cent. strength.

W. T. J., aged twenty-six years, presented himself July 12, 1899, suffering from severe itching of body, and a burning sensation, which grew much worse upon retiring for the night; could give no further history bearing upon the case.

Status Præsens.—The patient is large, strongly built, and well nourished. The skin on shoulders and buttocks is covered with dime- to dollar-sized red, crusted lesions. Hands and elbow joints show typical eruptions, but on careful examination could not find parasite. Diagnosis, furunculosis. Had him take a bath each night, using freely of sapodermin, one per cent., and leaving the lather *in situ* for fifteen minutes to half an hour.

July 15th, condition greatly improved.

21st, entirely cured. Duration from commencement of treatment ten days.

W. C. M., aged twenty years. For nine weeks has been troubled with severe itching of scalp, with soreness during last seven weeks. Head bleeds on scratching, and discharge causes much annoyance.

Status Præsens.—Young person of general good condition, but on examination of scalp I found excoriation and many pustules. Hair follicles are generally normal. The process is somewhat deep, having almost a furuncular nature. Cultures made from the secretion show staphylococci and streptococci. Diagnosis, ptheiriasis or pediculosis. This case was under treatment a week and discharged cured. I employed only one-per-cent. sapodermin night and morning.

M. H., aged eighteen years. For more than a year hair has been falling out, which distressed her very much. Hair very long and fine. Has tried everything and been to several of the leading skin specialists without gaining the desired relief. Reported to me September 9, 1899. After a carefully conducted examination was unable to find any parasitic condition, and as ointments of various combinations had been used by other practitioners, I concluded that this would be a good case on which to try the albuminate-of-mercury treatment. I ordered the scalp washed with sapodermin every other night for one week, then had her report before going any further. Upon further examination I found this treatment to have a most gratifying result, so continued for a month longer. The patient I have since discharged fully recovered.

B. R. M., aged twenty-eight years, came under observation July 20th suffering from markedly inflammatory eruption about the legs, which he stated had followed the use of a salve made up of diachylon ointment and vaseline. He had applied this to his legs, as he alleged, for the relief of an eruption which had been itchy, and had rubbed it in repeatedly with great vigor. After five days' use of this ointment the present eruption made its appearance. Three days later he reported to me.

Status Præsens.—The extensor surfaces of both legs to the lower third, also the posterior surface of the right thigh near the knee, are the seat of numerous irregularly grouped large pustules. Out of the centre of each pustule emerged one or more hairs. The skin immediately surrounding the discrete lesions is reddened; where these are in groups the redness is confluent. The color is bright red, and may be made to disappear momentarily by pressure. There is no pronounced infiltration. The oldest of the pustules and purulent blebs show already hæmorrhagic contents. Some have been broken and have given place to reddish crusting, the rest of the body being entirely free from efflorescences. Here and there are scratch marks, especially on the flexor surfaces of the axillæ. The patient remained under observation for two weeks, during which period several boils developed. At the end of this time all the pustules had dried up, and from most the crusts had already fallen off; the boils had also practically run their course.

This case should be classed as a follicular pustular dermatitis, which is occasionally noticed to follow the vigorous rubbing in of ointments (especially if such are not very fresh) on hairy parts. Treatment was purely antiseptic, sapodermin being employed liberally, and the patient finally made a thorough recovery in a remarkably short time.

At the present time I have under observation many other patients, several of whom have almost entirely recovered, and each disease has been remarkably shortened by the application of these local measures, especially where the disease is of a parasitic or fungoid nature. But the cases given above will serve to illustrate the character of diseases most apt to be benefited by the albuminate of mercury, or, as it is otherwise termed, sapodermin.

THE DETERMINATION OF SEX AT WILL.*

By J. GRIFFITH DAVIS, M. D.

Both medical journals and the lay press have recently contained many articles called forth by the writings of Dr. Schenk on the determination of sex at will. His theory is that the ruling factor, in determining sex, is the food partaken of by the female. Several friends, members of the medical profession as well as patients, who have been cognizant of my work in this direction for the past twenty years, have urged me to state my experience, as facts, well authenticated, are more convincing than all the theories one can gather in a decade. In an article published in the *Journal of the American Medical Association*, February 20, 1896, replying to one entitled The Despised Office of Motherhood, I maintained that offspring should not come haphazard, but as invited guests, under the most favoring conditions of both parents, and the mother should determine the time and season for assuming the duties of maternity.

Furthermore, given these factors, every true wife, who loves her husband, is willing—nay, anxious—to bear children to him, barring physical defects, for which she is not responsible.

I have been advocating these measures for more than twenty years, and am now ready to testify to facts or results, although I can not fully elucidate the "eternal why"; only, on general principles, I fully believe that the great law of vibrations is the only thing that will throw any light on the subject. We know that all demonstrations of force in Nature or the universe are due to vibratory law.

Therefore I theorize that during ovulation the rate of vibration in the female must be higher, rendering her positive and the ruling factor. It is logical, therefore, to conclude that the result of sexual association near the period will result in a female. *Vice versa*, when the rate of vibrations in the female is lowered and she becomes negative, so to speak, we argue that the male element will predominate in the later association and a male be the result.

This I do know, that I have directed conditions that determined the sex every time. So much interested have I been in trying to settle this question that I have experimented with animals. One case I shall report later. I can not recall where or how I got my first idea of governing sex, but I knew a dog fancier who raised black-and-tan dogs for the market and did not want females, as they were not generally salable. I learned that he shut the female up securely till she was nearly over her heat; then, when she conceived, her progeny were always males.

When I was still young in the profession I found the majority of families desired equally boys and girls. I began to reason by analogy, that what held good in the animal kingdom ought to hold in the animal side of the human being. Therefore, guests invited within forty-eight hours after the cessation of the menstrual period were invariably females, and decidedly so, little girls through and through, and I could show many photographs to prove this.

Where male issue was desired, I advised continence for from eight to ten days after the cessation of the menses, and have never known that to fail in producing male children.

I shall now relate a curious phenomenon: where eight days were chosen, the result in one case was a male, in another case a female. I had a chance to observe the two cases closely, and will state that the male child was decidedly feminine, while the female child was decidedly masculine—a regular "tomboy." I have therefore come to the conclusion that eight days is a pivotal point, so to speak, and I advise ten days' wait where male issue is desired. I have observed another fact—namely, that a guest invited within three days of an expected period will prove to be a female. This, I argue, is due to the vigor of the zoosperms and their power to exist till the ovum is thrown off to be impregnated. Thus the same condition obtains as if sexual association occurred immediately after the period. Sometimes the period will be arrested, and when this happens I believe it will account in a measure, at least, for cases that seem to go two or three weeks past the usual time we are taught to tabulate.

In all the cases of this kind that I recall at present the children were females. Of course, this presupposes that my patients are willing to practise self-denial or absolute continence for a certain number of days. The majority of women are really immune (if I may be allowed to use this expression in this connection) from danger of conception from fifteen days after the cessation of the menses till three days before an expected period.

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* Read before the Alumnæ Association of the Women's Medical College of Pennsylvania, Philadelphia, May 19, 1899.

I have watched one case through a period of years. In seven births, five have been males and two females. Of these, two were twins, one a male and the other a female. At first one would conclude this was a deviation from the rule. I feel sure it is not, as we know the ova are developed unequally.

One may be retained several days after the rupture of the Graafian vesicle of the opposite side; hence the conception must take place for each one separately. I have not had an opportunity to test this fact fully, but I fancy that where the ovum is double the conception will produce two of a kind. Where there is an interval, the product of conception will occupy two different amniotic sacs and vary in sex.

I could adduce a volume of evidence on "the determination of sex at will," but will give only a few illustrative instances. The first cases date back over a period of twenty years. The first two children were invited within forty-eight hours after the cessation of the menstrual period; both were females. In the third case a male was desired. The sexual association occurred eight days after the cessation of the menses— a male resulted. He proved to be decidedly of a feminine type. My next case was that of a woman who had borne four sons. She stated that it was always ten days after her periods before she ran any risks of conception. She was very anxious for a daughter. I gave her my experience or rather my *instructions.* Her next child was invited within forty-eight hours after her period, and a daughter was the result. As she wished an equal number of both sexes, three daughters followed in succession. My next case was that of a woman with two sons, who was very desirous of a daughter. Again the rule was proved correct.

My next case was that of a woman who wished her first child to be a male. I gave her the rule; she waited eight days, and, to my chagrin, the result was a female. She was of a very masculine type. This same woman, so anxious for a son in due season, made another effort, waiting ten days after her period, and a male was the result, and a very thorough male at that.

I could readily prove the facts in these cases were it proper to divulge names under such circumstances. As an earnest physician, seeking to bring happiness as well as health to my patients, I have sought to aid them in every possible way toward this end.

My next case was that of a woman who had borne a son with the most extreme suffering. She said she would not be willing to bear another child unless she could be sure of a daughter. As she was my patient at the time, I urged her to wait till she was in good condition, thoroughly well, and I would assist her to secure her heart's desire. Accordingly, at a stated period, in accordance with rules laid down in so many cases, a guest was invited, and in due course a daughter came—the joy of the house. And, let me add, I cared for that woman all through the period of gestation, in every way sustaining her mentally and physically, with reference to her diet, baths, douches, etc. She was one of the most faithful, obedient patients I ever had. When parturition came, it was an ideal case. She got through so safely and with comparatively little suffering. (She said she had suffered as much with some of her menstrual periods in girlhood.) I could multiply these cases indefinitely and show photographs to prove them, but I shall only say to my professional fellows: Try these rules in your own *clientèle* and *prove* them.

All this presupposes a complete mastery of the situation and the ability of prospective parents to practise self-denial and moderation to secure results. As this is for professional persons directly, I shall now relate my experiment in the animal kingdom (as I promised in the first part of my paper), where I could control the time. I had a beautiful female cat. My neighbor had an equally beautiful male. I was so situated that I could keep them apart till the female was nearly over her heat. She was then allowed to associate with the male. In precisely nine weeks she gave birth to three males, which I reared. And here let me say these invited guests in the *animal* as well as the *human* kingdom were of marked superiority over the ordinary haphazard progeny.

When you fully consider the matter you will realize that such results are natural and logical.

Stock-raisers study to breed animals under the very best conditions, which means intelligently controlled conditions; and only man, God's highest creation, is left to enter life regardless of any law except the civil code of the land.

We think physicians should labor to overcome this state of affairs. They, as a class, have grave responsibilities in regard to the proper adjustment of the sexual relations. They alone are in a position to fully realize what momentous results follow the abuse of the sexual relations—not alone in the evils of licentiousness, so prevalent among the low and degraded, but also in suffering from want of knowledge among the otherwise intelligent and favored classes, who should be better informed.

The physician stands at the gate of life as well as at the gate of death, and shall he not guide toward the best in life as well as away from the pain and sharpness of death? I try to instruct prospective parents in regard to their moral as well as physical influence over the child to be, trying to make them understand that the immortal soul they are invoking out of eternity (not coming of its own volition) has a right to the very best of their natures—moral as well as physical—and they are in duty bound to seek wisdom and govern themselves accordingly.

Some may think the ideas herein advanced are Utopian. I assure you they are thoroughly practical, and, I believe, legitimate. It is always lawful to obey law, and if we have discovered a law of our being we can rejoice in the knowledge. God has given human beings reason, and they therefore should aim to lift the sexual relations above the plane of ignorant and blind instinct.

The regeneration of the race depends upon *how* God's munificent laws are observed and obeyed, and those who are law-abiders are always the happiest and most successful people.

114 West Thirteenth Street.

STUDIES ON INTERNAL ANTISEPSIS.

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(*Concluded from page 221.*)

Staphylococcus Infection.

Staphylococcus and Nosophene.—The infection with *Staphylococcus pyogenes aureus* was conducted in exactly the same manner as in the streptococcus infection. Two healthy animals were used. One of these, XXII, received thirty minims of a staphylococcus culture which had grown one day at 37° C. Animal XXIII was treated in the same way, but nosophene was poured into the wound before closing the flap. This was done on June 30th. The development of the disease and the influence of antinosine and nosophene treatment may be seen from the curve shown in the following table, which gives the average weights and temperatures of both animals:

	Rabbit XXII.			Rabbit XXIII.		
Day.	Injections and operation.	Average temperature.	Change of weight.	Injections and operation.	Average temperature.	Change of weight.
1st	Flap wound; 30 minims staphylococcus.			Flap wound; 30 minims staphylococcus; nosophene.		
To 6th		103.55° F.	−145 grm.		103.25° F.	−55 grm.
7th	30 minims staphylococcus			30 minims staphylococcus; nosophene.		
To 9th		103.07° F.	−133 grm.		102.625° F.	−85 grm.
9th	30 minims staphylococcus			30 minims staphylococcus; 42 mgrm. antinosine.		
10th	30 minims staphylococcus			30 minims staphylococcus; 42 mgrm. antinosine.		
11th	15 minims staphylococcus			15 minims staphylococcus; 21 mgrm. antinosine.		
To 12th	Staphylococcus culture contains some colon bacilli.	103.345° F.	−81 grm.		103.5° F.	−5 grm.
13th	1 c. c. pure culture of staphylococcus.			1 c. c. pure staphylococcus; 21 mgrm. antinosine.		
To 15th		103.549° F.	−46 grm.		103.061° F.	+74 grm.
16th	Nothing			0.25 grm. antinosine (5 ctgrm. daily).		
To 20th		102.573° F.	−47 grm.		103.546° F.	+32 grm.
21st	1 c. c. staphylococcus culture into jugular vein.			Same as in rabbit XXII.		
To 23d		103.266° F.	−67 grm.		103.322° F.	−32 grm.
24th	Temporary ligation of the vessels of one kidney.	102.8° F.	−73 grm.	Same as in rabbit XXII.	102.1° F.	−51 grm.
25th	20 minims clear staphylococcus culture into right pleural cavity.			Same as in rabbit XXII.		
To 26th		103.15° F.	+16 grm.		102.6° F.	+37 grm.

Antinosine sometimes elevates the temperature, although the animal gains weight during the same period. This is clearly shown on the 16th to 21st, during which time rabbit XXII received no treatment, whereas rabbit XXIII received twenty-five centigrammes of antinosine in daily doses of five cubic centimetres. Although the latter animal was much smaller than the former, it gained thirty-two grammes; the non-treated animal lost forty-seven grammes during the same time.

This increase of gain and loss is taken from the difference of weight between the first and last weighing during this period. It may be argued that this estimation is somewhat objectionable, because the morning weights, with one exception, are lower than the evening weights. If the morning weights are compared, then rabbit XXII lost fifty-three grammes; if the evening weights are compared, the loss is much higher—a hundred and sixteen grammes. Comparing the first and last morning weight, rabbit XXIII lost forty-nine grammes and gained sixteen grammes in evening weight. I think it will be more correct, therefore, to take the average weights of these five days, which gives the following results:

	Average weights.	
	Rabbit XXII (without treatment).	Rabbit XXIII (antinosine).
From 1st to 6th day	2,334.5	1,222.8
From 7th to 9th day	2,337.8+ 3.3	1,319.0+96.2
From 9th to 12th day	2,220.5−17.3	1,262.5−56.5
From 13th to 15th day	2,206.0−14.5	1,285.0+22.5
From 16th to 20th day	2,127.8−78.2	1,276.5− 8.5
From 21st to 23d day	2,055.1−72.7	1,287.0+10.5
From 24th day	2,052.5− 2.6	1,229.0−58.0 kidney.
From 25th to 26th day	1,971.5−81.0	1,203.5−25.5

In the whole series of different applications, the non-treated animal (XXII) gained somewhat during the first period and lost during the other. If we exclude the kidney operation and its sequelæ of the twenty-fourth day, the total loss of this animal amounts to 179.4 grammes. The animal treated with antinosine lost and gained in two of these periods, but the gain was larger than the loss. The first amounted to 118.7 grammes, the last to 65 grammes, so that this animal showed a definite gain of 53.7 grammes, as against 179.4 grammes lost by the non-treated animal. I think this gives evidence of the enormous influence exerted by the antinosine treatment in this case.

The difference in weight noted after the first staphylococcus infection is also very significant. I waited six days before making a second injection, at the expiration of which time the effects of the first infection had mostly subsided. During this period the weaker antinosine animal shows a gain of 96.2 grammes in average weights. The non-treated animal gained but 3.3 grammes.

It seems remarkable that after the injection of a pure culture on the thirteenth day the average showed a loss of 14.5 grammes in the non-treated animal and a gain of 22.5 grammes in the treated animal. The animals were in the same cage and had free access to the food. The same and greater differences are shown in the period after the injection on the twenty-first day—namely, a loss of 72.7 grammes in the non-treated animal as against a gain of 10.5 grammes in the treated animal.

A second series of experiments with staphylococcus and nosophene were conducted in the same manner upon rabbits XXIV and XXV, the latter receiving the drug. The difference in weights of the animals was somewhat large, being three hundred and fifty grammes; the weaker animal was treated with antinosine. This series of observations clearly showed the influence of antinosine upon staphylococcus infection, but it also showed that the dose of this substance administered to the weaker animal was not sufficient. It lost more and had a higher temperature than the stronger animal, XXIV. On the third day the antinosine animal gained more than the non-treated animal. The average weights on different days are given in the following table:

	Rabbit XXIV.				Rabbit XXV.			
Days.	Average weights, grammes.	Difference, grammes.	Infection and treatment		Average weight.	Difference.	Infection.	Treatment.
1	1,218.0	.....	Staphylococcus		864.5	......	Staphylococcus	Antinosine, 0.02
2–3	1,171.8	—46.2	Wound		838.0	—26.5	Wound	Antinosine, 0.05
3–5	1,154.0	—17.8	Staphylococcus		879.8	+41.8	Staphylococcus	Antinosine, 0.05
6	1,151.0	—2.66	....		852.5	—27.3	....	Antinosine, 0.05
7	1,167.0	+15.66	....		881.5	—29.0	....	Antinosine, 0.05
8	1,123.5	—43.5	....		848.0	—33.5	....	Antinosine, 0.05
9	1,103.5	—20.5	....		860.0	+12.0	....	Antinosine, 0.05
10	1,133.0	+29.5	....		880.5	+20.5	....	Antinosine, 0.05
11	1,163.0	—30.0	Staphylococcus in vein.		865.0	—15.5	Staphylococcus in jugular vein.	
12–13	1,121.0	—42.0	....		771.5	—93.5		
14–16	1,114.33	—6.66	....		757.5	—14.0		

We must next consider the influence of antinosine and nosophene upon cellular development occurring during the course of staphylococcus infection.

In the experiments above described, a very pronounced influence upon the appearance of multinucleated and eosinophilic leucocytes in the blood was noted as a sequel of infection with staphylococci and subsequent treatment with antinosine and nosophene. The promotion of leucocytosis by the treatment seems to be a very important feature and one quite opposite to the well-known negative chemotactic effect manifested by the other iodine preparations. Since Binz has shown that iodine is not liberated in the body from the substances under consideration in sufficient quantity to be detected in the urine, it follows that this phenomenon of leucocytosis must be connected with the action of tetra-iodo-phenol-phthalein as a molecule. It is not improbable that iodine may also be set free in minute quantities by contact with the living cells, and may then act by absorption through the living protoplasm. The next table shows the degree of leucocytosis occurring after staphylococcus infection with and without treatment with antinosine and nosophene.

Following the custom adopted since Ehrlich's publication, I have given in the second vertical space the relation of white to red blood-corpuscles. For a better understanding, it seems advisable to use the reciprocal figures instead of this relation—*i. e.*, to give the number of leucocytes found with 100,000 red blood-corpuscles. These figures are given in the third column. They are in direct relation to the increase or decrease of the leucocytes in the same quantity of blood.

If the following table is carefully read, it will be found that, immediately after the first injection of staphylococci and antinosine, rabbit XXIII, which was smaller than the other, shows a very large number of leucocytes in the blood—*i. e.*, 1,333 white to 100,000 red. Rabbit XXII received the same quantity of staphylo-

	Rabbit XXII.				Rabbit XXIII.			
	LEUCOCYTES.				LEUCOCYTOSIS.			
DATE.	White to red.	To 100,000 red corpuscles.	Eosinophilia.	Infection.	White to red.	To 100,000 red corpuscles.	Eosinophilia.	Infection.
July 1st...	1 : 289	346	73.3 per cent.	Staphylococcus.	1 : 75	1,333	48.5 per cent.	Staphylococcus and antinosine.
July 5th...	......	.....	....	....	1 : 237	421	53 "	Staphylococcus and antinosine.
July 10th..	1 : 94	1,063	44.4 per cent.	Staphylococcus.	1 : 382	261	100 "	Staphylococcus and antinosine.
July 11th..	1 : 36	2,777	70.0 "	Staphylococcus.	1 : 79	2,658	80 "	Phagocytosis.
July 12th..	1 : 290	344	35.0 "	....	......	.....	48.0 "	Staphylococcus and antinosine.
July 13th..	......	.....	....	....	1 : 117	854		

cocci but no antinosine, and, although it was the heavier and stronger animal, it showed but 346 leucocytes in 100,000 red, or less than one fourth of the number present in the antinosine animal. Eosinophilia was greater in this animal than in the antinosine animal, but the absolute quantity of leucocytes containing eosinophilic granules was smaller; the relative eosinophilia was only 73.3 : 346 = 253 eosinophiles to 100,000 red corpuscles. Rabbit XXIII showed more than double the number of eosinophiles—*i. e.*, 646 to 100,000 red corpuscles. During the following day rabbit XXIII showed 223 eosinophiles, nearly as many as rabbit XXII during the first day. After the second staphylococcus infection, on June 10th, rabbit XXII had 472 relative eosinophilia, rabbit XXIII 261, but this time the latter animal received but half the quantity of antinosine administered at the first dose—*i. e.*, twenty-one milligrammes as against forty-two milligrammes.

At the following injection, on June 12th, rabbit XXII had 1,944 and rabbit XXIII 2,120 eosinophiles to 100,000 red corpuscles. On the day following this injection rabbit XXII had 117, and on the third day rabbit XXIII had 409 relative eosinophilia. As the eosinophilia provoked by staphylococcus infection disappears in a very few days, we must conclude that the addition of antinosine not only increases the number of leucocytes entering the blood from the bone marrow, but also augments their power to destroy decayed red blood-corpuscles and to take up the *débris* of the latter in the form of eosinophile granules. On June 11th the antinosine animal showed a very severe phagocytosis of the red blood-corpuscles. The leucocytes contained large masses of their *débris*. This phenomenon clearly shows the highly important biological action of the leucocytes in taking up the blood plates and hæmoglobinic remains of the decayed erythrocytes. Of the first (blood plates) we know that they cause obstruction of vessels, whereas the hæmoglobin compounds seem to exert a beneficent influence upon regeneration, as was noted in the streptococcus infection. As a similar process could never be observed in the absence of antinosine, we must ascribe this favorable action to this substance alone.

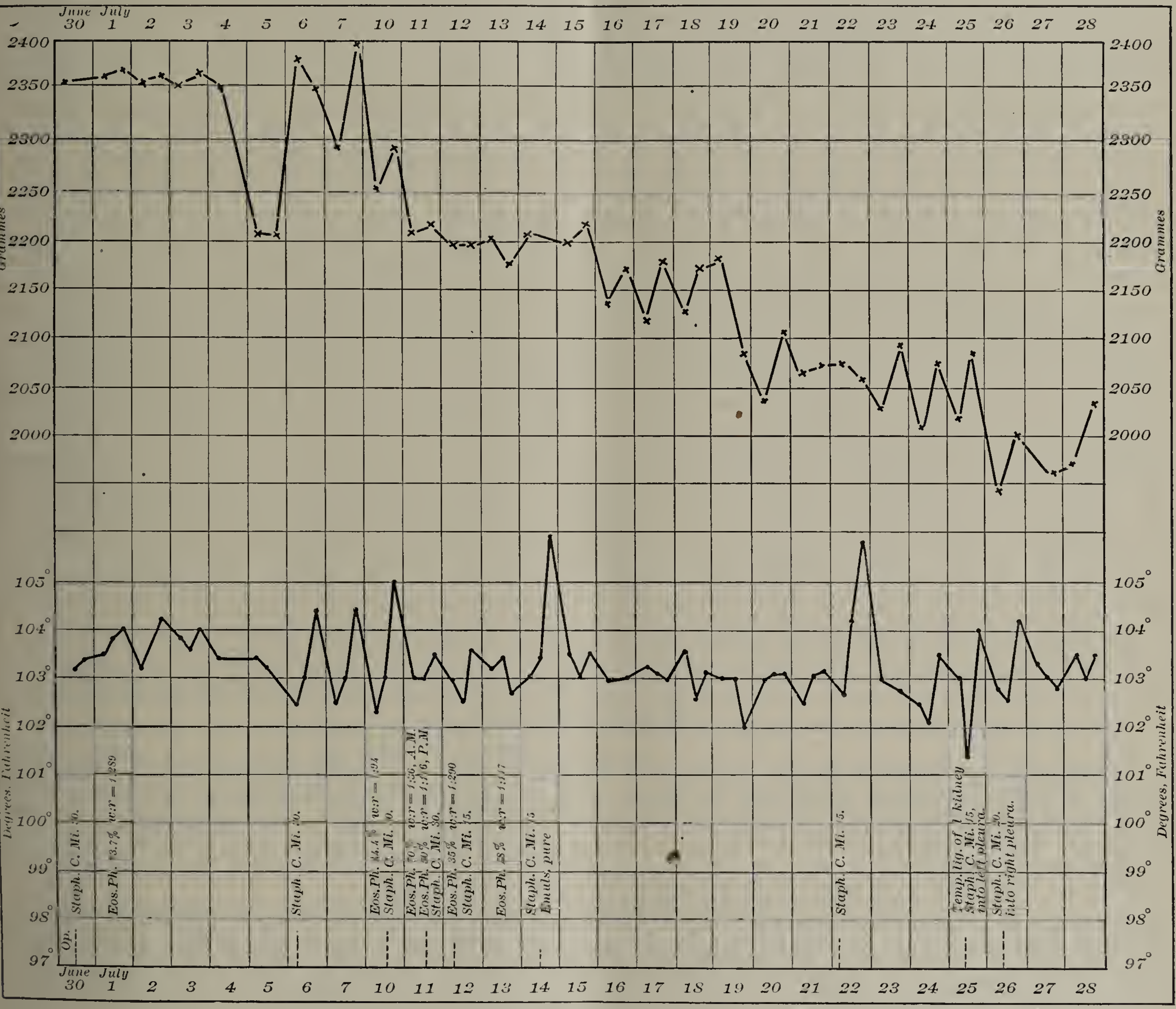
The table below gives the relations in the second series of experiments with staphylococci and antinosine.

In this series the difference in weight of the two animals was very large—*e. g.*, rabbit XXIV weighed 1,218 grammes; rabbit XXV, 846 grammes. From this difference in weight it is readily understood why the resistance of the animals varies so much, as is shown in former tables of weights and temperatures. Hence, it is not surprising also to find a very different leucocytic reaction. Notwithstanding this very probable suggestion, we find that after the first staphylococcus infection the leucocytic invasion is by far more intense in the antinosine animal than in the stronger non-treated animal. Rabbit XXIV had 240 leucocytes to 100,000 erythrocytes, which number may be looked upon as a high degree of leucopenia (hypoleucocytosis). In the usual expression of the clinics it would represent 8,400 leucocytes to the cubic millimetre, if the blood of man contained the same number of elements as that of rabbits—*i. e.*, 3,500,000. Of these, only 79 in 100,000 red blood-corpuscles, or thirty-three per cent., were eosinophiles. The active work of these cells was not very intense. In very strong contrast to this, the small animal (XXV), which had received the same amount of staphylococci along with antinosine, showed a leucocytosis of 826 and an eosinophilia of 363.44 to 100,000 erythrocytes. The cellular reaction is four to five times greater in rabbit XXIV, and the high value of the latter factor shows that the depurating power of the blood was on this day nearly five times higher than in the other animal. But with primary effort the bone-marrow activity seems to be exhausted. On the following day, when a

	Rabbit XXIV.			Rabbit XXV.		
DATE.	Leucocytosis.	Eosinophilia.	Infection.	Leucocytosis.	Eosinophilia.	Infection and antinosine.
July 12th....	240	79.2	Staphylococcus, 15 minims	826	366.44	Staphylococcus, 15 minims; antinosine, 11.2 ctgrm.
July 13th....	290	145.0	Flap wound................	146	91.9	Flap wound; antinosine, 5 ctgrm.; leucopenia.
July 14th....	324	212.0	Staphylococcus, 15 minims	221	84.0	Staphylococcus, 15 minims; antinosine, 5 ctgrm.
July 15th....	444	306.0	....	440	228.0	

flap wound was made on the back, we note slight progress in leucocytosis in rabbit XXIV, but a decided decrease in XXV—hypoleucocytosis. The percentage of eosinophiles was higher in XXV than in XXIV—sixty-three per cent. as against fifty per cent.—but the quantity of leucocytes was deficient. The leucopenia was really not so intense as on the first day of XXIV—5,110 as against 2,772 to the cubic millimetre.

On July 14th rabbit XXV received a new infection along with five centigrammes of antinosine, so that the animal was under the influence of the relatively high dose of 0.1 gramme antinosine. The effect was a very good one, as the leucocytosis reaches 221; the eosinophilia of 84, or thirty-eight per cent., is deficient, but this factor also rises to 228, or fifty-two per cent., during the next day, and is then not much smaller than in the stronger animal, XXIV.



NOTE: w:r, relation of white to red blood corpuscles.

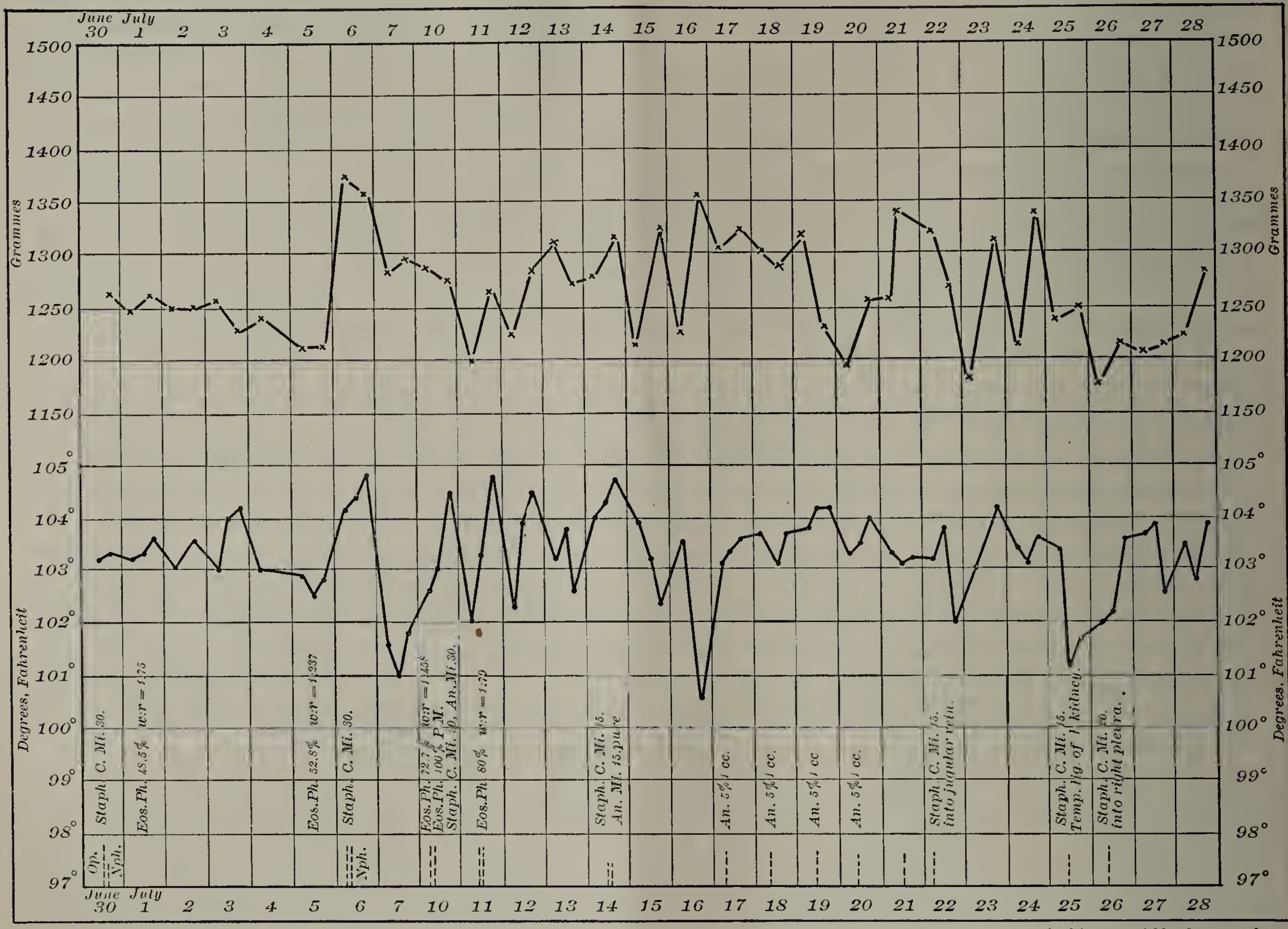
Chart I.—Rabbit XXII.

The antinosine in this case has acted in the same way as in our first series of experiments with staphylococcus infection. We learn therefrom that a dose of five centigrammes to an eight-hundred-and-thirty-nine-gramme animal, or nearly six centigrammes (one grain) to the kilo (two pounds) weight, will not be toxic. To a man weighing a hundred pounds we may give, without fear, a daily dose of fifty grains.

How far we must go in the use of antinosine in grave cases of internal sepsis, as in septic endocarditis, can be learned only by carefully conducted experiments at the bedside. However, the total absence of toxic qualities in connection with this high dose permits us to express the hope that these at present incurable affections may be checked by the use of antinosine. To obtain better results from dosage, it is advisable to administer the drug hypodermically. Every one who has watched such cases at the bedside must concede the importance of accomplishing the expectations just expressed.

Conclusions.—In summarizing the results of these experiments, we may consider nosophene and antinosine of great importance in septic infections caused by streptococci and staphylococci.

I think I have shown, first, that in non-infected wounds the employment of these substances insures the normal healing process. In this respect I may lay especial stress upon the prompt development of leucocytosis and eosinophilia. We have seen that the latter cells, by division and multiplication in the wound, seem to produce a healing substance which may be absent if the wounded organism is lacking in vitality or the cellular processes are sluggish.



NOTE: w:r, relation of white to red blood corpuscles.

CHART II.—Rabbit XXIII

Secondly, the use of antinosine in general septic infections seems to weaken the action of the micro-organisms introduced and to promote the vital functions. Its use is also unattended by the danger so often noticed in connection with the employment of other iodine preparations of no value in internal sepsis.

To render this more evident, I give the total curve of the rabbits XXII and XXIII, which were infected with the same staphylococcus culture, XXII receiving no treatment, and XXIII receiving antinosine. One glance suffices to show how much the last animal is favored as to conservation of weight, whereas the non-treated animal shows a continual loss of weight, notwithstanding the fact that it was by far the stronger and larger. The difference in temperatures is also very marked; not that the antinosine animal had no fever, but the higher temperature so necessary in the struggle against the infecting organisms is of a more continuous type and never shows the enormous rises, such as were always noted after injections of staphylococci into the other animal. Antinosine does not possess the antipyretic value of antipyrine, but I think a continuous regulation of the temperature will rather be preferred by the practitioner to acute depressions, which are often so disastrous in the course of the usual antipyretic treatment.

That this mode of action in opposition to internal sepsis is of very great value, has been demonstrated to me in several cases, especially in a very grave case of diabetes complicated with a septic affection of the thyroid gland. For internal as well as external application I use antinosine 1 to 1,000 in the mouth, pharynx, and nose. Internally, I give from three to six tablespoonfuls of the same strength solution.

A New Journal of Tuberculosis and the Affairs of Sanitaria, entitled *Die Zeitschrift für Tuberculose und Heilstättenwesen,* has been started. It is edited by Dr. C. Gerhardt, Dr. B. Fränkel, and Dr. E. von Leyden, and published in Leipsic by Mr. Johann Ambrosius Barth.

THE TREATMENT FOR HYPERTROPHY OF THE INFERIOR TURBINATED BONE.

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THE discovery of the power of cocaine by Koller did more for the specialty of the throat and nose than for any other branch of surgery.

The anæsthetic properties of this drug enabled the surgeon to perform the most difficult operation in this region without pain, but the power it has in producing contraction of the blood-vessels rendered him even greater service.

It enabled the specialist to search far back into the nose for disease. It opened up to him the whole area of the nose. Every recess of this chamber could now be brought into view.

A bent sæptum in the posterior portion of the canal was seen as plainly as one in the front. A polypus high up in the superior meatus was discernible; while previously its presence could not have been detected.

The discovery of this drug made the specialty of the throat and nose. It had existed before, but the advent of cocaine injected new life into it and made it what it is to-day, one of the most important specialties of surgery.

The discovery of the properties of the suprarenal capsule on the mucous membrane again helped. It enabled the surgeon to perform an operation on the mucous membrane of the nose that is almost bloodless.

Like cocaine, it contracts the mucous membrane down upon itself and permits a thorough search of the nasal cavity.

I have prefaced this article with these few remarks about cocaine and the suprarenal capsule, as their power to expel blood from the mucous membrane, whether in a normal or abnormal condition, and to bind the mucous membrane down upon itself, allows the observer to search the nasal chamber thoroughly for any obstructing element.

In a normal nose, or in a nose affected with hypertrophic rhinitis, after it has been treated either with a solution of cocaine or the suprarenal capsule, there will be a space between the sæptum and the turbinated bodies; also a slight distance between the inferior turbinated body and the floor of the nose.

If the inferior turbinated body is found to hug close to the sæptum after the mucous membrane has been so treated, we are called upon to treat then an enlargement of the bone itself.

This is a condition that has been ignored almost entirely. Some writers speak of it under the term turbinotomy; others fail to recognize the hypertrophy of the bone, and allow their patients to breathe through their mouths when fall and winter appear.

An operation should be judged by the success following it. If this is the rule, in judging the operation for removal of part of the inferior turbinated bone when it is hypertrophied, I shall place it second to none in this region. I have yet to find a patient, when I have so operated, who has not been more than satisfied with the results obtained.

Old chronic catarrh cases in the Bellevue throat clinic have been treated for years, but always returned during the damp weather with nasal stenosis. They have been discharged cured after an operation on the inferior turbinated bone. I do not believe that every inferior turbinated body should be operated upon, but when the inferior turbinated bone is close to the sæptum, and entirely obstructs the inferior meatus, after the mucous membrane has been treated with cocaine or the suprarenal capsule, or, better, with both of these drugs, we are called upon to deal with a case of hypertrophy of the inferior turbinate.

The space between the sæptum and the turbinates may be quite large and appear to afford ample room for nasal breathing; this is especially true if the patient should come under our observation after a brisk walk, when the parts would be well separated, but they will close when the patient is at rest, such as sleeping, reading, or any indoor occupation.

I saw this excellently illustrated in a medical student who applied to me some years ago for treatment, when I first started to perform this operation for stenosis.

When he called at my office I found the sæpto-turbinated space what I considered large enough for nasal breathing. I tried each nostril separately and found that he could breathe freely through both the right and the left; but he stated that the nasal space would close and that he would be compelled to breathe through his mouth after he had been confined to the house for a few hours.

I tried every manner of procedure in this case, but the only remedy that gave him any relief was an operation on his inferior turbinated bone; since then he has been entirely free from his old trouble of stenosis and bronchial attacks in the winter.

In these cases the cocaine or the suprarenal capsule will contract the tissue, so that a slight breathing space is secured. But the moment the effect of these drugs passes away the nose is again stenosed.

I have used actual cautery and chromic acid on these without any benefit.

The operation is so simple, and the result so gratifying, that I now operate in every case where my crucial tests by cocaine and suprarenal capsule show that the sæpto-turbinated space is partly or entirely obliterated.

In working in this locality it is wise to remember that we are operating upon tissue rich in blood-vessels, and it is the duty of the operator to prepare his case against secondary hæmorrhage as much as possible.

I do this by prescribing ten grains of quinine with twenty grains of bromide of potassium each night at bedtime for a week or two weeks previous to an operation in this region. I also give the Warburg tincture three times daily before each meal. This I have found diminishes the hæmorrhage during the operation, prevents the disagreeable chills and fever afterward, and greatly tends to help the early removal of the plugs that are necessarily inserted after the part has been removed. This condition is purely a disease of adult life.

It is seldom I am called upon to operate on a patient under twenty years of age. Patients who have hypertrophied inferior turbinates under this age are those who have long been exposed to some malarial influence and are generally of the strumous or tubercular type.

The treatment by quinine previous to operation has the effect of reducing the inflammation of the mucous membrane that is always found in these conditions.

When I am ready to proceed with the operation, I first clean out both nasal chambers with some alkaline solution, such as Dobell's or the Seiler tablets. Then I spray in a solution of the suprarenal capsule. I have found that this drug greatly diminishes hæmorrhage during the operation and partly controls any secondary hæmorrhage.

I then spray in a two-per-cent. solution of cocaine. After this I pass over the entire seat of my operation with a twenty-per-cent. solution of cocaine. If the cocaine has been properly applied, the operation is free from pain.

Care should be taken to carry the cocaine well back on the pharynx and under the turbinated bone.

I now introduce a small saw under the turbinated bone and make my cut from below upward and inward toward the sæptum. We should be careful to carry the saw well back so as to cut the posterior portion of the turbinated, otherwise this part will adhere, and a second operation will be needed for its removal.

After the desired portion has been amputated it will fall to the floor of the canal.

I now introduce a pair of long, curved forceps, seize the cut part, and remove it.

The hæmorrhage following the operation is generally a little more than in an operation on the sæptum, but it is quickly stopped by introducing a plug of cotton and carrying it well back to the posterior portion of the nose.

I have found absorbent cotton to give more satisfaction as a nasal plug than strips of iodoform gauze. The latter I used very extensively for six months, and during this period I had several cases where a dripping of blood continued for some time, attended by violent attacks of sneezing. The sneezing I traced to an irritation produced in the nasal canal by the iodoform.

Since I have gone back to the plain absorbent cotton I have not had my patients complain of the sneezing and the sudden gushes of blood after the part had been packed.

I allow the plug to remain in the nose for twenty-four hours. I then remove the forward portion; if this is followed by a hæmorrhage I allow the rest of the plug to remain until the next day, when it can be removed without any danger of hæmorrhage.

I now prescribe a wash, either the Seiler tablet or Dobell's, and direct my patient to clean the nose out with it night and morning for the space of two weeks, when the crust formation will cease. A little vaseline snuffed in the nose is also a pleasant expedient.

It takes from a month to six weeks for the parts to completely heal, when a patency of the nose is established that will not close with every change in the weather. Atrophic rhinitis will not follow this operation.

I have operated over a thousand times upon the turbinated bone, and I have never yet seen a case where the patient was not greatly relieved by this operation when it was indicated.

I have watched these cases for four years after my operation, and have never seen any dryness of the pharynx or any condition like an atrophic rhinitis follow.

In treating nasal diseases I consider it of the greatest importance that the inferior meatus be clear and able to perform its functions—namely, to serve as a transmitter of air to the lungs and as a drain to the various sinuses that open into the nose.

I consider this meatus of so much importance in the economy of the nose that I shall operate to reestablish this drain or meatus in cases where I find polypi return after they have been thoroughly removed. I cite the following case:

Case A.—Dr. S. has been under my care for the last seven years for polypi of the nose. Both the right and the left nasal passages were involved.

Dr. S. had been under another practitioner for five years previous to his first visit to my office seven years ago, making a total of twelve years that he has been under treatment, during eleven of which he suffered with these growths.

I had been called upon to remove five or more large polypi from his nose about every three months for the space of six years. I tried everything as an astringent to prevent their recurrence. My favorite applications of alcohol and witch-hazel were both inert in his case.

The recurrence of the growths gave him so much discomfort and interfered with his breathing to such an extent that I finally proposed an operation on his inferior turbinate. I performed the operation on both sides.

It is now a year since I operated, and I have failed to observe any recurrence of the polypi.

This is not an isolated case of this nature. In all cases where polypi are prone to return after operation see that the inferior meatus is put in its normal condition, and a factor will be secured that will render the return of nasal polypi less probable.

CASE B.—Miss B., aged nineteen years, had complained of catarrh from childhood. She was a tall, thin girl, with a contracted chest, a bad appetite, a worse digestion, and one who generally looked upon the dark side of life with all its vicissitudes.

An examination of the nose showed both nostrils occluded even after the application of cocaine and the suprarenal capsule. Both inferior turbinates were partly amputated and the inferior meatus enlarged to a sufficient size for drainage.

This patient gained fourteen pounds three months after the operation. Her chest began to develop and her appetite and digestion were very much improved.

CASE C.—A lad, aged seventeen, had been troubled for ten years with asthma. His parents had a country seat at Long Branch. Every time Master C. paid it a visit the attacks of asthma would occur—so much so that he generally spent his summers in the mountains to be free from the affection.

Several examinations of the nose under the suprarenal capsule and the application of cocaine failed to show any space between the sæptum and the turbinated body. It was with great difficulty a probe could be inserted in either nostril.

I placed the patient under the Warburg tincture and quinine at bedtime. Not even under these drugs, given for three weeks, could I obtain any breathing space in either nostril.

The operation on the left turbinate was without incident.

Two weeks after the operation I operated on the right nostril and removed a section of the inferior turbinate. I found the bone much thicker than usual and the sawing more difficult.

The operation was attended with very little hæmorrhage—in fact, not more than a couple of teaspoonfuls of blood.

I was called to the case in the evening on account of a hæmorrhage. Upon my arrival, I found that the patient had lost considerable blood, the blood passing down his pharynx and also oozing from the front of the nose. I removed my anterior plug and inserted a postnasal plug. This I kept in position for three days, when I removed it without any recurrence of the hæmorrhage.

The parts healed kindly. The patient has now a patency of the nose that has not closed, no matter how inclement the weather.

He has been free from asthma since the operation.

Here is a case that has been under the care of very excellent throat specialists, but dismissed after a course of spraying and one or two cauterizations; but the true condition—namely, the enlargement of the inferior turbinated bone—was never recognized.

I saw this case in my office two months after the operation and I could not tell by a close examination that the nose had been operated upon. Healthy mucous membrane had covered the cut parts and the nose presented a thoroughly healthy appearance.

His inferior turbinated bone was now of the normal size and did not encroach either upon the sæptum or the inferior meatus. The patient did not complain of any crust formations, and was leading an existence free from his past troubles.

CASE D.—A man, aged twenty-seven, came under my care for catarrh and discharge from both ears.

An examination of his lungs at this period showed consolidation at both apices. His sputum contained tubercle bacilli. I advised him to immediately leave the city and to go to some high inland district.

He chose a town in Kentucky, where he remained nine months. Upon his return the examination of the lungs was negative and the sputum free from any tubercle bacilli.

His catarrh and the discharge from the ear were about the same as when he left the city.

I now operated upon both turbinates, which were greatly hypertrophied.

He was under my care for about two weeks. I again dismissed my patient and sent him to the mountains in this State to stay till December.

Upon his return from the mountains his catarrh had ceased and the discharge from one ear entirely stopped; from the other it was intermittent, a slight discharge occurring about once or twice a week.

This patient has now been performing his usual duties in the city constantly for two years without any recurrence of his cough or of his catarrhal symptoms. He gained over thirty pounds in weight after the operation on the turbinates.

CASE E.—A railroad superintendent came under my care for catarrh and an inability to breathe through the nose.

This patient was a man over six feet tall, with a chest measurement of forty-six inches. An examination of the nose showed a marked deflected sæptum on the left side and hypertrophy of the inferior turbinated bone. Both were corrected by operation. His nose was in such an obstructed condition that I remarked to him at the time that if he had been a tenement house the board of health would not have permitted him to exist with such terrible plumbing as I found in his nose.

He had complained of deafness of the left ear, and had been treated by the Politzer bag without benefit. The deafness had lasted for some years.

My operations on the sæptum and turbinate in this case were performed more to establish nasal breathing than in hopes of restoring his hearing upon the affected side.

Three months after my last operation Mr. E. came into my office and told me that he could hear as well from his bad ear as from his perfect ear.

The hearing has remained perfect for over a year. This case, as I have before stated, was under treatment without benefit, but was cured by an operation on his nose.

I could multiply these cases indefinitely, but the histories of the four cases I have cited above are only duplicates of many others that have been benefited by the operation.

A thin, delicate patient with a stenosed nose, caused by large turbinates impinging upon the channel that was given to him through which to breathe, will quickly gain in weight when the cause of his being denied the normal amount of air the lung should have each and every second is removed.

The anæmic condition of the face changes to red and the patient feels the vigor that is derived from the best of tonics—air, and air in sufficiency.

Cauterization will not destroy the large mass of hypertrophy. The snare will remove only part of the offending obstruction and leave the framework for the growth to reassert itself, to be operated upon by another practitioner.

To gnaw the parts off with forceps is worthy of a barbarian, but not of a practitioner of the nineteenth century.

The saw, operated as I have before advised, leaves a smooth, healthy edge to heal and a result is obtained second to none in nasal surgery.

112 WEST FORTY-FIFTH STREET.

THE SURGERY OF THE SUPERIOR CERVICAL SYMPATHETIC GANGLION.*

By GEORGE F. SUKER, M. D.,
TOLEDO, OHIO.

MR. PRESIDENT, GENTLEMEN, AND LADIES OF THE NORTHWESTERN OHIO MEDICAL ASSOCIATION: It is my humble desire to invite your attention to a subject which of late has aroused quite an enthusiasm. It is the question of the excision of the superior cervical sympathetic ganglion for glaucoma, Basedow's disease, epilepsy, and, very recently indeed, for simple optic atrophy. Though comparatively few cases are on record, yet the results obtained are so strikingly beneficial, and, so far as we can at present discern, permanent, that we must regard this operation as a remarkable piece of scientific surgery. It opens a field which hitherto has been a *bête noire* in the practice of ophthalmic surgery. Indeed, it is a true surgical *post hoc* for a pathological *propter hoc* in a certain class of cases.

We are all very familiar with the gloomy prognosis that is in store for a patient afflicted with such grave diseases as glaucoma with its protean manifestations, simple optic atrophy, or even exophthalmic goître; for in the two former diseases blindness is too often the ultimate result in these cases, in spite of our untiring therapeutical or surgical measures, while in exophthalmic goître the number of successful cures as compared with the number of cases is rather in the minority. Up to the present time no form of treatment, either therapeutical or surgical, in this class of cases has offered such definite results, based upon thoroughly anatomico-pathological deductions, as the excision of this sympathetic ganglion system.

The excision of the three cervical sympathetic ganglia for epilepsy has been advanced, but the procedure is not rational in the writer's opinion. For no connection whatever can be traced between the ganglia and epilepsy *per se;* that is to say, no anatomical changes obtain in the ganglia in cases of epilepsy. The successes reported depend upon the "surgical-shock question," which accomplishes the good in so many cases of epilepsy. The results are only temporary; for any indiscriminate surgical operation in many cases of epilepsy achieves just as much good. We can only explain the action of the removal of the ganglion in epilepsy in that it transforms a permanent cerebral anæmia to a constant cerebral hyperæmia, thereby enhancing the nutrition of the cortical cells and removing from these same cells all toxic material. In short, the intracranial vasomotor arrangement suffers a complete change, as the three ganglia on each side must be excised. Like so many remedial measures for epilepsy, it is decidedly problematical. Not until we are capable of placing that protean disease, epilepsy, in the category of truly organic lesions can we have any grounds to assume that the excision of the ganglia is a logical procedure, or that the good that the exsection does produce depends upon the altered cerebral circulation, as above stated. Would that it could be proved as a logical measure!

The removal of the entire ganglionic system on both sides seems a more rational procedure for exophthalmic goître than for epilepsy. This is based upon the following anatomico-pathological data: The superior ganglion supplies the eye with sympathetic fibres. The middle and inferior ganglia furnish the vaso-dilator as well as the secretory nerves for the thyreoid gland. They also give the cardiac accelerator branches to the heart.

The cervical sympathetic cord is the nerve of propulsion for the eyeball—this is caused by the influence the sympathetic has upon Müller's muscle. In consequence, a removal of the ganglia would inhibit this ocular propulsion and cause the globe to recede.

However, the vaso-dilating influence of the sympathetic on the thyreoid gland is still *sub judice.* For an irritative condition causes a vaso-constricting rather than a vaso-dilating effect. Hence excision would produce a paralytic vaso-dilatation and only aggravate the already present congestive condition of the thyreoid.

On the other hand, the cardiac accelerator nerves given off by the inferior ganglion, when excised, produce a distinct cardiac inhibition; hence there arises a beneficial effect upon the pathologic conditions in exophthalmic goître.

The vaso-constrictive influence that these sympathetic ganglia have upon the cerebral circulation is decidedly evident. It is this point that has caused experimenters to advocate the excision of these ganglia for Basedow's disease and epilepsy, basing their hypothesis of the ætiology of these two diseases upon cerebral anæmia. We all know that the theory of cerebral anæmia in epilepsy must be taken *cum grano salis.*

The secretory nerves of the thyreoid being also supplied by the inferior ganglia, an excision of them would tend to materially check this, and thus tend to ameliorate the amount of secretion in the gland.

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* Read before the Northwestern Ohio Medical Association, Findlay, Ohio, December 8, 1899.

So, from the above-stated facts, we can readily comprehend the good that might arise in the extirpation of these ganglia for Basedow's disease, but not for epilepsy. In thirty-two cases of Basedow's disease in which these ganglia were removed recovery took place in 28.1 per cent., decided improvement in fifty per cent., failure in 12.5 per cent., and death in 9.3 per cent.; while in a like series of epilepsy the results obtained were decidedly questionable. Nevertheless, if all agents fail in Basedow's disease, sympathectomy should be advocated. The cervical ganglia on each side of the neck must be excised if any good is to be expected from this procedure in Basedow's disease or in epilepsy.

And now let us consider what influence the removal of these ganglia has in glaucoma and simple optic atrophy. Certain it is that the removal of the ganglia for glaucoma must be considered one of the greatest advancements in surgery of the present day. To Thomas Jonnesco, of Bucharest, belongs the credit for having advocated the removal in glaucoma. The first operation was done in September, 1897. Since then about twenty operations have been made, of which three were done in America. James Moores Ball, of St. Louis, did the first two and the writer can lay claim to the third (August 16, 1899). The removal of the superior cervical sympathetic ganglion is at the present the *sine qua non,* if ever such there can be, for glaucoma. Even in those cases where all other medicinal or surgical interventions have proved unsuccessful, the extirpation of the ganglion oftentimes is of undoubted benefit. It is far preferable to iridectomy or the evanescent effects of sclerotomy. It certainly is more rational than any medicinal treatment, and why? Because it directly removes something which has a definite and far-reaching physiological as well as pathological effect upon the eye as a whole, especially so if we consider glaucoma as being due to a central lesion of the brain—a most rational theory.

Even in such cases of glaucoma which were checked or benefited by other measures, a resection of the superior ganglion is productive of more good. This has been shown to be true beyond a shadow of a doubt in quite a number of cases. The proportion of failures in a series of cases is remarkably less—almost a minimum, so to speak—as compared with the other curative procedures, especially so in the acute irritative variety of glaucoma or in simple chronic glaucoma. However, it is of no avail in the hæmorrhagic form of glaucoma. For this latter form of glaucoma we still must search for a remedy—even the present ones give dismal results.

You can not possibly put your patient in a more pitiable condition than he already is by the removal of the ganglion, while you can and often do by any of the other vaunted therapeutical or surgical measures. For this reason alone, if for none other, is this question of excision worthy of our sincerest consideration. Again, the effect upon the eye in consequence of the removal of the ganglion is well-nigh instantaneous in nearly every case, while the good effects keep on developing a long time subsequently. Pain disappears as if removed by magic. Can as much be said for any other procedure? I think not.

Having made such broad statements, it behooves me to substantiate the same. Hitherto we could trace no relationship between glaucoma and the nervous system as a whole. Panas and Duvigneaud rightfully held that "if the nervous mechanism of intraocular secretion —or, to speak without hypothesis, the action of the nervous system upon intraocular tension—can become known, the pathology of glaucoma will be cleared up, the action of iridectomy will be explained, and perhaps a new and scientific basis for the treatment of glaucoma will be established." This theory can partly be justly answered by the relationship existing between the eye, the brain, and the superior cervical sympathetic ganglion.

We know that sympathetic fibres supply the eye with filaments for:

I. The vaso-constrictor fibres.

II. The unstriated muscle portion of Tenon's capsule and circumbulbar muscles.

III. The Müller's muscle.

IV. The iris, chorioid, retina, and sclera.

V. Part of the iris reflex irritability.

VI. The excito-secretory filaments.

All these sympathetic ramifications in the eye must, on descending either from the brain or spinal cord, pass through this superior sympathetic ganglion. In view of this fact, it is a modified nerve centre from which the above filaments have their origin.

It has been experimentally proved that any periodic or permanent irritation, either central or peripheral, will cause:

I. A constriction of the vascular system, hence increased blood pressure, thereby giving rise to extravasations and an evident increase in the aqueous humor.

II. Through the increase in aqueous humor it is probable that the excito-secretory fibres are stimulated.

III. A dilatation of the iris; thus it is forced and crowded into the iris angle, hence blocking the canal of Schlemm and spaces of Fontana.

IV. A contraction of the circumbulbar muscles, thus impeding the venous return by closing the efferent vessels, hence causing a practical venous engorgement and a dilatation of the veins.

V. In consequence of the above four conditions we have an increased intraocular secretion and the elements constituting the aqueous humor on the one side and an impeded outflow of the ocular secretions on the other, thus producing an increased intraocular tension; in other words, glaucoma.

Putting all these data together, we have as a result nothing else than glaucoma pure and simple, due to an irritation of the superior sympathetic ganglion, advisedly suggested.

If, on the other hand, we remove the ganglion, we get diametrically the opposite succession of symptoms, as above quoted, and thus achieve the good results in glaucoma.

In the writer's opinion, the irritation which gives rise to the nervous train of symptoms producing glaucoma is not a peripheral one but central—an encephalon and not a medullary-centre pathological process. Thus the sympathetic fibres act as a connecting link between the cause and effect—the cause being a central lesion, the effect being the glaucoma.

In this way is a logical explanation offered for the rationale of the operation.

Certain it is that the operation is more decidedly indicated in that variety of glaucoma in which the nervous element plays a prominent rôle. Jonnesco says that the results are more gratifying in the chronic irritative glaucoma, without prodromes, and chronic simple glaucoma than in acute glaucoma, chronic irritative glaucoma with acute attacks, and chronic glaucoma subsequent to a glaucoma prodromalis. This for the reason that in the latter cases we have an inflammation which can not be influenced by the resection of the sympathetic ganglion.

An iridectomy yields good results in the acute and chronic irritative glaucoma with prodromes, but is of less value in chronic simple glaucoma, just where a resection is indicated.

As previously stated, resection of this ganglion is indicated in all forms of glaucoma excepting the hæmorrhagic variety. Therefore, if you operate only to relieve pain, remove the ganglion on the same side as the painful eye. If one eye is painful and vision *nil*, the other not painful and there is some vision, do a bilateral excision.

The effects of the operation are as follows:

I. Cessation of pain.

II. Contraction of pupil.

III. Increase in vision in those cases where the optic papilla is not entirely atrophied.

IV. Reduction in the tension.

These four facts can be reasonably expected in nearly every case. Statistics substantiate these points.

These were the results obtained in a case operated upon by the writer on August 16, 1899. In this case the operation was done for the relief of pain and to obtain a reduction in tension (*vide Ophthalmic Record*, October, 1899).

After having carefully weighed the *pros* and *cons* of this surgical procedure, the writer came to the conclusion that it might yield some results when applied to simple optic atrophy. We know that blindness is the usual finale of simple optic atrophy, and the writer is pleased to state that his hypothesis was verified as correct by a case operated upon November 23, 1899. This is the first case in the United States in which both superior cervical sympathetic ganglia were removed for simple optic atrophy. Previous to the operation the patient had only faint form perception at two feet, now he can distinctly recognize the hand at six feet. His light perception is more acute and his field of vision considerably larger. This is the result in the case which had been in the above condition for nearly two years. Whether or not the benefit obtained is temporary or permanent is a point as yet too early to definitely determine. Judging from the permanent results in glaucoma, I reasonably expect the same in this case of optic atrophy. Time and repetition of several cases can only decide whether the resection of this ganglion for simple atrophy of the optic nerve is a scientific entity, or is to be discarded as "having been tried and was found wanting."

In conclusion, the writer wishes to sum up his points by saying that in the resection of either one or both superior cervical sympathetic ganglia for glaucoma, simple optic atrophy, Basedow's disease, and, perchance, epilepsy, we have a definite surgical intervention yielding positive results, so far as we now know, in selected cases, in which heretofore we were at a loss what to do in like cases, for nearly two years.

914 JEFFERSON STREET.

AN
OPERATION FOR DIVERGENT STRABISMUS.

BY DAVID WEBSTER, M. D.

RECENTLY, while looking over an old Manhattan Eye and Ear Hospital case book, a conspicuous heading caught my eye. It was Dr. Webster's Operation for Divergent Strabismus, or words to that effect. On reading the description of the operation I found that it was identical in all its essentials with an operation which has been performed a number of times at that hospital in more recent years. I shall report the case, and, incidentally, describe the operation.

On April 29, 1890, Catherine E. M., aged twenty-eight, came to my clinic at the hospital for the purpose of having her eyes straightened. Her history was as follows: When two weeks old she "caught cold in her eyes," and was unable to open them for nine months. When at last she did open them it was noticed that they were "turned in." When she was twelve years of age a well-known ophthalmologist undertook to straighten her eyes. He operated twice on the left and once on the right eye, and the result was that the left eye, instead of being turned in, as it was before, was now turned out. The patient, of course, "fixed" with her right eye, that eye having the better vision.

Right: Vision = $\frac{20}{100}$, but made $\frac{20}{30}$ with + 4 D. sph., combined with + 1.5 D. cyl. axis, 35°.

Left: Vision = $\frac{20}{200}$, but made $\frac{20}{70}$ with + 4 D. sph., combined with + 1.25 D. cyl. axis, 135°.

Operation.—The patient was put under ether and, after due aseptic precautions, the tendon of the left externus was divided through a horizontal slit in the conjunctiva. Then the internus was severed from its scleral insertion, as in the ordinary operation for convergent squint. Next, the conjunctiva about the stump of the severed internus was trimmed away, so as not to be an obstacle to the healing of the internus to the eyeball after it should be advanced.

The retracted internus was then seized with fixation forceps, drawn into view, and a portion of it excised, corresponding to the amount of effect it was desired to accomplish. The free end of the muscle was then brought into view by means of a "Stevens's crochet hook," and then seized and held with fixation forceps while three advancing sutures were inserted—the needle beginning a good distance back, going through the muscle, through the stump of the tendon, including the superficial layers of the sclera, and coming out through the conjunctiva at the corneal margin—all three sutures being horizontally placed, one in the centre, one at the upper, and one at the lower margin of the muscle. The central suture was tied first, the eye being turned inward by an assistant with forceps, and the effect being noted. Then the upper and lower sutures were tied, and were drawn as tight as seemed necessary to secure the effect desired—*i. e.*, a slight convergence. The operation was completed by doing a tenotomy of the externus of the fellow eye.

The notes made during convalescence were as follows:

April 30th.—Bandage removed; slight catarrhal secretion.

31st.—Eyes cleansed and a shade for both eyes. There is slight convergence.

May 1st.—Slight chemosis of left. Eyelids of both eyes are slightly swollen, the left the more so. Cleansing, iced cloths, and atropine.

4th.—Almost all the œdema gone, a little remaining in left. Conjunctiva ecchymotic, especially in the left.

5th.—Part of stitches removed to-day.

9th.—Balance of stitches removed. Eyes almost parallel. Patient discharged.

THE BENEFITS OF BALNEOTHERAPY IN THE TREATMENT OF CHRONIC RHEUMATISM AND GOUT.*

By HENRY H. SCHROEDER, M. D.

It is quite safe to assert that the medicinal treatment of chronic rheumatism and gout has in no way improved during the last two or three decades. As a matter of fact, when we are compelled by the force of circumstances to resort to drugs, we administer the same old stomach-racking, digestion-disturbing remedies which our forefathers inflicted upon their unfortunate patients, and most of us are unable to write the venerable and aged formulæ without feeling more or less pricking of the conscience.

But therapeutics has not remained impassive by any means, for hydropathic measures and the hot-air chamber have forced their way to the front as most valuable agents for the relief and cure of the two disorders under consideration, and the results have been a source of more or less gratification to most of us. Before going further the writer wishes to explain what, in his opinion, constitute the relative merits of hydrotherapy and balneotherapy. That there is a difference in favor of the latter, no one with actual experience can deny, and to uphold this view it is not necessary to believe in some mysterious and miraculous virtue of a particular spa, or to pay attention to the dribble which appears in the prospectuses of many of the watering places. One may have faith that no treatment in a hydropathic institution can equal that obtained at a well-conducted and well-selected mineral spring, and still believe that common salt is common salt, whether found on the dinner table or as the natural ingredient of a spring water, and that heat is heat, whether derived from the combustion of coal or from some chemical action in the bowels of the earth. We can throw aside all the bombastic phrases with which quackery has surrounded the subject and find underlying principles of common sense. The value of a change of climate, of dry, bracing, and stimulating air, of plenty of sunshine and exercise in the open air, can not be overestimated as adjuncts to the treatment of chronic rheumatism and gout. Added to these is the improved morale attributable to the complete change of environment, the diversified interests and cheerful scenes always found in such places. Contrast all this with the dull atmosphere and depressing moral influence of the average hydropathic institute with its sick and grumbling inmates.

The choice of a spa is most important, as the possession of the afore-mentioned desirable qualifications is of more consequence than that of an elaborate analysis of the water, and, yet, we shall do well, other things being equal, to select a spring with a high degree of mineralization. The writer's experience was gained at a resort which so well combines every requisite that he can not do better than give a brief description of it as an illustration of what a model establishment should be. This place is situated at an altitude of five thousand six hundred feet in a valley in the midst of the foothills of the Rockies. The dryness of the atmosphere in that region is well known, the annual rainfall, including snow, being only fifteen inches. The surrounding mountains give protection from high winds, but as the valley widens at this point the precipitous hills do not deprive it of an abundance of sunshine. The eyes never weary of the variegated scenery, comprising snow-capped mountains, gorgeous foothills, magnificent cañons, and a ceaseless flowing river. The mineral springs are so numerous that only a small part of the water is utilized. The natural temperature of the water is 127° F., and the degree of mineralization is very high, there being about twelve hundred and fifty grains to the gallon, most of which is sodium chloride. In addition to the springs there are vapor caves in the neighboring cliffs filled with sulphurous vapor which maintains a temperature of 112° F. The hotel is a large and handsome structure fitted with every modern comfort and convenience. The bathing accommodations include a three-story stone bath house containing Roman baths, porcelain tubs, cabinet vapor baths, douches, and a medical gymnasium for Swedish movements. Adjoining the bath house is an immense bathing pool six hundred feet long, filled with mineral water which runs in in sufficient volume to maintain a temperature of about 85° F. At the mouth of the vapor caves a building has been fitted up with dressing rooms, lounging room, douches, showers, and massage rooms.

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* Read before the Society of the Alumni of the City (Charity) Hospital, November 8, 1899.

Concerning the action of hot and mineral waters, Pflüger has written that if a mammal is placed in a bath which is three or more degrees higher than its own temperature, the excretion of carbonic-acid gas and the consumption of oxygen are increased, owing to the stimulation of metabolism; while, for the same reason, urea is also excreted in larger quantities (Schleich). It was also observed that the increase of urea continued for several days after a series of such baths. It is now well understood that the foregoing effects are produced by the stimulation of the cutaneous sensory nerves, which exercise an important influence on the most complicated processes of the organism by means of the reflex actions transmitted through the central nervous system. Anything which tends, then, to intensify the stimulation of the peripheral nerves will favor greater activity of the different vital functions. That saline ingredients act as additional excitants may easily be demonstrated by noting the greater redness of the skin after a hot brine bath as compared with its appearance after a plain hot bath. Paalzow's experiments prove that a strong stimulation of the skin produces a reflex conversion of tissue, indicated by an increased consumption of oxygen and excretion of carbonic acid. Brunton recommends the addition of common salt to the water to increase the stimulation of the skin and the amount of after-reaction. Liebermeister, Rembold, Paalzow, and Leichtenstern have been convinced by their experiments that the stimulus of salts and gases usually employed in balneotherapy is too weak to increase reflexly the conversion of tissue and the production of carbonic acid. "There is no perceptible influence on the beats of the heart," says Leichtenstern, "and no effect worth mentioning on the distribution of the blood, from the use of those waters containing a low percentage of salines. On the other hand, waters of a low temperature, but containing salts and gases in quantity, may by their stimulation of the skin act as epispastics and occasion a slight expansion of the vessels of the periphery." In the light of the investigations of these and of other men we may not unreasonably look for the best results, other conditions being equal, from treatment at those springs the water of which has a temperature considerably over a hundred degrees and a very high percentage of mineral ingredients. The regular immersion in such water, in conjunction with vapor baths, by stimulation of the cutaneous nerves, influences the finer processes of metabolism, as well as the secretions, distribution of the blood, movement of the lymph, etc. It is during these changes that pathological products, exudations, hyperplasias, new formations, and toxic agents are drawn into solution and eliminated from the system.

In the use of such powerful agents caution is always advisable in selecting cases for treatment. Care should especially be observed with those patients suffering from organic disease of the kidneys complicated with degenerative changes in the arteries or hypertrophy of the left ventricle, valvular changes of the heart complicated by poor compensation or diseased blood-vessels, epilepsy, acute inflammatory diseases, recent hemiplegias, menorrhagia, and metrorrhagia. Patients with valvular lesions, with simple hypertrophy and good compensation, unaccompanied by renal or vascular complications, suffer no inconvenience whatever.

Chronic rheumatism has usually progressed so far in patients who seek help at bathing resorts that structural changes attended by proliferation and thickening of the synovial and periarticular tissues have taken place as a consequence of the chronic inflammatory irritation. The membranous elements of the articulations in many of the cases have become rigid and perhaps coalesced with the soft parts lying over them. In old and obstinate cases the disturbances of nutrition may have extended to the bones and soft tissues surrounding the joints. Motion is interfered with and the adhesions have occasionally given rise to complete ankylosis, which has persisted in spite of all ordinary treatment. As a general rule, the disease drags on for months and years, terminating in even the most satisfactory cases in a very imperfect recovery. When the patient is comparatively young and the disease has not run too long a course, proper treatment by means of appropriate mineral baths, if persisted in for a sufficient length of time, will be followed by gratifying results. It is important to remember that in this disease the patient is apt to be in a "run-down" condition, and that in such instances drastic measures can not be too strongly condemned. The natural springs capable of helping these patients are always noted for their high temperature, and Senator is convinced of the greater value of waters rich in mineral matters, especially the concentrated brine baths, for stimulating absorption. Massage and douches should usually be added to the treatment of this disease. In the advanced and obstinate cases local douches of hot mineral water combined with massage are often efficacious, and these procedures are strongly advised by Rademaker, of Aix-la-Chapelle, the general bath being used when not contraindicated.

In gout the indications to be met are the correction and prevention of the necrotic processes by the establishment of a more complete metabolism and by the elimination of uric acid, as well as the absorption of deposits about the joints. Although there is considerable dispute about the rôle which uric acid plays in this disease, all agree that the measures that favor its elimination and prevent its formation are helpful in the treatment of the disorder. Treatment of the complaint by means of mineral waters is most effective and suitable, for at the bathing resort the habits are regulated, a proper diet can be enforced, the patient willingly submits to irksome treatment, lives in a pure and invigorating atmosphere, and enjoys abundant exercise. There is a marked unanimity of opinion in the literature of the subject as to the results obtained at a suitable resort, and especially at hot sulphur springs. Senator believes that sulphurous waters containing sodium chloride and alkaline and earthy sulphates tend to remove the various disorders which stand in a more or less close degree of causal relationship to gout, either as precedents or concomitants, such as irregularities of digestion, gastric and intestinal catarrh, tendency to acidity, constipation, portal congestion, disorders in the urinary secretions, etc. He is also of opinion that such waters exert a more immediate influence upon the gouty diathesis and uric-acid dyscrasia, and that permanent benefit is derived from their influence on the exciting disturbances.

A detailed account of the methods in vogue at the baths would be of little interest to us as general practitioners, nor should we attempt to dictate the form of treatment to be pursued when sending any one to a place of this kind. It is wiser to select a resort at which there is a medical man on whom we may rely, and to submit the case to him with a good history of the ailment. By acting upon this plan we do not interfere with the functions of the resident physician, who ought to be the best judge as to the measures to be adopted, and we avoid causing any feeling of indifference on his part toward our patient. It is well to warn the sufferer that he will be liable to experience an increase of pain in the joints while taking the baths. This pain soon ceases, as a rule, though in some cases it persists during the entire course. When it does come to an end, however, it leaves the patients in much better condition than before, and they will probably enjoy immunity from the ailment for some time to come, even if they are not absolutely cured.

37 West Eighty-second Street.

The St. Louis Medical Society.—At the last regular meeting, on Saturday evening, the 17th inst., the programme included the following papers: Fibroma of the Ovary, by Dr. L. H. Laidley; The Neural Features and Neurotherapy of Typhoid, by Dr. C. H. Hughes, and A Case of Hodgkin's Disease, by Dr. J. W. Smith.

THE TREATMENT OF IRITIS.

FOR THE GENERAL PRACTITIONER.

By NORBURNE B. JENKINS, M. D.,
CHICAGO.

Iritis, or inflammation of the iris, is one of the most deceptive and destructive of eye diseases. It is usually caused by syphilis, rheumatism, or some disease or injury of the cornea. In most cases there is severe pain in the temple, forehead, or cheek, as well as in the eyeball, and light increases it. There is more or less redness of the white of the eye and usually an increased secretion of tears, and there is a noticeably small pupil. Iritis is frequently mistaken for conjunctivitis, and is often entirely overlooked when it is associated with corneal lesions.

Iritis may be diagnosticated by putting into the eye a few drops of a two-per-cent. solution of cocaine. The eyes are kept closed for about half an hour. If there is iritis, the pupil will be dilated but little, not at all, or irregularly. There is no iritis if the pupil is dilated and perfectly round. In iritis there are slight discoloration of the iris, injection of the deep vessels of the white of the eye just back of the edge of the cornea, irresponsiveness of the pupil to light, and usually the eyeball gets harder to the touch.

Sometimes in severe iritis the pupil may be found somewhat dilated, a misleading condition; yet, even here the cocaine fails to dilate fully.

The results to be feared in iritis are: 1. The complete attachment of the pupillary margin of the iris to the lens capsule, thus stopping the flow of the aqueous humor through the pupil. 2. An increase of tension of the eyeball. This pressure is due to the retention of fluids in the eye, a condition greatly interfering with its nutrition. Either or both may in a few hours destroy an eye.

The treatment is simple. When caused by constitutional diseases, treat these. Hot foot baths, salts, and small doses of calomel are of service in nearly all cases. The local treatment is darkness, atropine, hot applications, and puncture of the cornea. One drop of a two-per-cent. solution of atropine is put in the eye, not to exceed three times a day. Some cases require but one drop once or twice a week. If but one eye is affected, there may be put in the other eye daily one drop of a 1-to-5,000 solution of atropine. The consensual influence of the sound eye over the diseased one is thus lessened and the pupil of the diseased eye can be kept dilated with less atropine. The less the atropine used to keep the pupil dilated, the greater the likelihood of saving the eye, especially in the aged.

Keep the pupil dilated to its utmost. If one drop of a two-per-cent. solution three times a day does not keep the pupil dilated to its utmost, puncture the cornea, and thus relieve the intraocular pressure. If necessary, this operation may be performed on the same eye several times. When a large or irregular opening is made in the cornea, the aqueous humor flows out, leaving the cornea collapsed. The cornea, after a few minutes, resumes its shape. Increased secretion of aqueous humor always follows its withdrawal.

Often, owing to a recent adhesion of the iris to the lens capsule, the pupil dilates but little or irregularly with a two-per-cent. solution of atropine. In this event a quantity of cocaine equal to the atropine may be added to the solution. This is put in the eye several times during the day until the pupil dilates. Failing in this, if there is increased tension or excessive pain, puncture the cornea.

Puncture of the cornea, a simple operation, is probably indicated a hundred times where it is performed once. Often the pupil can not be dilated with atropine. If the cornea is punctured, the aqueous humor flows out, the tension is reduced, and afterward, if atropine is used, the pupil dilates to its utmost. If atropine is persistently used and the pupil does not dilate, the eye will usually be destroyed. This applies especially to the aged. If puncture and atropine do not meet with immediate results, removal of a piece of the iris is probably indicated.

For congestion and pain use a 1-to-50,000 solution of corrosive sublimate as hot as can be borne. This should be applied to the eye on a large pad of cotton for half an hour, or longer, several times a day.

If the iritis is acute and in one or both eyes, no ray of light should enter either eye except during examinations. These should be made in a dark room with as little light as possible. The eyes are to be protected from light to lessen the quantity of atropine. This can be accomplished with bandages or a dark room. The latter is confining and often injurious. The eyes are padded with wads of soft cotton wool. These are kept in place with strips of adhesive plaster. Cataract masks or shields, or the ordinary bandages, are then placed over the eyes to completely blind the patient. In the absence of the physician, the blinds are to be removed only for the hot-water applications, and these are made in a darkened room. Take care that the bandages are sufficiently loose.

In chronic iritis dark glasses may be worn, but these are to be selected by an oculist. Those in the shops, almost without exception, have many defects, and are injurious to the eyes.

Therapeutical Notes.

Balsamic Pills.—*Riforma medica* for January 16th ascribes these pills to Delesquelle:

℞ Terpine	¾ grain;
Sodium benzoate	1½ "
Vegetable tar	q. s.

M. To make one pill. Ten may be given daily.

Anemonin for Cough.—Anemonin is the active principle of several species of anemone, and has, according to the *Journal de médecine de Paris* for September 24, 1899, been isolated from the wood anemone. It has been recommended as an anticatarrhal, antibronchitic, and antitussic. It is also emmenagogue. Its use has, however, been very restricted, probably owing to the dangers it presents when used in a large dose and to the precautions which its use necessitates. Anemonin consists of small, acicular, whitish-gray, inodorous crystals, slightly soluble in water, more so in ether, and especially in alcohol and chloroform. The dose is from three quarters of a grain to a grain and a half at most in the twenty-four hours.

For Diabetic Ulcers of the Pharynx.—Dr. W. Freudenthal (*Annals of Otology, Rhinology, and Laryngology*, November, 1899) anæsthetizes the ulcer with cocaine and then injects about ten grains of the following preparation:

℞ Menthol	from 2 to 10 parts;
Oil of sweet almonds	30 "
Yolk of egg	25 "
Orthoform	12½ "
Distilled water to	100 "

M. et ft. emulsio. S.: Shake well before use.

[This application would doubtless be serviceable in all ulcers of the pharynx.]

The Treatment of Cystitis.—Dr. Burnside Foster (*St. Paul Medical Journal*, February) says that when the urine is already alkaline, either ammoniacal from decomposition or because of the presence in it of a fixed alkali, the administration of alkalies will make matters worse. When, however, the urine is highly acid, alkalies are indicated, and the most useful is liquor potassæ. It may be administered well diluted and mixed with a little mucilage.

A convenient formula is:

℞ Liquor potassæ	2 drachms;
Mucilage of acacia	1 ounce;
Tincture of hyoscyamus	to 4 ounces.

M. One teaspoonful to be taken every four hours.

If the urine is already alkaline, and particularly if it is ammoniacal, we should prescribe urinary antiseptics, as salol, boric acid, or benzoate of sodium. Perhaps the most reliable urinary antiseptic at our disposal is urotropin, and in cases of bacteriuria and in some [illegible] of ammoniacal decomposition of the urine its acti[illegible] rapid and certain.

The Treatment of Hæmorrhoids.—Dr. R. Rounne (*Presse médicale*, December 2, 1899) says that when excoriations form upon the hæmorrhoids, or when small losses of blood occur, he prescribes the following suppositories:

℞ Chrysarobin	1⅕ grain;
Iodoform	$\frac{30}{100}$ "
Extract of belladonna	$\frac{15}{100}$ "
Cacao butter	30 grains.

M. For one suppository. Two or three suppositories may be used daily.

Later the suppositories may be replaced by the following ointment:

℞ Chrysarobin	12 grains;
Iodoform	4½ "
Extract of belladonna	9 "
Vaseline	150 "

M. For local application several times a day.

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THE DETERMINATION OF SEX AT WILL.

The question of the possibility of settling in advance, that is, at the time of begetting a child, what the child's sex shall be, and the further question of the means to be adopted to achieve the purpose, have repeatedly been made the subject of earnest study, and numerous theories, more or less fanciful, have found believers. We confess that we have heretofore looked upon all attempts to get to the bottom of the matter as unphilosophical and profitless, but Dr. J. Griffith Davis's article, which we publish in this number of the *Journal*, goes far to incline us to the belief that she has found the solution of the mystery, so far, at least, as concerns the two questions mentioned at the beginning of this paragraph. We need not follow Dr. Davis in her speculations about vibration; if the sex of a child can be determined by its parents by means easily within their control, they need not bother their heads much about the *modus operandi*.

As we understand her, Dr. Davis's observations seem to her to establish a rule governing the determination of sex which may be briefly formulated as follows: In every monthly cycle of menstrual life there is a period of susceptibility to impregnation, divided into three terms, viz., from three days previous to menstruation to eight days after the cessation of the flow, in which only girls are produced; from ten to fifteen days after menstruation, in which only boys are produced; and the intervening ninth day, which may be called neutral ground, in which the result is uncertain —twins of different sexes may be the outcome, or, if only one child is the issue, it may be either a boy or a girl, but, if it is a boy, it is apt to be defective in masculine characteristics, and, if it is a girl, it is prone to be of the hard, angular type.

This intermediate period, which we have termed the neutral ground, seems to us to constitute the strong point of Dr. Davis's rule. In it "she stoops to conquer," so to speak. We do not recall any other theory that admitted a condition of uncertainty; consequently, none of the various other doctrines accounted satisfactorily for twins of opposite sexes. Practically, too, it is the most important point, the feature susceptible of being turned to the best practical account. The world does not want feminine men or masculine women. The "tomboy" is generally an interesting creature, and she is apt to be lovable, as well; she is boyish only in her physical nature, but sweet and gentle in the depths of her being. Deliver us, though, from Thackeray's "old campaigner"; deliver us also from the male milksop, legally entitled to wear trousers, but utterly incapable of bearing arms. If Dr. Davis's theory is sound, these freaks may be eliminated from the population of the future, and with them probably the whole brood of "degenerates." We hope the theory will be confirmed.

SOME EARLY SYMPTOMS OF THORACIC ANEURYSM.

The fact that thoracic aneurysm is commonly well advanced before the physical signs are sufficiently definite to permit of its diagnosis renders especially valuable any subjective symptoms that may be sufficiently constant to suggest its presence in the early stage. Dr. A. Symons Eccles, in the *West London Medical Journal* for January, describes certain such symptoms as having occurred under his own observation in four cases of thoracic aneurysm at a stage prior to the development of the indubitable physical signs thereof. The first case in which his attention was directed to these symptoms was that of a medical friend who had himself diagnosticated his disease, the diagnosis being subsequently confirmed by Dr. Gee, Dr. Lauder Brunton, Dr. Havilland Hall, and the author.

The patient, on the discovery of the nature of his complaint, began mentally to retrace his physical history for some time past. Among the symptoms which presented themselves to his memory were excruciating pain in the upper part of the chest and the right shoulder, and the fact that for some months he had shrunk from driving in a hansom, because, whenever he did so, a "most indescribable sense of disaster, or fear of impending dissolution, came on shortly after driving for a few yards." The sensation was so acute that he used to press his feet against the ledge on which the doors closed, and so great was his agitation that heart hurry would come on, while the appearance of pallor or "funk" on his countenance was plainly visible in the mirror. Similar attacks of dread also occurred, with "very vivid feelings of some almost uncontrollable impulse to stop the proceedings" whenever he went to the barber so soon as he laid his head back on the rest attached to the chair. Reference has already been made to the severe pain in the right chest and shoulder occurring at the time of recognition of the disease; but the patient further recalled a severe cervico-brachial neuralgia on the right side, increasing when the recumbent attitude was assumed, as having existed for some two or three years previously.

The careful observation of these phenomena naturally suggested to Dr. Eccles a search for premonitory symptoms in subsequent cases coming under his notice. The next patient sought advice for "neuralgia" of the right arm associated with extreme "nervousness" when traveling to and from the city. On more than one occasion he felt so distressed that "he was compelled to quit the train and recover self-control on the platform of an intermediate station before resuming his journey." This patient also became sick and faint while shaving himself. Another curious feature was his inability to wear a heavy overcoat, even in cold weather, because of its causing a burning pain over the seventh cervical vertebra, which was found to be distinctly tender on pressure.

The next cases occurred in two brothers; in whom, however, the disease was so well advanced at the time of their consulting Dr. Eccles that there could be no mistake as to the diagnosis. The first patient volunteered the statement that he first noticed a burning pain in the back between the shoulders a twelvemonth or more before he came under the author's observation. The pain came on gradually after a hard day's riding or any undue exertion, but did not trouble him so much as attacks of a curious character resembling giddiness. This feeling of impending vertigo had first occurred while he was riding a pulling horse, when the patient noticed that on bending his body backward in the saddle to check the pace he thought he should fall from his horse. Lying back in a lounging chair induced the same sensation.

The second brother consulted Dr. Eccles some months after the death of the first, and he also complained of a slight pain in the back of the neck and shoulders, as he threw back his head when handling his rod while fishing. A feeling of faintness also occurred on bending the head back in shaving, or for any other purpose.

Dr. Eccles points out, in summing up, that all four patients described a sensation of dread, faintness, or giddiness, when the head was thrown back, which he attributes to the increased tension exercised by that action on the thoracic vessels. In three of the four cases this symptom was noticed by the patients long before they were aware of anything amiss with the heart or great vessels, and in two cases before careful physical investigation by well-known physicians revealed any signs of vascular degeneration. In two of the four cases, moreover, occurred a sense of impending disaster, horror, or dread when traveling. Neuralgia of the right upper limb occurred in two of the patients long before any other pressure symptoms manifested themselves. This neuralgia Dr. Eccles considers evidently due to pressure by the aneurysm on the roots of the nerves affected. Finally, a burning pain in the back in two cases, and slight pain in the back and shoulders in the third, were felt after exertion, and in one case even as a consequence of the slight pressure exercised by an overcoat.

"The coexistence," says Dr. Eccles, in conclusion, "of pain in the arm, in the back between the shoulders or just above them after exertion, with dread, faintness, or vertigo, under circumstances of fatigue, vibration, or placing the head in a bent-back position, is a state of affairs which should make us suspicious of the condition of the heart and great vessels, if these points here brought out in these four cases of aneurysm may be regarded as of sufficient import to be recorded."

The suggestion thus conveyed by the careful observations of the author will no doubt stimulate medical men to a thorough investigation as to the constancy or otherwise of these symptoms, inconclusive in themselves though they be, in the early stages of thoracic aneurysm. The fact that in the two cases in which the disease was early diagnosticated by Dr. Eccles its arrest was ultimately secured, points clearly to the great value of any well-established premonitory symptoms which might lead to proper treatment before the disease is sufficiently developed to make its recognition by physical signs a certainty.

KILL THE RATS!

We hope that the bubonic plague will not find a lodgment in this country, and feel sure that it will not if the officers of the Marine-Hospital Service can prevent it. There certainly is no imminent danger of its doing so, but that is no reason for being blind to or denying its possibility. The maxim "In time of peace prepare for war" is as applicable to sanitary as to military operations, and when a pestilence rages in one part of the globe the people of the rest of the world should put themselves in a state of defense against it by every means that an intelligent foresight can provide. We have an immense coast line and other borders, and it is pretty certain that all immigrants to the United States do not come through ports of entry. In the case of the Chinese this is somewhat notorious. Some infected Oriental may thus find entrance to the country and transmit the disease to others of his race. Were this all, the pest might be stamped out by isolation and quarantine; but, where human beings contract it, the ubiquitous rats and mice also become affected with it, and they can neither be isolated nor quarantined. They tend to spread the pestilence further and further.

Now, though human beings must not be killed but may be quarantined, rats, which can not be quarantined, may and ought to be killed. If we had the bubonic plague with us, a war would immediately be waged against the rodents. Once they were infected, however, they might disseminate the pestilence faster than they could be destroyed. Why wait until the danger is present before beginning the destruction of these vermin? The present period of peace is the best time to inaugurate a warfare against them. It may be done, we think, without causing public alarm, and there are no superstitions to overcome here as in India.

The extermination of rats is not quite so easy a matter as that of mice. Any simple trap, persistently used, will keep a house free from mice; but, when rats infest a neighborhood, they must be trapped in such a way that their fate does not become known to their fellows, or the catching process will be a very slow one. Poison is sometimes effective, but will occasionally kill poultry and other animals, and, moreover, the stench from decomposing bodies in inaccessible places is frequently intolerable. Surely it is incumbent upon boards of health to study the subject of the extermination of rats and to promulgate measures for the destruction of these rodents, thus placing the country in a sound state of defense against the invasion of the dreaded foe.

THE ALTRUISTIC GYNÆCOLOGIST.

A POINT in the economics of medical practice that we do not remember to have seen noticed before was brought forward by Dr. W. O. Henry, of Omaha, in a communication entitled The Relations of the Obstetrician and the Gynæcologist, presented before the Nebraska State Medical Society last May. The business of the obstetrician, says Dr. Henry, is to conduct women through the process of parturition and the perils of the puerperium in such a manner as to save them from the need of the gynæcologist's services, while it is the rôle of the gynæcologist to restore their capability of childbearing, and so replenish the obstetrician's field. But, is not this altruism of the boomerang sort? Is not the gynæcologist really planting in order that he may reap anew?

TYPHOID FEVER CAUSED BY CELERY.

In our issue for February 10th we referred to celery and other vegetables as a possible cause for tetanus. The *Sanitarian* for February comments editorially on a report on typhoid fever in the insane asylum at Northampton, Massachusetts, published by the State board of health in the Springfield *Republican* for December 14, 1899. The epidemic, following upon a period of ten years with only four cases, began with fifteen cases making their appearance in five days. In the following five days ten and the next five days fourteen fresh cases made their appearance. A careful investigation traced the cause to celery from the farm, which was grown upon beds in which sewage was spread, the stalks being banked with the earth. The discontinuance of the use of the celery was followed by an immediate diminution in the number of cases, and finally by the cessation of the epidemic. It will readily be seen that the use of sewage as manure is a real danger when vegetables are grown that are to be eaten without cooking.

THE VERMIFORM APPENDIX AND THE BICYCLE.

N. Roe Bradner, A. M., M. D., is the editor of a weekly newspaper entitled the *Northeast Philadelphian*. He has sent us a clipping from his issue for December 30, 1899, in which, over his own signature, he gives it as his opinion that nine out of every ten cases of appendicular inflammation are due to the use of the bicycle. If he is right, the disease is ten times as prevalent as it was before the bicycle came into general use, which we think he would find it hard to prove.

A FRENCH *INDEX MEDICUS*.

It is not much to our credit that we have allowed the *Index Medicus* to die of inanition. The medical profession in France has undertaken to revive it, beginning its entries with the time when they were discontinued. The *Bibliographica medica*, edited by Dr. Marcel Baudouin, began its career with the month of January. It is avowedly modeled on the *Index Medicus*, and we do not doubt that it will show equal excellence. We bespeak for it the support of the profession throughout the world.

WOMEN NURSES FOR THE ARMY.

We have already signified our approval of the surgeon-general's plan of providing the army with women nurses, and we now wish to express our decided approbation of Mr. Hull's bill to carry that plan into effect. Elsewhere in this issue we publish the full text of Congressman Hull's bill.

THE ANTIDIPHTHERITIC SERUM IN THE TREATMENT OF PNEUMONIA.

The enlarging field of the antitoxines is a very interesting feature of the serum treatment. We have noted several examples of it. Not the least remarkable it seems to us, is the employment of diphtheria antitoxine in the treatment of croupous pneumonia. Dr. Bessone (*Gazzetta medica di Torino*, 1898, No. 47; *Centralblatt für innere Medicin*, February 3, 1900) finds that it hastens the crisis and makes severe complications less frequent, but he does not think it a specific.

HYPOSPADIAS AND THE PROCREATIVE FACULTY.

The device of certain semi-civilized peoples of establishing an artificial hypospadias for the purpose of enabling the subject to copulate without the risk of impregnating his mate seems vain in view of Professor Brouardel's narration (*Lyon médical*, January 14th) of a case in which a hypospadiac, brought up as a girl, impregnated one of his fellow servants. It is interesting to note that the child that was born had hypospadias, a fact which, in our Lyons contemporary's opinion, shuts out the notion of "collaboration."

AN INSUFFICIENCY OF CORONERS' PHYSICIANS.

Dr. Hamilton Williams, coroner's physician, lately gave an address before the Society of Medical Jurisprudence in which he maintained (what we have already insisted upon) that the coroners' physicians of New York were miserably underpaid. He contended also that they were insufficient in number, only four for the whole borough of Manhattan, whereas there should be one for every two hundred thousand inhabitants. We think Dr. Williams is quite right.

THE METCHNIKOFF FOUNTAIN OF PERPETUAL YOUTH.

With that genius for blundering, or something worse, that distinguishes many of the newspapers of the present day, some of them not long ago announced that Dr. Metchnikoff had discovered a serum capable of warding off the approaches of senility. It turns out that he has only suggested (*Archives Podvogeoski*, November, 1899; *Indépendance médicale*, January 17th) that possibly some serum may yet be discovered that will enable the "noble" cells of the organism to resist the aggression of the phagocytes.

PROFESSIONAL SECRECY AND "CHRISTIAN SCIENCE."

We have no fear that anybody will accuse us of partiality for the goddess of "Christian Science," but we have no hesitation in indorsing "M. D.'s" protest (*Boston Medical and Surgical Journal*, December 28, 1899) against a physician's public statements concerning Mrs. Eddy's ailments. Everybody is entitled to secrecy on the part of his or her physician.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported for the two weeks ending February 17, 1900:

DISEASES.	Week ending Feb. 10.		Week ending Feb. 17.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	14	10	19	5
Scarlet fever	257	23	212	21
Cerebro-spinal meningitis	0	5	0	10
Measles	859	39	891	21
Diphtheria	286	55	310	43
Laryngeal diphtheria (croup)	23	12	29	11
Tuberculosis	186	175	183	166
Chicken-pox	36	0	42	0
Small-pox	0	0	1	0

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from February 10 to February 17, 1900:*

Ashford, Bailey K., First Lieutenant and Assistant Surgeon, will report in person at Washington Barracks, D. C., upon the expiration of his present leave, for temporary duty.

Borden, William C., Captain and Assistant Surgeon, United States Army, is relieved from further duty at Washington Barracks, D. C.

Caldwell, Robert E., Acting Assistant Surgeon, United States Army, will proceed to San Francisco for duty on a transport when a vacancy occurs.

Darnall, Carl R., First Lieutenant and Assistant Surgeon, United States Army, is relieved from further duty in the Division of Cuba, and will report in person to the commanding general, Department of the East, for duty with recruits *en route* to Manila.

Harris, Henry S. T., Major and Brigade Surgeon, United States Volunteers, will report to Schwan, Theodore, Brigadier General, United States Volunteers, for duty with his command.

Kennedy, James M., Captain and Assistant Surgeon, United States Army, will proceed by the first available transport to Manila for duty.

Moore, H. S., Acting Assistant Surgeon, will proceed to San Fernenado de la Union, Luzon, for duty, relieving Burns, Robert, Captain and Assistant Surgeon, Forty-ninth Infantry, who will proceed to Manila for duty.

Shattuck, E. C., Acting Assistant Surgeon, is relieved from duty at Fort Pickens, Florida.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending February 17, 1900:*

Barber, C. L., Passed Assistant Surgeon. Ordered to the *Kearsarge*. February 20, 1900.

Beebe, D. G., Assistant Surgeon. Detached from the *Petrel* and ordered to Port Isabella.

Rosenbleuth, J. C., Passed Assistant Surgeon. Ordered to the Naval Recruiting Station, New Orleans.

Simons, M. H., Medical Inspector. Detached from the Naval Recruiting Station, New Orleans, and ordered to the *Philadelphia* as fleet surgeon.

Streets, T. H., Medical Inspector. Detached from the *Philadelphia* as fleet surgeon and ordered to the New York Navy Yard.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the United States Marine-Hospital Service for the Seven Days ending February 15, 1900:*

Carter, H. R., Surgeon. Upon expiration of leave of absence to report at Washington, D. C., for special temporary duty.

Glennan, A. H., Surgeon. To proceed to Mobile as inspector of unserviceable property. To proceed to Searcy, Arkansas, for special temporary duty.

McIntosh, W. P., Surgeon. To proceed to Pensacola, Florida, for special temporary duty.

Rosenau, N. J., Passed Assistant Surgeon. To proceed to Philadelphia for special temporary duty.

Cumming, H. S., Passed Assistant Surgeon. Granted leave of absence for fourteen days from February 21st.

Tabb, S. R., Assistant Surgeon. Granted extension of leave of absence for fourteen days on account of sickness.

Burford, Hugh, Acting Assistant Surgeon. Granted leave of absence for two weeks from February 15th.

Keyes, J. M., Acting Assistant Surgeon. Granted leave of absence for sixty days from January 15th.

Moncure, J. A., Acting Assistant Surgeon. Relieved from duty at Gulf Quarantine and directed to proceed to the South Atlantic Quarantine Station for duty and assignment to quarters.

Change of Address.—Dr. Elihu Russell Houghton, from No. 78 Eighth Avenue, Brooklyn, to No. 103 West Ninety-first Street, New York.

Society Meetings for the Coming Week:

Monday, *February 26th:* Medical Society of the County of New York; Lawrence, Massachusetts, Medical Club (private); Cambridge, Massachusetts, Society for Medical Improvement; Baltimore Medical Association.

Tuesday, *February 27th:* New York Dermatological Society (private); Metropolitan Medical Society, New York (private); Buffalo Academy of Medicine (Section in Obstetrics and Gynæcology); Rome, New York, Medical Society; Boston Society of Medical Sciences (private); Richmond, Virginia, Academy of Medicine and Surgery.

Wednesday, *February 28th:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Auburn, New York, City Medical Association; Berkshire, Massachusetts, District Medical Society (Pittsfield); Philadelphia County Medical Society.

Thursday, *March 1st:* New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, New York; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington); Medical Society of City Hospital Alumni, St. Louis; Atlanta Society of Medicine.

Friday, *March 2d:* Practitioners' Society of New York (private); Clinical Society of the New York Post-graduate Medical School and Hospital; Baltimore Clinical Society.

Saturday, *March 3d:* Manhattan Medical and Surgical Society, New York (private); Miller's River, Massachusetts, Medical Society.

Births, Marriages, and Deaths.

Born.

Guthrie.—In Portsmouth, Virginia, on Thursday, February 8th, to Dr. and Mrs. J. N. Guthrie, a son.

Married.

Alexander—Kimball.—In Appalachicola, Florida, on Monday, February 19th, Dr. Martin Taylor Alexander and Miss Minnie Louise Kimball.

Dunn—Shippen.—In Philadelphia, on Saturday, February 3d, Mr. Edward Sanford Dunn and Miss Mary Shippen, daughter of Dr. Edward Shippen.

Fisk—Carter.—In Baltimore, on Wednesday, February 14th, Dr. Arthur Lyman Fisk, of New York, and Miss Alice Bowie Carter.

Gordon—Borst.—In Luray, Virginia, on Wednesday, February 7th, Dr. John Churchill Gordon, Jr., and Miss Cornelia Borst.

Kurrus—Sturtevant.—In New York, on Thursday, February 8th, Dr. John Kurrus and Miss Lillian Chapman Sturtevant.

Marks—Froehlich.—In New York, on Wednesday, February 14th, Mr. Henry A. Marks and Miss Selma Froehlich, daughter of Dr. David Froehlich.

Morrison—Walker.—In Hot Springs, Arkansas, on Wednesday, February 14th, Mr. Charles B. Morrison and Miss Pearl Walker, daughter of Dr. Joel J. Walker.

Seaman—Hatton.—In Brooklyn, on Wednesday, February 14th, Mr. Albert William Seaman and Miss Daisy Georgia Hatton, daughter of Dr. Joseph Hatton, of Augusta, Georgia.

Shaffer—Dibble.—In New York, on Thursday, February 1st, Dr. Ira Edmund Shaffer and Miss Jessie M. Dibble.

Wahlig—Foerster.—In New York, on Wednesday, February 7th, Dr. Herman G. Wahlig and Miss Marie Theresa Foerster, daughter of Dr. Francis Foerster.

Died.

Higley.—In Manila, Philippine Islands, on Saturday, February 3d, Dr. Brainard S. Higley, Jr., United States Army.

Hilles.—In West Haven, Connecticut, on Thursday, February 15th, Dr. John Hilles, in the forty-fourth year of his age.

Holmes.—In Chicago, on Monday, February 12th, Dr. Edward Lorenzo Holmes.

Hopkins.—In New York, on Thursday, February 15th, Dr. Woolsey Hopkins.

Kemp.—In New York, on Friday, February 16th, Dr. James T. Kemp.

Rightmire.—In New York, on Sunday, February 4th, Dr. William V. Rightmire, aged thirty-six years.

Smith.—In Philadelphia, on Monday, February 5th, Dr. Charles Carroll Smith, United States Navy.

Letters to the Editor.

CARBONIC ACID AS AN ANODYNE AND ROBORANT.

126 East Twenty-ninth Street,
New York, *February 19, 1900.*

To the Editor of the New York Medical Journal:

Sir: In addition to my paper on The Therapeutical Application of Carbonic-acid Gas which appeared in your issues for January 6th and January 13th, I wish to give briefly a preliminary notice of a case the full description of which I am convinced will mark an event in the history of medicine.

A lady of twenty-six years, not married, has been a sufferer for many years. Without entering at present into the details of the history, I only wish to mention that she has cicatrization from gastric ulcer, that the symptoms described indicate that enteritis membranacea has existed, and that there are at present adhesions or cicatrizations with or in the smaller intestines. The left kidney has been removed and there is slight catarrhal pyonephritis and serious cystic trouble the nature of which I shall not enter upon at present. For two years the patient has been confined to bed. During this time she has never been free from pain in stomach, intestine, and bladder, and has been treated by many of the best-known physicians in the land. The records of all medication and diet have been scrupulously kept day and night for the last two years by two excellent professional nurses, and these records have been controlled by the physicians in attendance. For two years the patient has had morphine or codeine administered in the shape of hypodermic injections, as much as sixteen grains of morphine in one day. As a rule, the longest time the lady would be without such narcotic was twelve hours. The attention of the lady's father was called to the article above mentioned, and I was engaged to take charge of the case in order to try carbonic-acid treatment. On February 6th I began with inflation of the rectum with carbonic-acid gas by means of the contrivance described in my lectures and the paper already quoted above. Since the institution of this carbonic-acid treatment all administration of narcotics has been discontinued, the patient has *now no desire for it any more*, and, while the morphine only enabled her to tolerate pain but never relieved the suffering, the carbonic-acid-gas administration has controlled the pain completely. Yesterday and to-day, February 18th and 19th, I have given carbonic-acid-gas baths of half an hour's duration. They have thus far produced a marked invigorating effect. I wish to put stress on one point, that errors or deceptions in regard to the discontinuance of morphine administration can positively be excluded in this case.

A. ROSE, M. D.

VOMITING FROM THE USE OF HEROINE.

941 MADISON AVENUE, NEW YORK, *February 12, 1900.*

To the Editor of the New York Medical Journal:

SIR: In reply to the letters of Dr. Thomson and Dr. Robinson, which appeared in the *Journal* of February 3d and 10th, on vomiting after the use of heroine, I would state that in the course of my article I distinctly called attention to the fact that vomiting might occur after its use, just as it did after that of any preparation of morphine. So far as I can judge, its frequency may be roughly estimated at about from eight to ten per cent. This will agree with the experience of Dr. Robinson, who observed it in two out of twenty cases. Idiosyncrasy plays an important rôle here, as it does in the case of all opiates. Hence I make it a rule to tell patients that, if nausea or vomiting occurs, either the dose is to be reduced or the use of the drug discontinued.

As regards the case of a girl of five years, with a bad mitral lesion and pertussis, who died after the administration of a twenty-fourth of a grain every five hours, I may state that the dose was excessive. Assuming a sixth of a grain or, more properly, a twelfth of a grain, every six hours as the adult dose, and applying the rule that the proportionate dose of opiates for children should be much smaller, this will at once become apparent. That the dose should have been even smaller in a child suffering from a bad mitral lesion and pertussis needs no comment.

M. MANGES, M. D.

THE TERM PNEUMONIA.

To the Editor of the New York Medical Journal:

SIR: A holds that the trend of modern pathology is toward the restriction of the term pneumonia to that process which results from a pulmonary invasion by the *Bacillus lanceolatus*—that is, that it is a specific disease comparable as such to gonorrhœa and the like.

B contends that pneumonia is a generic term and pertains to any affection of the lungs accompanied by exudation and consolidation.

Which of the two disputants is correct?

LUPUS.

⁂ The difference is perhaps rather apparent than real, for A has in mind a tendency, while B speaks only of what he takes to be the actual state of things. Perhaps some of our readers would like to discuss the matter.

Pith of Current Literature.

Arrested Development of the Speech Centre.—Dr. Arthur Voelcker (*Lancet*, December 16, 1899) recently reported to the Clinical Society of London a case of arrested development of the speech centre occurring in a girl, aged seven years and a half, who was unable to speak. The child was the elder of two children, her brother being healthy. The father's sister had a child, aged eleven years, who was said to be similarly affected. There was no family history of insanity, epilepsy, alcoholism, syphilis, or rheumatism. The previous history of the child was that she was quite well till six months of age, when she had a series of general convulsions ascribed to dentition. These fits recurred occasionally up to the age of three years, when they disappeared. She walked at twelve months, but had never spoken. At one year she had a severe fall on her forehead, followed by suppuration but no discharge of bone. At four years she had measles. She had never been violent, passionate, or emotional, and had been clean in her habits, though she occasionally soiled her clothes. Though unable to speak she appeared quite bright and intelligent and heard well. On admission her present state showed her to be rather small but well formed. The maximum head circumference was 19.75 inches. The forehead was scarred in the centre but no depressed bone was felt. The palate was high and rather narrow. Motion and sensation were natural and there was no muscular wasting. The superficial and deep reflexes were natural. Coordination was good. There was no tremor of the limbs. The child was rather left-handed. She was intelligent, understood what was said to her, and did what she was told to do readily. Her hearing was normal. Spontaneous speech was limited to a few monosyllabic utterances, chiefly "Eh." Imitative speech included "Eh," "Bee," "Bye," "Baa," "Gee," "Tick," and she repeated sounds with a numerical, though not a phonetic, accuracy; thus her repetitions included the same number of syllables as the word she attempted to repeat. The ticking of a watch did not evoke a rhythmic response. She could sing, but no recognizable tune, nor did she sing scales in unison with the piano. There was no attempt to continue the serial production of sounds, as in counting, saying the alphabet, etc. "Yes" and "no" were sometimes accompanied by their usual affirmative and negative head gestures. The sight was natural. She could not recognize printed or written words, numerals, or letters, but readily recognized pictures of objects and objects themselves. She had no recognizable appreciation of color, but distinguished large from small objects. She was unable to write letters, words, or numerals, or to copy them. She could, however, copy straight lines and circles with either hand, preferably with the left, but could not make a cross. When writing with the left hand she frequently made her marks from right to left. The case, he observed, was interesting from the fact that it differed from the cases of deaf-mutism and from cases of aphasia occurring in mentally deficient children, and from those in whom aphasia developed after the power of speech had been acquired. Dr. Bastian had pointed out in the development of the power of speech that the first stage consisted in learning to associate particular sounds with particular mental impressions, and this stage had evidently been reached by the child, but the second stage, in which the power of articulating the sounds which had been used as mental symbols was acquired, had not yet been reached by the child. Accepting the existence of a visual and an auditory perceptive centre and a glosso-kinæsthetic and cheiro-kinæsthetic centre as maintained by Dr. Bastian, it appeared that the two former centres were intact but that the two latter or their commissural connections with the first two centres were involved. The observation that the child often wrote from right to left was explicable if it was remembered that movements in the right hand of supination resulted in a clockwise movement of the thumb, while in the left hand supination resulted in a counter clockwise movement, and that in movements simultaneously performed in the two upper limbs it was easier to excite corresponding muscles than to make the movements of one side maintain a parallelism with those of the other. Thus it was easier to simultaneously describe two circles with the fingers of the right and left hand respectively, one clockwise and the other counter clockwise—a fact which was also confirmed by the results of an attempt to describe a circle with each hand rapidly while trying to maintain a parallelism of the two hands. This would tend to show that in mirror writing they had in the left hand represented the movements of the right, and that such movements were the result of kinæsthetic and not visual impressions, and also that it was probably that the centre for writing was, as Elder maintained, in the left hemisphere. The absence of any training in writing made it impossible to determine the extent to which the cheiro-kinæsthetic centre itself was involved, and the same held good with regard to speech and the glosso-kinæsthetic centre. The disease must affect the region of the posterior parts of the second and third left frontal convolutions and was probably not a gross lesion but due to arrested or inhibited development of function of the glosso-kinæsthetic and cheiro-kinæsthetic centres or their connections with the auditory and visual perceptive centres. The prognosis was favorable and the treatment recommended was instruction in writing and in the lip language. In reply to the president, Dr. Voelcker said he thought they must look to the convulsions as having in some way damaged the region referred to, though the lesion might not be discoverable by the microscope or by the naked eye.

The Treatment of Keloid by Static Electricity.—(*Paris Thesis*, July, 1899; *Treatment*, December 28, 1899.) J. Bécue describes six cases of keloid treated by static electricity, a method introduced by Derville, who employed it to relieve the pain in a case of keloid over the sternum before scarifying it. Although the keloid measured six centimetres by two centimetres, yet it disappeared after three applications. This was the most rapid cure, but the others were equally benefited, though less rapidly. The static electricity is employed in the form of sparks, and according to the author it gives the best results, at the same time relieving the pain. It is not painful, and acts very rapidly. He suggests that, as recent keloids are more easily affected than those which have existed longer, it would be better in the case of keloids of long duration to remove them with the knife, and then, if there is any recurrence, to apply the electricity. Each application lasts usually eight or ten minutes, but in the case of very small keloids it should not exceed five or six minutes, so that the operator may avoid forming vesicles. It is advisable that the applications should not be more frequent than once a fortnight, so that the effect may be seen.

Local Massage in Exophthalmic Goître.—According to the *Medical Review* for January 27th, this procedure is said to have been used with some degree of success. In soft, pulsating goîtres it is said to be especially useful. Care should be exercised in the massage, which should be made lightly at first; it should be made over but one lobe and with one hand. Later the massage may become gradually deeper, until the whole gland can be lifted up and gently squeezed.

A Substitute for the Poultice.—M. I. Wilbert, Ph. G. (*Indian Lancet*, November 16, 1899), gives the following as the approximate composition of "antiphlogistine":

To get a working formula for the mass, twenty-five grammes of "antiphlogistine" were taken and mixed with two hundred cubic centimetres of distilled water. This mixture was transferred to a wetted filter and allowed to drain. The mass on the filter was then thoroughly washed with distilled water, the residue dried at a temperature of about 80° C., when the dry powder was found to weigh 12.3 grammes. The filtrate from the original mixture was perfectly clear and tasted aromatic and sweet, showing that the antiseptic, aromatic oils that play an important part in the published formula were in reality only added as flavoring ingredients.

From the information thus obtained, the following formula was adopted:

℞ Kaolin	1,000
Glycerin	1,000
Boric acid	100
Oil of peppermint	1
Oil of wintergreen	1
Oil of eucalyptus	2

Pass the kaolin through a No. 60 sieve to free it from sticks and coarse particles and heat to 100° C. for an hour or more to sterilize; add the glycerin and continue the heat for thirty or forty minutes, stirring the mass occasionally with a spatula, until a smooth, creamy mass is obtained; remove the heat and, when nearly cool, add the boric acid and flavoring oils; mix thoroughly, and preserve in tin or glass boxes that are fairly tight, so as to prevent the absorption of moisture from the atmosphere. The resulting product will differ slightly in color, owing to a slight difference in the constituents of the kaolin, the kaolin sold in Philadelphia not containing any iron, while a lot that was obtained through a New York house did contain a trace of iron. This, however, does not affect the efficiency of the product in any way.

Mr. Wilbert remarks that this preparation may be used in all cases where a poultice is indicated, and has the advantages of being readily applied without boiling or other preparation, of not requiring renewal for from twelve to forty-eight hours, according to the nature of the inflammation or injury, and of giving almost immediate relief from pain in most cases of acute or subacute inflammation or congestion. As a substitute for many ointments and cerates it has the advantage of not being greasy or dirty, being easily washed off with cold water. It can readily be combined with many drugs, such as iodine, the various iodides, iodoform, tar, ichthyol, and others used in the local treatment of disease.

Plugging of the Uterus in Abortion.—Dr. J. Keogh Murphy (*Treatment*, December 28, 1899), in a thesis for the M. D. degree of the University of Cambridge, says:

"I would venture to put forward what I consider to be safe rules for the employment of plugging: 1. Plugging may be considered to be good treatment—indeed, the best—in cases of inevitable abortion, where the hæmorrhage is very serious, and the os contracted so that neither a finger nor the curette can be passed into the uterine cavity. 2. In such cases plugging should only be used as a means of stimulating uterine contractions so as to obtain sufficient dilatation of the cervix to be able to empty the uterus. 3. Under no circumstances should plugging be used in incomplete abortion.

"Plugging, indeed, in cases of abortion only finds its place in the first three months of pregnancy; here the hæmorrhage may be very alarming before there is any dilatation of the os—indeed, I consider the earlier the pregnancy, the graver the hæmorrhage is likely to be. After the third month the hæmorrhage is not likely to be severe before the os is sufficiently dilated to allow the finger to be introduced.

"I consider, even in the early months of pregnancy, the cases where plugging is really needed are very rare indeed. To illustrate from my own cases: out of nearly four hundred cases I only had to plug the vagina three times, and in one of these cases it was quite unnecessary; but I had no curette with me at the time, and the woman had lost a very great quantity of blood. Most certainly, when used, plugging *was* effectual; it completely controlled the hæmorrhage, and after the plug was removed the os was found to be sufficiently dilated.

"The disadvantages of plugging, to my mind, are: 1. That it is not a safe operation unless done with great cleanliness and aseptic materials, the great pressure around the cervix causing ready absorption of septic material. 2. If it is to be effectual, it is a very painful operation, necessitating an anæsthetic. 3. It is a temporary, not a final, measure, requiring to be repeated perhaps indefinitely.

"To shortly enumerate the routine of the operation itself which should be followed: A vaginal douche should always be given, the vulva being first cleansed with soap and water. The bladder and rectum should be always emptied before plugging. A speculum is really never needed, two fingers of one hand pressing down the perinæum being much better, a speculum giving rise to difficulty in withdrawal and loosening of the plug. If possible, plug round the cervix with gauze, but for the vagina I would strongly recommend small balls of absorbent wool wrung out in an antiseptic, preferably lysol; the kite tail of lint soaked in oil and fastened together by strings, recommended by some authors—a wonderful and fearsome device—should be eschewed.

"The plug should be always removed in twelve hours at the longest, and the vagina douched again after removal, care being taken to see that no plug is left behind in the fornices. For this reason I advise a single piece of gauze round the cervix. In such cases the use of the catheter will seldom be required, owing to the preceding loss of blood. If plugging be done at all, it should be thoroughly done; it is not easy to err on the score of tightness, short of actual violence. The necessarily large consumption of cotton wool should not be feared, remembering that a plug to be of any use at all must not only fill but distend the vagina and press up the uterus."

The author then recommends boldly emptying the uterus by the finger or by the curette as soon as the cervix is sufficiently dilated to do so. This he believes to be the correct treatment in all cases, and he would even recommend it to be done in all cases where hæmorrhage, even though slight, continues, for here we may be certain that the abortion is incomplete.

The author submits the following conclusions: 1. Plugging in early abortion is rarely necessary, and when employed should be used only with the definite hope of dilating the cervix. 2. Ergot and other drugs should not be used unless the case is complete, and they will then be unnecessary. 3. In about five per cent. of all cases (twenty to four hundred) operative removal of the ovum must be undertaken. He would advocate the early and thorough treatment of inevitable and incomplete abortions, as well as the entire safety of the treatment.

The Application of Photographic Developers to Histology.—Salge and Stoeltger (*Münchener medicinische Wochenschrift*, January 2d and 9th; *Journal of the American Medical Association*, February 3d) placed preparations in a 0.5-per-cent. solution of silver nitrate for three minutes and then, after rinsing in distilled water, transferred them to a five-per-cent. solution of sodium iodide or bromide for one minute; then rinsed them and developed them with "amidol developer," the same strength as used in photography. The result was a "magnificent staining of the nuclei" with an elective stain for rhachitic bones, and remarkable differentiation of the osteoid substance of decalcified objects. This method of staining is a distinct advance, a special advantage being its superiority for photographic reproductions. If the stain is not strong enough, the process can be repeated as often as necessary. The photographic method of "strengthening" with uranium also proved another advance. Preparations thus treated acquire a handsome reddish-yellow tone, and prove particularly fine for microscopic study and colored projections. Lithiocarmine seems to be the best contrast stain for the merely silvered preparations, and methylene blue or water-blue iii, B, for the uranized.

Potassium Iodide in Threatened Abortion.—Dr. Montgomery (*International Medical Magazine; Charlotte Medical Journal*, December, 1899) urges the use of potassium iodide in case of threatened abortion even when the history leaves the question of syphilis in doubt. He believes that it is one of the most effective remedies in decreasing the irritability of the uterine mucous membrane. In these cases he administers five grains of potassium iodide three times a day in water, after meals. He believes also that in cases in which sclerosis or areolar hyperplasia of the uterus has occurred no plan of treatment will do more to insure a woman completing her pregnancy.

Toxic Amblyopia.—Dr. I. O. Stillson (*Ophthalmic Record*, October, 1899; *St. Paul Medical Journal*, February) desires to make prominent the necessity of detecting the cases early, especially when railroad employees are affected. He observed some cases among women. He is convinced that the disease is far more prevalent than has heretofore been acknowledged, a large percentage of cases being among railroad and traveling men; people who lose much sleep, who live with irregularity both as to sleep and diet, who smoke much, and drink more or less regularly, especially when the stomach is empty. The women affected, as a rule, were excessive coffee drinkers. He thinks it probable that many cases of hysterical amblyopia in women are due to excessive coffee and tea drinking, or to the habitual use of bromides, phenacetine and other coal-tar derivatives, and to small but more or less regular doses of spirits. He thinks that in women a certain percentage of the cases of choked disc are traceable to menstrual disorders. Whisky and tobacco have been credited with causing this trouble, but lead among painters, and stramonium in asthma cigarettes, quinine in excessive doses, opium, etc., have been found, by competent observers, to produce the condition.

Prognosis is usually favorable, when the toxic element is removed from the system, provided structural changes in the optic nerve have not taken place.

Dilatation of the Stomach.—Musser and Steele (*American Journal of the Medical Sciences*, February), as a result of their investigations, arrive at the following conclusions: 1. The symptoms upon which most reliance can be placed in determining the presence of gastric motor insufficiency are: *a.* The presence of fluid and food in the stomach, fasting overnight. *b.* The ready entrance of fluid through the tube and difficulty in the return flow. *c.* The absence of visible gastric peristalsis. *d.* Evidences of fermentation and intoxication by the products thereof. *e.* Thirst. *f.* Scanty and concentrated urine. 2. In determining the position and size of the stomach, by far the most certain method has been inflation by air through the stomach tube; auscultatory percussion, Dehio's method, and determining the capacity of the stomach by the amount of water required to produce a sense of fullness, while signs of value may lead to error. 3. It may be inferred from the somewhat small number of cases just reported that the condition is not uncommon in students. An analysis of the ætiological factors is as follows: *a.* Myasthenia caused by chronic gastritis from the abuse of alcohol and tobacco, four cases. *b.* Myasthenia from deficient innervation, two cases. *c.* Myasthenia, probably of congenital origin, one case. *d.* Myasthenia occurring in the course of acute disease, one case.

Recurring Laryngeal Stenosis Following Intubation.—Dr. Louis Fischer (*Medical Record*, December 2, 1899) points out that the recurrence of laryngeal stenosis after intubation is primarily caused by forcibly pushing a tube into an œdematous or infiltrated mucous membrane. As Dr. O'Dwyer pointed out in his paper read before the American Pædiatric Society at Washington, 1897, entitled Retained Intubation Tubes: "The cause of persistent stenosis following intubation in laryngeal diphtheria can be summed up in the single word 'traumatism.' Paralysis of the vocal cords may possibly furnish an occasional exception to this rule."

Thus an injury to the larynx can be done by a tube that does not fit; it may result from an imperfectly constructed tube, or from a perfect tube that is too large for the lumen of the larynx, although proper for the age, or from a tube that is perfect in fit and make, if not cleaned at proper intervals. O'Dwyer states that the seat of the lesion that keeps up the stenosis is just below the vocal cords in the subglottic division of the larynx, or that portion of the organ bounded by the cricoid cartilage. Exceptions to this rule result from injury produced by the head of the tube on either side of the base of the epiglottis, just above the ventricular bands. The reasons given by O'Dwyer for the existence of the stenosis at this particular portion can best be explained by the following.

Anatomically, there exists normally a constriction in the cricoid region. When the mucous membrane is infiltrated or becomes œdematous, it swells to such an extent and only toward the centre, as the outside is surrounded by cricoid cartilage, and, while thus swelling toward the centre, mechanically impedes respiration, and calls for mechanical relief—*i. e.,* intubation. O'Dwyer states that if a tube is forced into the larynx in a case of this kind, ulceration and sloughing of the tissues are inevitable, and in some instances necrosis of the cricoid cartilage may result from interference with the circulation. Our only safeguard in preventing too much mechanical injury, as in the condition above cited, is to introduce "a tube of small calibre."

In the early stage of this form of cases the dyspnœa returns slowly. Sometimes several days, or in some instances only a few hours may pass before the former condition of laryngeal stenosis is recognized and the necessity for the introduction of a proper tube is demanded. When the dyspnœa returns slowly, it means that the lining membrane of the larynx can not swell while the tube is in position, because it is compressed between the tube and the cartilage. It requires some time for the reappearance of the œdematous tissue, which drops into the chink of the glottis and obstructs the respiration, the latter condition being mechanically prevented as long as the tube is *in situ*. Exceptional cases have been reported in which granulation tissue springs up from the antero-lateral aspects of the larynx just above the ventricular bands. O'Dwyer states that the origin of this growth is a slight ulceration or erosion of the mucous membrane at the points corresponding to the greatest transverse diameter of the shoulder of the tube from the pressure exerted during the act of swallowing.

Paralysis of the vocal cords, although known to exist, is very hard to diagnosticate without a proper laryngoscopic examination. Like other forms of paralysis, it comes very late in the course of the disease, and if, after wearing an intubation tube for a short time, laryngeal stenosis recurs, it is safe to assume that paralysis of the vocal cords is not the cause of the immediately recurring stenosis.

How can we prevent recurring laryngeal stenosis in ordinary membranous diphtheria? Every tube must be introduced in the gentlest manner possible; the slightest force exerted will lacerate the tissues. It is a wise rule to remove the tube every three days; according to O'Dwyer, tubes should be removed at the end of five days to avoid irritation from calcareous deposits. These deposits will form only on metal and not on the rubber tubes. This has been pointed out by several writers, and is borne out by experience. If a tube must be introduced more than twice, the writer has adopted the plan proposed by O'Dwyer, and which is not mentioned even in recent text-books. It consists of taking a rubber tube, immersing it in a solution of hot gelatin containing five to ten per cent. of powdered alum, and thus introducing the tube with this covering of alum-gelatin. The writer has also considerable experience with the beneficial results of a ten-per-cent. solution of ichthyol and gelatin as a covering for the rubber tube. In the same manner a film consisting of gelatin or paraffin without iodoform, and europhen three-per-cent. solution, was applied in several cases with very good results.

Dr. Fischer records the case of a child seven years and a half old in which there is no question in his mind that the recurring laryngeal stenosis was evidently due to the traumatism caused by repeated (forcible) introduction of the tube, inviting ulceration by a laceration of the soft tissues. It was necessary to intubate and extubate every three days for a period of forty-nine days, until the stenosis finally disappeared. In this particular case he advised a coating of gelatin and ichthyol over the tube for the internal medication of the larynx.

Proceedings of Societies.

SOCIETY OF THE ALUMNI OF BELLEVUE HOSPITAL.

Meeting of November 1, 1899.

The President, Dr. CHARLES E. QUIMBY, in the Chair.

(*Concluded from page 212.*)

Cross Examination.—Dr. PARKER SYMS asked Dr. A. A. Smith for a definite expression of opinion from him as to the absolute efficacy of the sodium salicylate in the treatment of rheumatism; also if he had definitely compared the salicylate treatment with other methods.

Dr. SMITH replied that he had done so, and that he thought the evidence was decidedly in favor of the salicyl treatment. It very quickly relieved the pain and diminished the constitutional disturbance, and was apt to shorten decidedly the attack. In reply to a question as to what was the general duration of an attack of acute articular rheumatism, and how the duration was affected by the salicyl treatment, Dr. Smith said that the duration varied very greatly. He thought it had been generally accepted by the profession that acute articular rheumatism was a self-limited disease varying greatly in different individuals. The duration he would state to be from two or three weeks to five or six weeks without any treatment. It would be impossible for this reason to say that the salicyl or any other remedy distinctly shortened the attack in a given instance. This would vary even in the same individual at different times.

Dr. H. H. SEABROOK said that he understood that the children presented by Dr. Winters had given no history of rheumatism. He would therefore like to ask Dr. Winters if he was of the opinion that the existence of a mitral murmur proved the existence of rheumatism.

Dr. WINTERS replied that in the child it was not at all uncommon for an endocarditis to be the first rheumatic manifestation, and that one frequently saw cases of endocarditis where there had been no other rheumatic symptom and no history of rheumatism. There was no question that endocarditis occurred at the very beginning of rheumatism in children. He cited the case of a girl of eight years who had been profoundly anæmic without evident cause. Believing Trousseau's statement that there were only two other diseases—diphtheria and malarial disease—which produced such rapid and profound anæmia as rheumatism, he had assumed this anæmia to be the result of rheumatism. Two months later this girl had shown an acute endocarditis. Many such cases had been observed at the Demilt Dispensary. When asked how he knew that these cases were rheumatic, if there had been no other manifestation of rheumatism, Dr. Winters replied that an acutely developed, soft, blowing murmur at the apex of the heart, conveyed to the left and heard behind, he looked upon as evidence of acute endocardial inflammation. He then referred again to the children presented by him, particularly to the little boy who had been anasarcous last June. The infant of three months, in the same family, he felt sure would turn up some day with an endocardial lesion. Thus, in children, it might be one year urticaria, another year stiffness of the joints, at another time an amygdalitis, and on still another occasion an endocarditis.

Dr. R. J. CARLISLE asked Dr. A. A. Smith regarding the treatment of rheumatism and the relative value which he placed upon the salicylates and upon the alkalies in preventing endocardial complications.

Dr. SMITH replied that this was as yet a very unsettled question. From a large experience he had been led to think that cardiac complications were just about as frequent to-day as before the salicyl treatment had been introduced; nevertheless, he could not help thinking that agents which so quickly relieved the pain and fever might perhaps prevent the cardiac complications occurring after the second or third attack. It was well known that an endocarditis was apt to come on at the very beginning of an attack before any treatment had been instituted.

Dr. CARLISLE asked Dr. Winters if in an endocarditis in a child without any manifestation of rheumatism he would depend upon either the alkalies or the salicylate treatment.

Dr. WINTERS replied that he would not.

Dr. FREDERICK HOLME WIGGIN asked Dr. Smith what doses of salol had been used by him, and also if he had used acetanilide at all.

Dr. SMITH replied that in the acute stage he had used salol in sufficient doses to give evidence of carbolic acid in the urine—*i. e.*, ten grains every two or three hours. These manifestations had oftentimes been obtained within twenty-four hours. In doses of five grains every three or four hours it rarely gave the appearance of carbolic acid in the urine. He had combined acetanilide with the salol, and apparently with satisfactory results—more satisfactory decidedly in the way of relieving the pain and constitutional symptoms than if salol alone were given, but the trouble was that it could not be continued sufficiently long.

Dr. PARKER SYMS asked Dr. Winters if he considered rheumatism due to infection; also if he considered endocarditis, producing valvular disease of the heart, to be the result only of the infection of rheumatism, or that it might be due to other forms of infection.

Dr. WINTERS replied that he looked upon rheumatism as the result of an infection, and believed that endocarditis might be due to many other forms of infection. When he saw an acute endocarditis in a child, after eliminating other causes, he assumed that the endocarditis was rheumatic. As a matter of fact, endocarditis was not a *complication* of rheumatism; if the text-books were written correctly they would begin with the description of rheumatism attacking the endocardium rather than with the description of the affection of the joints.

Dr. **Syms** then asked if Dr. Winters felt that he absolutely knew that any case of endocarditis was rheumatism as long as it was not in his power to demonstrate the specific bacterium.

Dr. **Winters** replied that it could only be determined by a process of exclusion.

Dr. **Floyd M. Crandall** said that he would have little hesitation in considering the disease rheumatism in the child presented. As Dr. Winters had said, it was very important to get the history of the whole childhood before assuming that all the evidence was in. At the meeting of the American Pædiatric Society to which reference had been made by Dr. Winters, he had himself read a paper on chorea, based on a hundred and thirty-one cases. He had found in almost fifty per cent. of these an antecedent or concurrent rheumatism, and on following them he had been surprised at the number that had developed rheumatic manifestations after the chorea, the whole number of rheumatic cases being 54.5 per cent. Dozens of the cases had presented one or two attacks of chorea; then perhaps amygdalitis, and then urticaria, the joint symptoms of rheumatism not appearing for two or three years afterward. In many cases there had been a distinct valvular lesion for two or three years before any definite joint symptoms had appeared. He had seen last year a girl with slight torticollis and endocarditis followed by chorea, yet there had been no other manifestation of rheumatism. In the spring this child had had an undoubted and general attack of joint inflammation—in other words, six months after the development of the endocarditis. The symptoms of rheumatism, therefore, in little children were divided instead of all being grouped together as in the adult. The endocarditis very frequently appeared before any of the joint symptoms.

Dr. **R. J. Carlisle** said with reference to the possible results of infection from the intestinal tract that he was reminded of a paper written by Dr. Osler and published in the *American Journal of the Medical Sciences*. In this paper fifteen or twenty cases of erythema nodosum were reported, and it was pointed out that some days before the skin manifestations there had been marked symptoms of indigestion, such as nausea, vomiting, marked colicky pain and a slight rise of temperature. The speaker recalled a case of very marked erythema nodosum in both the upper and lower extremities occurring in a child of nine years. The father of this child had an attack of acute articular rheumatism.

Dr. **Frederick Holme Wiggin** said that he had desired to bring out the question of the proper dose of salol. He had formerly resided in Connecticut in a region where rheumatism was exceedingly common. The salicylates were used by his fellow practitioners. He had personally experimented with salol, and had found that when twenty grains were given every two or three hours up to a total of one hundred and twenty or one hundred and sixty grains in the first twenty-four hours, the urine would ordinarily begin to darken from carbolic acid. When used in this way he had learned that the disease could be quickly controlled. His plan had been to diminish the dose then, but to continue the remedy for some time in order to prevent relapse. He had also found it advisable to begin the treatment with ten grains of calomel, followed by sulphate of magnesium. Later on he had discovered that acetanilide had a marked effect on the disease; it certainly increased the activity of the skin. By combining acetanilide with the salol—say, ten grains of each—he had obtained better results than from either alone. The other physicians in his neighborhood had used smaller doses, but had been unable to get such good results until they had adopted his plan of giving the remedy so freely.

Dr. **Irving S. Haynes** said that Dr. Lambert had endeavored to distinguish between acute articular rheumatism and arthritis deformans, but he would like to hear more definitely regarding this point, and particularly as to the best method of treating this formidable malady.

Dr. **Alexander Lambert** said that in rheumatism there was no destructive lesion in the cartilages of the joints, as in arthritis deformans. In acute articular rheumatism the joint was not destroyed. If the rheumatism became chronic there might be a connective-tissue formation which, in extreme cases, would produce an obliteration of the joint. However, this was very different from a destruction of the articular cartilages and subsequent destruction of the bone, such as was seen in arthritis deformans. In addition, there was a more or less rapid formation of new bone. He knew of nothing new in the treatment except that high degrees of heat applied to the joints seemed to be beneficial, provided it was kept up for a long time. In Europe the chloride baths were used at Nauheim, and were found useful. The worst cases that he had seen had followed infection, such as puerperal infection. The same condition of the joints was found as in the Charcot joint and in syringomyelia.

Dr. **E. D. Fisher** said that evidently the experience of some of the speakers regarding chorea and rheumatism had been different from his own. The differences in statistics were probably largely dependent upon the classes of cases considered to be rheumatic. It was probable that he saw a different class of people—those at a different age—from those coming under the observation of Dr. Winters.

New Inventions, etc.

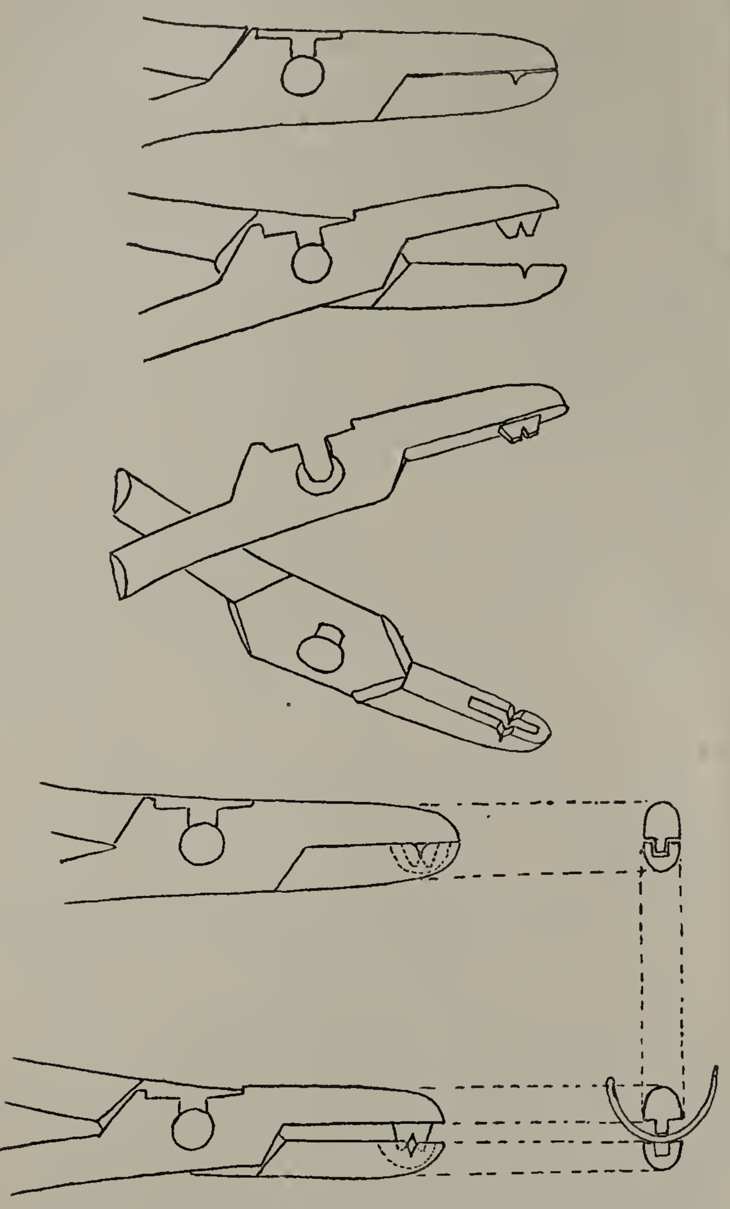
A NEW NEEDLE HOLDER.

By Nathan W. Green, M. D.,
HOUSE SURGEON, ST. LUKE'S HOSPITAL.

While watching an operation where haste for its completion was required, I could not help observing a little unnecessary delay caused by the operator trying to fit the needle he was using in the proper slot of one of the commonly used needle holders.

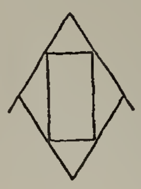
It seemed to me this delay could be avoided if a holder could be made with a single notch, wide at the inlet to easily allow placing the needle, and so arranged that any size of needle might be firmly held in it by closing the instrument, without the time now necessarily taken to select the proper groove.

I have devised the pair of jaws with the notch as shown in the figure. The instrument will hold any size of Hagedorn needle, and any other style of needle, either round with trocar point, flat, or Emmet's taper point.

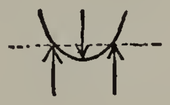


The method of holding the Hagedorn is by a V-shaped notch in either jaw, with the jaws so arranged that they shut into each other, so forming a diamond-shaped grip, which diminishes in size to fit any number by simply shutting the jaws more closely together. It is shown in Diagrams I and II.

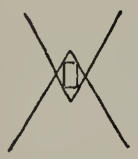
The principle for holding any other curved needle is shown in Diagram III, the upper jaw keeping the most dependent part of the curve of the needle pressed firmly below the axis of its side-to-side turning. The needle on emerging from the tissues may be grasped by the tip of the jaws beyond the V-shaped notch.



Diag. I.



Diag. III.



Diag. II.

I am indebted to Dr. Francis H. Markoe and Dr. B. Farquhar Curtis for their thorough trial and approval of the instrument on the surgical service of this hospital. It was made by Messrs. Kny, Scheerer, & Co., of this city.

Miscellany.

The Training of Woman.—Dr. Grace R. Kimball (*Sanitarian*, February), speaking at the annual meeting of the Massachusetts Teachers' Association upon Some Physical and Moral Considerations in Education, said that we are accustomed to place too little importance upon physical fitness in marriage, thus ignoring a natural law. How often under wedding joys and trappings lurks the spectre of physical unfitness in either one or both of the contracting parties, the menace of future misery! Physical vigor and purity can not be acquired in one generation, though they may be lost in one. The high-school course should include a thorough drill in physiology. The grammar school is too early in the child's life for full appreciation of the work. The real cause of broken health in schoolgirls is the social whirl into which modern children are thrown almost in infancy. We can look after the girls in school, but it is their amusements out of school that wear them out. Women who used to be, equally with the men, the producers for the family, are now reduced to the position of parasites upon the husband, and are forced to outside effort in order to keep their ambitions alive. This is the explanation of the new woman, with her demands for suffrage. Boys can plan out their career in advance, but the poor girls must wait the decision whether they shall marry and enter upon a state of dependence or prepare to earn their own living. Be careful, as teachers, that you do not break the sixth commandment by killing not only yourself, but others. Get back to the good, old-fashioned long recess, with plenty of time to play and refresh the bodies and minds of the children.

Quackery in the Fifteenth Century.—The *British Medical Journal* for January 20th, citing, through *Janus*, an article by Dr. Leopold Senfelder in the *Wiener klinische Rundschau*, says that in 1469 the faculty of Vienna threatened the Minorites and Dominicans to refuse them all medical assistance if they did not refrain from unqualified practice. The chief offenders, however, were women and Jews, and Dr. Senfelder relates several anecdotes of struggles between them and the faculty. In 1442 a baptized Jew, John Gabriel, was, at the request of the burgomaster, admitted to examination. He failed to pass, but requested another opportunity, which was granted, and he was even permitted to choose the questions himself. Instead of appearing, however, he declared he was a surgeon and not a physician, and therefore required no examination, and the faculty had to content itself with proclaiming him a "*perfidissimus Judæus, inimicus et blasphemator domini nostri Jesu Christi et omnium Christianorum.*"

The Conspiracy against the Cigarette.—The New York correspondent of the *Lancet*, writing in the issue of that journal for January 27th, says that the analytical report of the *Lancet* Sanitary Commission on American Cigarettes has aroused a considerable amount of interest in the United States. The "yellow" journals of the country have for a long time done their utmost to prejudice the minds of the general public against the cigarette. They have credited it with causing nearly every ill which human flesh is heir to. According to the accounts of some of the most sensational of these papers, the cigarette is responsible for much insanity and is productive of crimes of all sorts and kinds from murder downward. Of course many, or rather the majority of these blood-curdling descriptions exist only in the imagination of the writers or are exaggerated and garbled out of all similitude of truth merely to pander to the love of the uncanny, which has been cultivated in the minds of American readers of a certain class by the circulation of these vividly exciting journals. However, they have served their purpose, and cigarette-smoking is regarded in the United States with the greatest distrust, and the cigarette itself is believed by the ordinary individual to be composed of the most pernicious, indeed poisonous, materials. The matter was taken up in New York some little time ago and various brands of cigarettes were tested analytically, with the result that no injurious substances were found either in the tobacco or the paper. The finding of the *Lancet* Analytical Sanitary Commission will doubtless go far toward rehabilitating the cigarette—that is to say, so far as its composition is concerned.

The Psychology of "Conversion."—The *Medical News* for December 30, 1899, says editorially that religious convictions, and especially the religious experience known as "conversion," which is a natural accompaniment of adolescence in certain minds with given training, are so essentially an element in social relations that they offer a clew to the mental makeup of the individual. But this fact, that might mean so much to the teacher, the physician, and the parent in the development of the mind of a boy or girl, is apt to be ignored save from a rather narrow moral standpoint. Professor George Albert Coe has worked out this idea, and has published results in A Study in the Dynamics of Personal Religion, which appears in the *Psychological Review*, vol. vi, No. 5, p. 484. He abandons the saints and skips the classic conversions, and comes down to the you-and-me point of view. A series of careful questions and tests put to some seventy or eighty persons of education and discrimination has revealed that conversion is an experience of temperament and of environment rather than a universal human experience. A critical study shows that striking conversions occur chiefly in those denominations that definitely aim to secure them. There was in all cases a striking correlation between each person's experience and his degree of suggestibility. Those that expected joy, ecstasy, and a sense of forgiveness experienced them, even to the point of hallucinations, in just the proportion they were able to feel such emotions when they were expected in other relations of life; while others equally expectant, but who were in daily life more critical and less suggestible, were disappointed. The whole gamut of emotional experience in religion, he holds, might easily be prophesied if the factors of temperament and environment were correctly judged.

The Late Dr. William A. Hammond.—The New York Neurological Society desires to record its regret at the death of Dr. William A. Hammond, one of the founders of this society and for many years one of its most active and distinguished members. Dr. Hammond was one of the pioneers of neurology in this country. His work was always suggestive and most lucidly presented, and it was often original and of permanent value. It has indissolubly linked his name with the history and growth of neurological science. It was before this society that many of his papers were presented. We record our appreciation of his work as well as of his brilliant mental gifts. These were most helpful to this society in its beginnings, and led to enduring results in the advancement of clinical neurology and psychiatry and the development of neurology in America.

[Signed.] CHARLES L. DANA,
LANDON CARTER GRAY,
GEORGE W. JACOBY.

Water for Fretful Children.—The *Medical Review* for January 27th says that the most important lesson for mothers, and perhaps for physicians, to learn is that milk is a food and not necessarily a drink. Of course, it contains a good deal of water; but thirst after drinking milk is as common in infants as it is in grown people. The cry of infants is frequently due to thirst, and is not a demand of the child for food; nor is it an evidence that the food is disagreeing with the child. In all such cases water should be administered liberally; when, if the cry and colic disappear, it will be seen that the difficulty is thirst.

A Bill to Provide for the Employment of Women Nurses in Military Hospitals of the Army.—On January 19th Mr. Hull introduced the following bill into the House of Representatives, and it was referred to the committee on military affairs:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That from and after the passage of this act women nurses, in the proportion of not more than ten per centum of the number of sick and wounded in general and post hospitals of fifty beds and upward, shall be employed by and constitute the women's nursing service of the medical department of the army.

SECTION 2. That there shall be a superintendent of women nurses in the army, who shall be a woman graduated from a general hospital training school for nurses having a course of instruction lasting not less than two years and who shall be appointed by the Secretary of War. That the salary of the superintendent of nurses shall be two thousand dollars per annum.

SEC. 3. That the nurses in the service shall be graduated from general hospital training schools having courses of instruction lasting not less than two years; that they shall be appointed by the surgeon-general of the army under such regulations as may be approved by the Secretary of War; that they shall receive forty dollars a month when on duty within the limits of the United States and fifty dollars a month when on duty outside of the limits of the United States.

That a chief nurse may be appointed for every hospital where there are five or more nurses on duty; that the salary of a chief nurse shall be seventy-five dollars a month within the limits of the United States and eighty-five dollars a month outside of the United States.

That in addition to the salaries above mentioned the superintendent of nurses and each nurse in the women's nursing service shall be entitled to transportation and necessary expenses when traveling under proper orders: *And provided further,* That nurses and chief nurses shall be entitled to quarters, subsistence, laundry for uniforms, medical attendance, nursing, and medicines during illness, and that they may be granted such leaves of absence without loss of pay as the Secretary of War may authorize.

Sec. 4. That the number of nurses necessary for the immediate establishment of the women's nursing service may, upon the passage of this act, be appointed by the surgeon-general.

Sec. 5. That nothing in this bill shall be construed to prevent or to limit the power of the Secretary of War in time of war or of national disaster to avail himself of duly qualified Red Cross nurses (termed "sisters") or of nurses of other worthy societies or associations.

Government Publications of Interest to Physicians.—A correspondent has recently suggested that we publish a list of these publications. We regret that we have not the available space in which to do so. We may, however, mention the *Index-Catalogue of the Library of the Surgeon-General's Office, United States Army*, the annual reports of the surgeon-generals of the army, the navy, and the Marine-Hospital Service, the annual reports of the Commissioner of Education, and the numerous and very valuable publications of the Department of Agriculture, monthly lists of which are sent to all persons who apply for them.

An International Congress of Medical Electrology and Radiology will be held in Paris from July 27th to August 1st. The secretary-general is Professor E. Doumer, of No. 57 rue Nicolas-Leblanc, Lille, France.

The Neuro-muscular Elements in Hip-joint Disease.—This was the subject of discussion at a meeting of the Section in Orthopædic Surgery of the New York Academy of Medicine, held on January 19th. Dr. Newton M. Shaffer read a paper of which the following is an abstract: If, as was generally conceded, the origin of hip-joint disease was in the epiphysis, a great centre of growth and development supplied from the central, spinal, and great sympathetic nervous centres, it would be readily seen that the presence of a foreign body like the bacillus of tuberculosis in such an osteitic focus would cause serious nerve irritation. The following neuro-muscular elements had been recognized and described: 1. Involuntary tonic muscular contraction. 2. Muscular atrophy. 3. Reduced faradaic reaction. 4. Increased muscular excitability. Together they presented a clinical picture of an irritative peripheral-nerve lesion and gave expression to a distinct reflex spinal condition. They were absent from a joint suffering from a simple injury and from primary tuberculous degeneration of synovial membrane, which was comparatively simple in structure and nerve supply.

Reflex muscular spasm was a sign that Dr. Shaffer had noticed early in his practice, and he had spoken of it in 1872 under that name, and that was the first time, so far as he was aware, that the term had been applied to the sign. The occurrence and character of the spasm were unmodified by opium or chloral, but it was annulled by ether or chloroform. It produced joint deformity and sometimes simulated ankylosis. Clinically it was of the utmost importance. Its presence was the first sign of the disease and its absence the surest warrant for the suspension of treatment. It was involuntary, tonic, tetanoid. When passive motion reached a certain point, at which the intra-articular pressure excited nerve irritation, the muscles involved, before quiet, suddenly contracted and resisted further motion. When that point was reached the alert joint sense almost talked to the observer. When convalescence approached and actual immobilization was no longer required, the motion permitted by the apparatus used should be to the inner side of the point indicated by the spasm. Protection, however, should be maintained until the joint was free from reflex muscular spasm, when the patient might safely be restored to a gradually increasing use of the weakened limb freed from its diseased joint. Cases illustrating the ill effects of not heeding this indication were related.

In the case of muscular atrophy considered as a sign of joint disease we were dealing with something more than the effect of disuse. It was far from being functional atrophy. Although an early, important, and expressive sign, its significance was impaired at a later stage by the incidental effects of mechanical treatment, which included rest and compression. This was to be borne in mind when the patient and his friends were apt to think that the atrophy was entirely the result of maintaining too long the restraints of treatment. Before applying electricity to the muscles involved, Dr. Shaffer had surmised that reduced faradaic reaction would be found. It was seen to be uniformly present in all the atrophied muscles which were subjected to electrical test. In 1892 increased muscular excitability was shown by Dr. E. G. Brackett to be a fourth constant neuro-muscular element in hip-joint disease, readily demonstrated early in the disease by the exaggerated patellar-tendon reflex.

Dr. V. P. Gibney said that the reflex muscular spasm was valuable as an aid to correct diagnosis and of great assistance in determining the time when it was proper to give up protective treatment. It was difficult, however, in every case to recognize the final disappearance of this sign. The best test of a joint which has been long under treatment was the use of the limb for one or two weeks, even in spite of the spasm. If, after free use, close observation revealed an increase in motion, the brace might be discarded, but if the range of motion had decreased, with perhaps a little more spasm, mechanical treatment should be resumed.

Dr. T. H. Myers said that the presence of synovial tenderness, or circumarticular pain, or stiffening of the affected joint or neighboring joints, from prolonged immobilization, might easily make difficult a clear recognition of the resistance to motion made by reflex spasm. It was better to err by attributing the resistance arising from these causes to reflex action than to make the mistake of not recognizing the presence of the tetanoid spasm.

Dr. G. R. Elliott thought that there was no hard-and-fast rule as to the discontinuance of treatment. Instruments should be used that readily permitted whatever increase of motion the symptoms warranted, to be discarded only when free movements for a considerable time were followed by no bad results.

Dr. W. R. Townsend recognized the nervous complications of joint disease and the practical value of reflex contraction as a clinical sign in disease of the hip joint.

Dr. H. L. Taylor acquiesced in the views presented, first, that reflex contraction was the earliest sign of hip disease and, second, that, so long as it persisted, treatment of the joint could not be safely discontinued—views generally, if not universally, accepted by American orthopædic surgeons.

Dr. R. Whitman agreed to the now commonly accepted view of the diagnostic significance of the reflex muscular spasm of hip disease. He thought that muscular spasm in convalescence corresponded to the acuteness rather than the area of the intra-articular process and called for absolute restriction of motion, in addition to protective, for the completion of resolution.

The chairman (Dr. A. B. Judson) said that John Hunter had noticed the peculiar action of the muscles in joint disease. He said (1786): "Stiffness of the joint depends on the involuntary contraction of the muscles. . . . I think this arises from sympathy, or a consciousness of the parts being unable to answer to the action of the muscles, and it comes nearest to human reason of anything in the body." The words "on guard" (H. G. Davis) and the graphic expression "vigilance musculaire" (Verneuil) had been applied to the watchful attitude of the muscles in joint disease. Though present in other diseased joints, reflex muscular action was seen best in the hip, because the hip, being a ball-and-socket joint, depended more than any other kind of joint on its muscular system for both motion and stability. For this reason reflex muscular contraction was of great importance in the diagnosis of the earliest stage of hip disease when the lameness was inconstant, the atrophy equivocal, and the pain referred to the knee. It was of no less importance as a sign in convalescence.

Dr. Myers said that ten years ago he had observed five patients affected with hip disease each of whom received a number of injections of tuberculin. He had made twenty or thirty tests of the muscular spasm in each case and it was found that in the reactions caused by the injections the spasm became more alert as the temperature rose and diminished with the fall of the temperature.

Dr. Elliott said that nerve irritation at the site of the disease was reflected through the spinal cord and gave rise to the spasm of the muscle.

Dr. W. Truslow said that the fact that slowly applied and progressively increased mechanical traction completely and quickly overcame the muscular action suggested the tetanoid quality of the spasm.

Dr. F. Peterson thought that the word tonic expressed the condition of the muscles in hip disease and that the word tetanoid was not applicable. Apart from a reference to the reflex theory, the tonic spasm might be explained on the theory of an irritation of the cells of the nerves connected with the joint in the same way that the tonic spasm in muscular rheumatism, so called, of the sterno-cleido-mastoid muscles was supposed to come from irritation due to some poison affecting the nerves. Hypertonia and hypotonia of the muscles might be here considered. In locomotor ataxia hypotonia was referred to destruction of nerve fibres, and the muscles in joint disease might by some irritation be kept in a condition of settled hypertonia.

Dr. Taylor thought that tetanoid had a certain suggestiveness, but he preferred the word tonic or some one of the terms which were in general use.

Dr. Elliott thought that tetanoid better than tonic defined the character of the spasm, which was sometimes clonic.

Dr. Myers thought it probable that a similar spasm might attend non-tuberculous lesions of the bones and joints, such as partial fracture or complete fracture without displacement. He thought he had seen spasm very like that of hip disease in such cases.

Dr. Taylor said that there was nothing especially diagnostic of the tuberculous condition in tetanoid or reflex spasm, which might appear different at different stages, or in different cases of tuberculous disease, as it did in given cases of such various affections as tuberculosis, osteomyelitis, rheumatism, and synovitis, the spasm depending on the location and grade of the irritation rather than on its pathologieal origin. It would not often be found in synovitis.

Dr. Whitman said that reflex spasm as an evidence of the irritation and sensitiveness of a joint was not found in synovitis and was not restricted to tuberculous disease, although that was its most common cause.

Dr. E. D. Fisher said that these signs of hip disease could be referred to the reflex action of the spinal cord. But using the term reflex did not go far as an explanation. The cerebrum was not involved. Serious implication of the spinal cord or the nerve supply of the muscles was out of the question; but in malnutrition of the spinal cord he thought we had possibly an explanation. On this theory the whole reflex arc would be involved. Beginning with a sensory disturbance, the irritation was carried to the cord through the posterior roots, and then to the anterior horn, where it caused spinal irritation or exhaustion, if it might be called that, and atrophy. A parallel might be found in disease of the fifth nerve with reflex irritation of the seventh, causing spasm of the face, in which removal of the cause of irritation in the nerve or the ganglion relieved not only the pain but the spasm. The term reflex conveyed little or no explanation unless it became part of some coherent plan the result of reasoning and fortified by post-mortem examination. He recalled a case of ankylosis of the knee and atrophy, the result of an injury at the age of seven. After the patient's death, at the age of forty-one, there was found marked atrophy of the anterior horn in the segment corresponding to the knee and in the cerebral convolution controlling that part of the body. It was common to find atrophy thus localized after the loss of a member in early life. Altogether, the presence of these elements in hip-joint disease confirmed the theory of a trophic centre in the spinal cord. Wasting was common at the onset of joint disease, and the consecutive atrophy was always more rapid than after an injury to a large nerve. Recovery was also more rapid than in poliomyelitis, in which the lesion might be a destructive one.

Dr. Peterson said that the explanation by reference to the passage of an irritation to the spinal cord and its reflection along the trophic nerves to the muscles was scarcely a probable one, because irritation of trophic nerves generally gave rise, as it did in any sort of nerve, to an excess of function. In joint atrophy there was wasting away of muscles from wasting away of trophic centres or destruction of trophic fibres. Faradaic action was reduced in degree, but normal in quality. The manner of response to the faradaic and galvanic currents was normal, though the muscle was wasted. The subject was interesting because of the absence of the reaction of degeneration. In the atrophies of progressive poliomyelitis, with actual degeneration of trophic centres, there was profound reaction of degeneration. In only one other class of marked muscular atrophy was reaction of degeneration absent, the class of primary muscular dystrophies, not due to any nerve lesion, in which there was destruction of the muscular fibres, which wasted away one after the other, those left responding in a normal way. In very marked instances of this condition there was reaction to the faradaic current as in joint atrophy. Joint atrophies might be explained in a similar way, without reference to the spinal cord, on the ground that, although many of the trophic fibres coming to the muscles which moved the joint would be connected with the joint, all of them were not, and when an inflammatory process in the joint destroyed trophic fibres and produced atrophy, some of the muscular fibres were not destroyed and responded, with absence of the reaction of degeneration, as happened in progressive muscular dystrophy. In rheumatism and sciatica and other painful affections there was increased muscular excitability as shown in the knee-jerk. The response to the stroke of the tendon was, however, too rapid to allow of a trip to the spinal cord and back, and yet it was governed by spinal-cord conditions. Neither this nor the other neurological conditions found in hip-joint disease need be necessarily considered in connection with the spinal cord.

Dr. Elliott said that the novel and interesting dystrophy theory might explain the atrophies of uniarticular rheumatism and rheumatoid arthritis, which were distinct from the joint atrophy under discussion.

Dr. Whitman said that, among other contributing factors, physiological disuse was the most important and constant cause of the atrophy of joint disease, which affected all the component parts of a limb, including the bone. It increased for a time more rapidly when the symptoms were relieved by fixation of the limb. It followed fixation of the limb in splints after fracture of a bone.

Dr. Gibney said that much of the atrophy following the use of apparatus for several years was caused not only by disuse, but also by constricting bandages and appliances.

Dr. Elliott said that joint atrophy was specific and in no way related to the disuse atrophy or to that which came from bandaging.

Dr. Townsend said that disuse, which was an obvious and controlling factor of the later atrophy, played a very unimportant part in the production of the early and characteristic atrophy of joint disease, which appeared in patients confined to bed.

Dr. J. B. Bogart said that the joint atrophy of the neurologist arose from a nerve lesion, but the atrophy of orthopædic practice had a threefold origin in nerve implication, disuse, and the restraint incident to treatment.

Dr. Taylor suggested overwork as a cause of the primary atrophy. When a muscle was exercised beyond a certain point or subjected to prolonged electrical excitement, it atrophied, and the continuous localized sensory irritation of joint disease might overwork the muscles in a physiological sense through the motor centres in the spinal cord.

Dr. Fisher said that the muscular atrophy caused by overuse could be referred to spinal-cord atrophy, as was almost conclusively proved by the experiments of Hodge, who had recorded atrophy in the spinal-cord cells of pigeons which had been flying for hours.

Dr. Taylor said that in cases of diseased hip of long standing there was an interference with the circulation, with extensive atrophy affecting even the bones, which doubtless had several factors, including retarded growth of the parts affected, in addition to the early joint atrophy. Similar effects were to be seen in the wake of infantile paralysis and fracture of the femoral neck in children and in certain congenital malformations.

The chairman said that in many cases of serious disability of a lower extremity a large part of the asymmetry was due to hypertrophy of the unaffected limb from overuse.

Dr. Peterson said that the results of joint atrophy could not be confounded with those of disuse. In a shoulder joint immobilized by acute arthritis there was rapid atrophy of the muscles, which was absent from a shoulder joint immobilized in any other way. In an injury of the brain, as in apoplexy, there was disuse, but no atrophy of the muscles at all. In fracture of the femoral neck in a child one side did not grow as fast as the other. In infantile cerebral hemiplegia one side of the body did not grow as fast as the other, not from atrophy but from retardation of growth on the paralyzed side. In any serious injury of an extremity retardation of growth came from disuse or from interference with nutrition by disuse.

Dr. Shaffer said that at one time he had seen several patients with hysterical imitation of hip-joint disease under treatment for months with the long hip splint, adhesive plaster, and bandaging. In some of these cases there was muscular resistance but no atrophy. After true hip-joint disease the muscular atrophy might never wholly disappear, but the limb would do its work well. If considerable motion returned to the joint as the result of treatment, the patient would walk without a limp, and with ankylosis in a good position a most useful limb would result. In his earlier studies he had found no reference to the spasm of hip-joint disease in the then limited works on orthopædic surgery, but in Charcot's *Lectures* he had found light on the subject, and he had for many years steadfastly called attention to this interesting phase of chronic tuberculous joint disease, and, inasmuch as spasm and atrophy were not observed in chronic synovitis of the knee and ankle, he had contended that hip-joint disease, like Pott's disease, was an osteitis and not a synovitis. In his paper he had tried to indicate when apparatus might be discarded in hip-joint disease. This decision could not be rightly made until the tetanoid spasm was duly appreciated. It was not difficult to recognize it, once its peculiar characteristics were understood. He thought that the word tetanoid would sooner or later be generally considered to be applicable, or that some other word, broader than tonic and more comprehensive than reflex, would be applied by neurological students, who had here a subject well worthy their investigation, to the end that the profession might know the real value of the neuro-muscular elements in hip-joint disease and recognize that they had a distinct pathological origin.

The Late Dr. Samuel Ketch.—At a stated meeting of the medical board of the Montefiore Home for Chronic Invalids, held January 16th, the following resolution was passed regarding the death of Dr. Samuel Ketch:

The medical board of the Montefiore Home expresses profound sorrow at the death of Dr. Samuel Ketch, consulting orthopædic surgeon.

As a surgeon Dr. Ketch was skillful, clear-headed, conscientious, and able; as a man, genial, courteous, frank, and loyal.

The board records in its minutes with profound grief the death of a valued counselor, an expert surgeon, and an honest man.

[Signed.]
V. P. Gibney,
Joseph Fraenkel,
George R. Elliott.

The Fiske Fund Prize Essay.—We would call attention to the advertisement which appeared in our issue for February 10th. This year the important subject of State Control of Tuberculosis has been decided upon as the theme.

Original Communications.

RHEUMATIC GOUT.

By B. C. LOVELAND, M. D.,
SYRACUSE, N. Y.

Rheumatic gout, progressive articular rheumatism, rheumatoid arthritis, arthritis deformans, chronic inflammatory rheumatism—these names are used by different writers to describe one and the same condition; and, while it is a condition not met with quite every day by the ordinary practitioner, still, scarcely a practitioner lives who does not with his first year's work meet at least one case of this most serious and obstinate of all forms of disease based on the uric-acid diathesis.

The scope of this paper is not to cover the subject from the standpoint of the pathologist, but to give a clinical study. The pathology as found in the deadroom has been well studied, but this paper is confined to the study of the living.

Rheumatic gout might also be called painless rheumatism, but for the rare exception that occasionally people with it do suffer some pain. By this statement it will be understood that a large number of victims of this disease suffer no pain except on moving the joints affected. They feel stiff after staying a while in one position, and lame and sore on motion. They rest uneasily at night, because lying in one position very long is followed by a general aching feeling, but they do not actually suffer pain with the swollen joints, such as acute inflammatory rheumatism would produce. Neither do they have such as is often found in subacute inflammatory rheumatism.

Perhaps a description of a typical case would put the subject more plainly before us. The patient belongs to the poorly nourished or asthenic type of lithæmics. This condition may be noticed to precede rheumatic gout often for some time. The first symptoms complained of, or more frequently not complained of, are an aching, usually influenced by the weather, and a somewhat stiffened feeling in the joints, more commonly of the hands or feet. This does not mean that this form of disease is confined to the hands and feet, but it more frequently begins in these joints. The soreness on motion may be unattended with swelling at first, and possibly for months may continue so. So little is seen, and so little is complained of, that the matter is often turned off as of very slight moment, and a prognosis of good expectancy made, and possibly something to act on the liver or a few doses of some antirrheumatic remedy are given. This is not followed by any marked improvement, and the discouraged patient grows gradually worse, but worries along a few weeks or months before consulting the same physician or another. In the meantime, perhaps, he diagnosticates his own case, and tries one or two of the much-lauded rheumatic cures which are advertised in the papers. Finding no good results from these, the trouble gradually growing worse, and swelling now being noticed in some of the joints, he feels obliged to consult a physician again. By this time six months or a year may have elapsed since the patient first noticed the trouble. Now both physician and patient are satisfied that something is really the matter. The *usual rheumatic remedies* are prescribed and the patient takes them, but gets no better. Little by little, joint after joint becomes affected. There is nothing acute about this condition from the start, but its progress is chronic and insidious. It is marked, however, by exacerbations, when the joints are a little sorer than at other times; then they subside almost to what they were before, but not quite, for each one of these little exacerbations leaves a small reminder or result in the shape of increased swelling and disability. The physician is usually discouraged and the patient more so, for the patient can not see why he should not get well in a short time, as Mr. S. and Mrs. Y. have got well under much less protracted treatment, while he is gradually getting worse under the methods and means employed. As time still progresses the swelling, which up to now has been of a soft character, begins to be harder, more or less of a fibrous or possibly calcareous deposit taking place. Later, absorption of the bone to some extent takes place in such a manner that the articulating surfaces of the phalanges do not rest against the metacarpal bones in their accustomed manner, the fingers being deflected to the ulnar side of the hand. Not infrequently absorption takes place at the ends of the phalanges, especially of the first and second, in such a manner that luxations occur which allow a knuckling forward of the finger instead of backward. Luxations also occur in the thumbs. The deformity thus produced is better illustrated by the accompanying pictures than described. Figs. 1 and 2 represent the disease in its early stages; Fig. 3, the last stage, showing luxations due to absorption; Fig. 4, an X ray taken of an early-stage case, and Fig. 5 an X ray of a late stage of the disease.

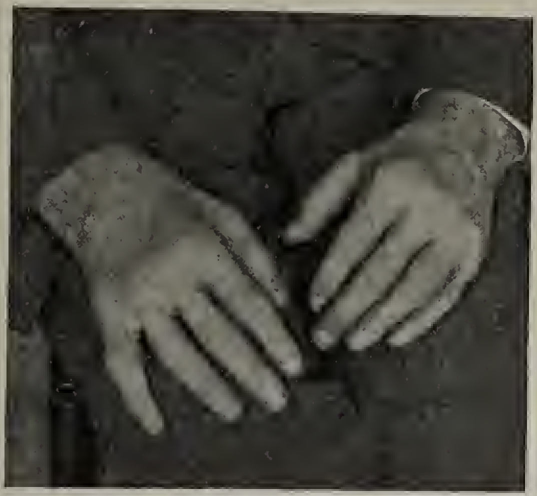


Fig. 1.—Early stage, slowly progressing.

The condition having gone thus far is very apt to progress until many, sometimes nearly all, of the joints of the body are involved. The end is that the patient becomes fastened either to the bed or the chair, and not infrequently the jaw becomes affected; he is unable to feed himself because his arms are so stiffened that he can not carry food to his mouth, and the teeth may have to be drawn in order to introduce between the jaws a tube or feeding dish from which to take his nourishment.

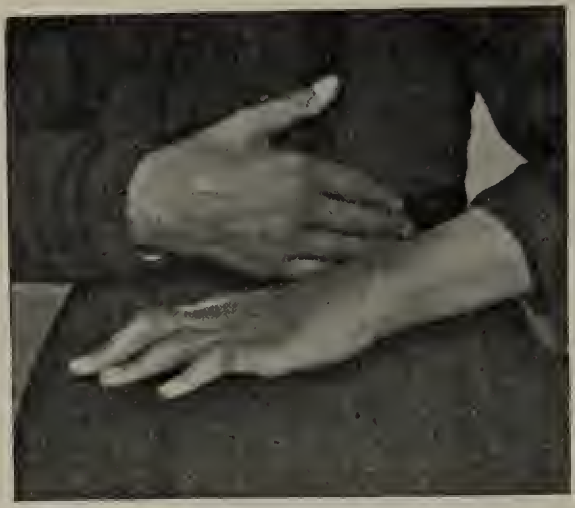


FIG. 2.—Early stage.

A similar condition to that just described is often found as the result of repeated attacks of acute inflammatory rheumatism, but is easier to overcome. Sometimes also a person will develop rheumatoid arthritis years after an acute attack of inflammatory rheumatism which may have left some remnant in the shape of stiff joints, and in these cases the history is of great importance in arriving at a diagnosis, as well as influencing our prognosis.

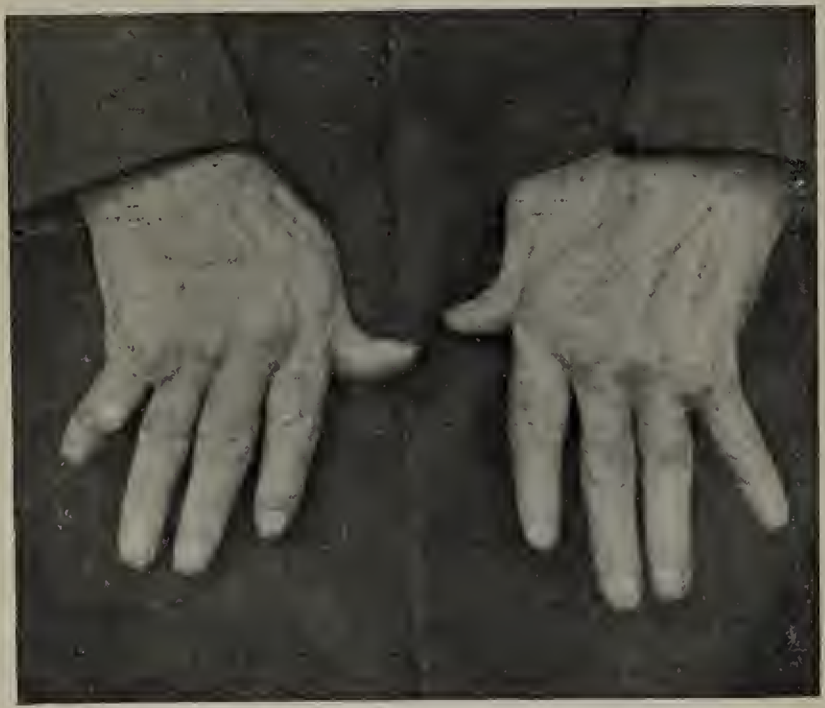


FIG. 3.—Advanced stage, with absorption and luxation.

In conversation some years ago with a physician, the question was asked, "Do you think rheumatic gout is ever cured?" The experience of the writer at that time was sufficient for him to reply, "I do, as much as anything is ever cured; but it is a slow, tedious, and protracted process." It so happened that as this conversation was in progress a patient passing the door was called in to illustrate.

He was a man of seventy or more years, who had been under management for about three years. When first seen he was so crippled as to be bent nearly to right angles—feet, hands, knees, and ankles swollen, neck stiff, and he was barely able to move slowly about with two canes. In fact, he had scarcely a joint that was free from the disease. Great disorganization of the joints of the hands and feet had taken place, the fingers were very much deflected toward the ulnar side of the hand, and there was considerable luxation of the joints of the thumb. Fig. 3 represents the hands of this patient. At the time mentioned he had so far recovered that the swelling had entirely gone from the hands, feet, and knees, and he was able to walk with one cane or no cane when he chose. He could stand up quite straight, and for nearly a year had been so much improved over his former condition that the slight exacerbations mentioned as belonging to the disorder had ceased to occur, and he had been able to walk through all sorts of weather from his house to the post office and take some other exercise outdoors during winter and summer. In fact, he does all this now, nearly four years after the conversation above quoted.

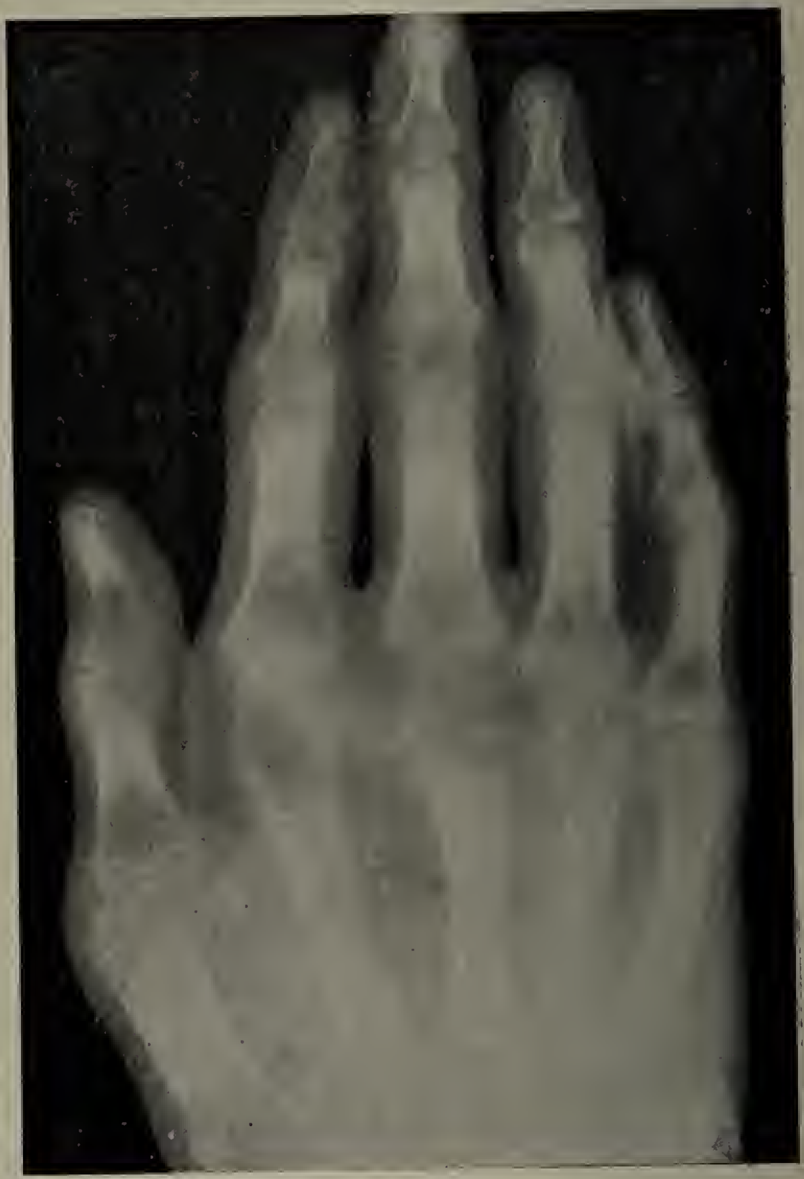


FIG. 4.—An X ray from a case in the stage of swelling and before any absorption has taken place. The indistinctness about the second phalangeal and metacarpo-phalangeal articulations is due to swelling and *not* to hard deposit, as the above-named joints were freely movable.

The contention was made that such a degree of improvement in a case where disorganization had long taken place would be equivalent to a cure in a case where no disorganization had taken place. Two cases will illustrate the latter condition—that is, rheumatic gout without disorganization, the treatment resulting in cure.

Case I.—October 24, 1895. Mrs. B., sixty-two years of age, had been suffering with rheumatic lameness in her wrists for a year or more without intermission. There was slight swelling, no pain except on bending, but considerable soreness on motion, and great weakness of the joints, so that she was unable to use her hands for needlework or writing. She also had soreness of the fingers, and at times of the ankles. The diagnosis of rheumatic gout was made by her son, who is a physician, and confirmed by myself. The treatment adopted was a diet composed of vegetables, cereals, and fruit, with the exception of strawberries, tomatoes, and sharp acids; meat once a day, fish once a day; a large amount of water, not less than three quarts in twenty-four hours. No medicine was given at first. After a week, due to a little cold or change in the weather, an exacerbation occurred, in which other joints were involved, and the joints already sore were sorer and more swollen. During this exacerbation salicylate of sodium was administered in ten-grain doses three times a day, using milk of magnesia as a menstruum. This was continued for a week or ten days, during which time her increased soreness passed off, and all medicine was discontinued except phosphate of sodium in ten-grain doses, given in a glass of hot water before each meal. The diet was rigidly insisted on. The treatments given were massage, static electricity, such tonic baths as salt, rub, cool splash bath, and such a *régime* of outdoor exercise as would increase nervous tone and assimilation. The patient left my immediate observation at the end of a month, no worse, but not materially improved, except that the slight exacerbation had passed without leaving any additional trouble. She was advised strongly to continue the diet, water, and outdoor exercise as it had been prescribed, and two months later wrote me that, while she had not felt any improvement when she left my immediate observation, she determined to be very faithful in the matter of the diet and regulations imposed, believing that I had good reason for urging her to carry them out to the letter. And now, at the end of three months from the beginning of treatment, she was glad to say that for four weeks she had been free from lameness in her wrists, though they were somewhat weak, but she was able to move them under ordinary circumstances without pain or distress, and she could write or use her needle with ease. One year later she wrote me that she had been perfectly well for the entire year, and she has had no return of the trouble up to the present.

Case II.—Miss M. W., August 2, 1893, twenty-two years of age, about in her usual flesh. She had broken down a year before consulting me with a combination of nervous exhaustion and rheumatic gout, affecting principally her knees. She limped on walking, and her knees had been slightly swollen for a year. Appetite was good, and bowels were regular, as a rule.

Blood examination showed hæmoglobin about seventy-five to eighty per cent., and red corpuscles about 6,000,000. She suffered a great deal with palpitation of the heart, irritation of the spine, and other nervous symptoms, in addition to her rheumatic aches.

In this case the diet, water, and a small amount of salicylate of sodium were continued for nearly five months. At that time she passed from observation but was much better. She returned in about a year with some nervousness and a little of her old trouble, but now, four years since I first saw her, she occasionally consults me, but with no other complaint save a little nerve tiredness due to the fact that she is trying to do a great deal socially and otherwise, so, of course, gets runs down, but her rheumatic gout is a thing of the past.

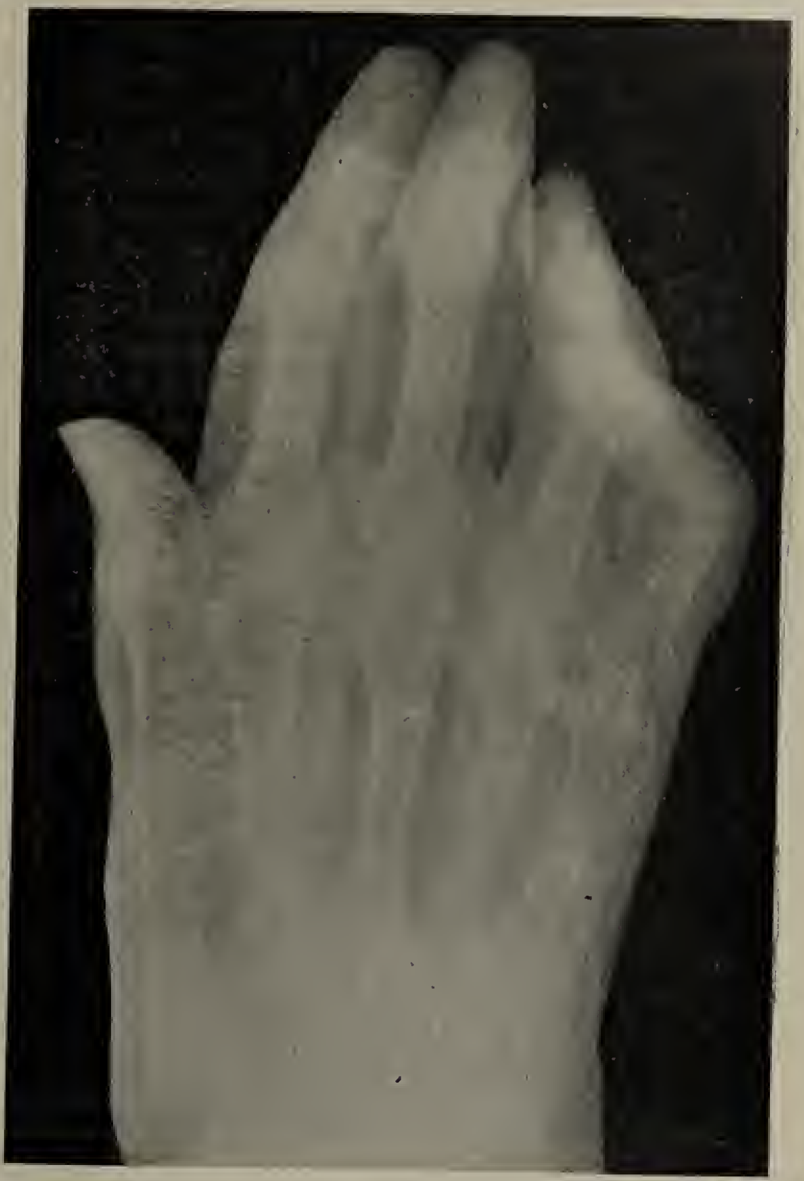


Fig. 5.—X ray from an advanced case, showing deformity. The apparent shortening of the second phalanx is a photographic effect due to the knuckling forward of the first joint and permanent knuckling backward of the second joint. Such a position is shown in Fig. 2.

In the cases under consideration it is useless to try the systems of hot bathing commonly applied at many of the *hot springs* and other famed rheumatic cures, for the patients run down rapidly under the treatment, and their last state is worse than their first.

The method most successfully employed in these cases is divided into three parts: dietary, hygienic, including hydrotherapeutic, and medical.

Dietary.—Strictly regulate diet to suit the needs of each individual case. It is impossible to prescribe a single diet which will suit all, or any great number of these cases. The patient's blood, urine, and general digestive ability should be considered, and a diet prescribed for each individual case, being very careful to avoid indigestion or acidity of the stomach, and to give such quality and quantity of food as will supply the system with the nutrition it needs, and yet not load it with useless material. An average diet of the sort might be given here, and would be somewhat as follows: Meat, once a day, possibly twice a day, in moderation, and of the lighter kinds, such as lamb, mutton, white meat of poultry, or fish, and eggs may also be used in moderation. Breadstuffs should be made of Graham, gluten, or entire wheat flour. Vegetables may be given according to the patient's ability to digest them, but it may be said that far too little attention is paid to the value of green vegetables in such cases. Green vegetables should be used freely. Potatoes, if they do not cause indigestion, the less starchy vegetables, such as squash, green peas, fresh Lima beans, and string beans may be allowed. The amount of water to be drank in a day should not be less than nine or ten glasses, or two quarts and a pint in twenty-four hours. Tea and coffee should be forbidden. Cocoa, broma, and milk may or may not be allowed, according to circumstances; stimulants of all sorts are harmful; sugar, sweetened puddings, strawberries, tomatoes, and pie plant should be avoided.

Hygienic and Hydrotherapeutic.—Exercise in the open air should be taken to the limit of the patient's ability. Acute inflammatory rheumatism we all know requires rest for the joints, but this type of disease needs exercise for the joints. Therefore exercise is helpful both as a local measure and by increasing the assimilation. The treatments best suited to this class of patients are massage, electricity, Swedish movements, packing, sweating, or counter-irritation about the joints, perhaps using iodine for the purpose; cool tonic baths freely; hot bathing with great caution, lest the patient becomes unnecessarily depleted. Occasionally a warm bath, from 90° to 92° F., may be a very great aid to the massage, helping to relax the joints; but all the treatment should be directed toward increasing the nutrition and vitality of the patient, and nothing should be allowed that causes depletion or depression. The Turkish bath is the most valuable of all the hot baths in this trouble if given with the large amount of rubbing that can be administered in connection with it, and if the patient does not stay too long in the hot room it may be a very great help.

Medicinal.—The medicines most useful are the alkalies, most prominent among which are salicylate of sodium and iodide of potassium. The salicylate of sodium combined with benzoate of sodium, five grains each, given in a glass of hot water three times a day, has a very good effect, may be continued for as long a period as necessary, three to six months, and is well tolerated by the patient, as it does not disturb the stomach as the usual doses of salicylate alone frequently do. In some cases the iodide of potassium will be of great service, while in others ordinary bicarbonate of sodium will do as well as anything can, if given in repeated doses and well diluted; but the necessity of long-continued treatment should be impressed upon the patient from the first, or failure is likely to be the result. It may be necessary to study the patient for some time before an alkali will be found which will meet the necessities of that particular case. When found, it should be continued for three months steadily, then three weeks out of four for another three or six months.

If this plan of treatment is persisted in sufficiently long, great benefit, at least, will follow, and in many cases where disorganization of the joints has not occurred, a perfect cure, not necessarily a permanent one, will result. But in our advice to our patients it must be remembered that rheumatic gout, like any other disease depending on faults of nutrition, is liable to recur if the habits that first induced it are continued.

It is well, therefore, to say that these patients must change their habit of life if they would obtain a permanent cure.

608 S. SALINA STREET.

A CASE OF
OSSIFICATION OF THE UTERUS.*

By C. JEFF. MILLER, M. D.,
NEW ORLEANS,
VISITING GYNÆCOLOGIST TO CHARITY HOSPITAL.

THE occurrence of osteomata in parts and organs of the body that have no genetic relations with the skeleton is quite rare. They usually differ very much in structure from osseous tumors connected with the skeleton. The Haversian canals are usually absent and there is a lack of uniformity in the arrangement of canaliculi. In some instances, however, the tissues present all the characteristics of normal osseous structure and are indistinguishable from the exostoses commonly met with. Specimens of heterotopic osteoma have been removed from various parts of the body.† Senn alludes to a case reported by Fleischer of an osteoma of the tendon of the ilio-psoas muscle in which the Haversian canals and medullary tissues were arranged in the same manner as normal bone. In another instance the tumor was situated upon the inner surface of the dura mater. Lesser has described an osteoma of the lung which presented all the histological elements and arrangement of normal osseous tissue. Virchow has also found in the apex of the lung an osteoma, but the Haversian canals and medullary spaces were absent.

There are two methods by which osseous tumors can be developed. The first is by simple transformation of connective tissue. According to Senn, the connective tissue at the seat of tumor formation becomes more vascular, which leads to active tissue proliferation. This proliferated tissue finally becomes transformed into hyaline masses in the interior of which bone cells develop. The hyaline lumps become coalescent and undergo calcification. The majority of osteomata are found in parts or organs abundantly supplied with connective tissue, a fact in keeping with the long-recognized capacity of such tissue to produce bone. The other method is by displacement of osteogenetic matrices into tissues having no relations with the skeleton. Senn states that such osteomata are usually found in close proximity to a bone and show imperfect development of the tumor tissue.

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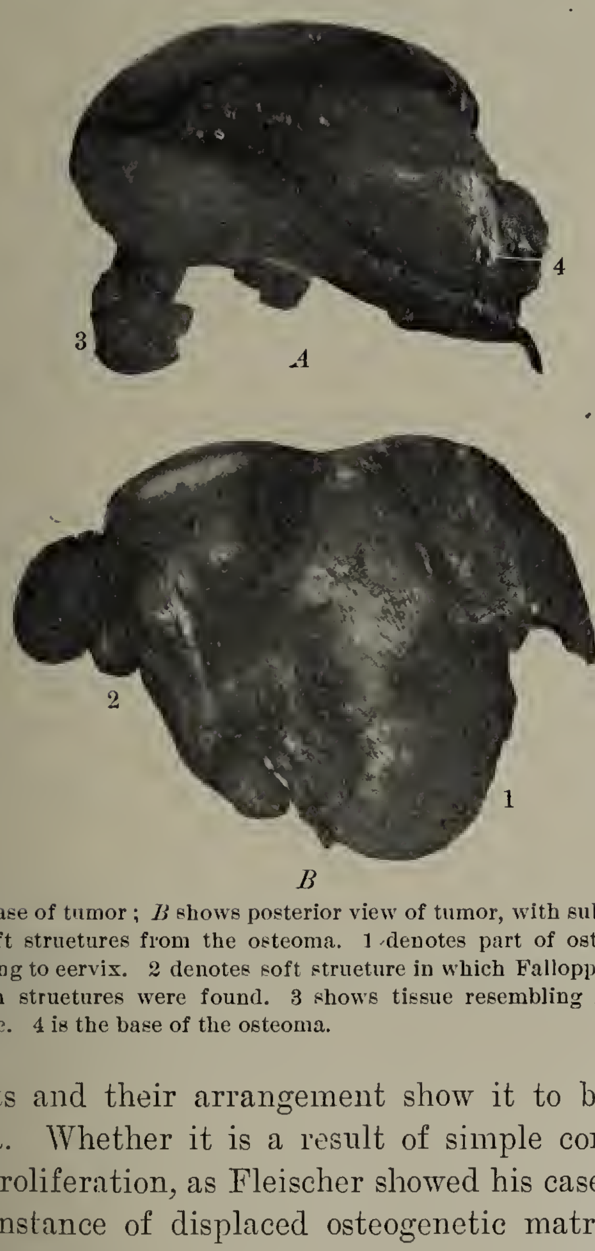
* Read before the Southern Surgical and Gynæcological Association, at New Orleans, December 5, 1899.

† Nicholas Senn. *Surgical Pathology and Treatment of Tumors.*

The specimen presented with this report is not an instance of simple calcification. All the histological elements and their arrangement show it to be a true osteoma. Whether it is a result of simple connective-tissue proliferation, as Fleischer showed his cases to be,* or an instance of displaced osteogenetic matrices, has not been decided. Its close proximity to the sacrum would favor somewhat the theory of displaced mesoblastic cells. On the other hand, it was situated in parts abundantly supplied with connective tissue, and the intense congestion incident upon the attempt of Nature to establish the menstrual functions certainly furnished the increased vascularity mentioned by Fleischer as the primary step in the formation of osteomata from connective tissue. A thorough review of the *Index-Catalogue of the Library of the Surgeon-General's Office* and the *Index Medicus* shows that six cases of ossification of the uterus have been reported—the first in 1759, the last in 1852.



A shows base of tumor; *B* shows posterior view of tumor, with sulcus dividing the soft structures from the osteoma. 1 denotes part of osteoma corresponding to cervix. 2 denotes soft structure in which Falloppian tube and ovarian structures were found. 3 shows tissue resembling ill-developed fimbriæ. 4 is the base of the osteoma.

The case upon which this report is based occurred in the private surgical work of Dr. Ernest S. Lewis, whom I assisted at the time:

A girl, sixteen years and six months old, of robust appearance and unusual development for her age, was brought by her mother to consult Dr. Lewis in reference to the nature of occasional severe paroxysms of pain in the hypogastric region and the cause of delay in the establishment of the menstrual functions. She was an active girl, who had spent her life in the country, enjoying all the benefits of outdoor life and hearty exercise. Until the time arrived for the establishment of her menses her health had been perfect. When about fourteen years of age, however, she began to experience the usual unpleasant phenomena constituting the monthly molimen—viz., headache, backache, a feeling of weight in the pelvic viscera, and general nervous excitement. These nervous phenomena gradually increased in severity and recurrence, partly, perhaps, on account of the rapidly developing plethoric state, which was quite marked. The duration of pain also increased from the few days experienced in each month to almost a constant aching and weight in the lower abdomen. Backache had been especially annoying. It was described as a boring, pressing pain, which radiated down the thighs and was aggravated by physical exertion. There had been no disturbance of the bladder or bowels. The history of the case, in conjunction with the unusually good physical condition, strongly suggested some obstruction in the genital canal. The periodicity of the pain, lasting a regular number of days, followed by a state of rest and comparative ease, pointed to either hæmatocolpos or hæmatometra. Upon attempting to make a vaginal examination it was found that either atresia of the introitus vaginæ existed or that the vagina was absent. The vulva appeared normal, though the labia majora and minora were much below the average in size and seemed to be flattened out. The vestibule was shallow and narrow, but the mons Veneris was provided with the normal growth of hair. A rectal examination disclosed the entire absence of the vagina and also the rudimentary cord of connective tissue usually found in such cases denoting the line of faulty development. High in the pelvis, however, a mass somewhat larger than the normal uterus was detected, which presented some peculiar characteristics. One portion of the mass was of oblong shape and unusually hard, while the other seemed about the consistence of soft myomatous tissue. No collection of retained menstrual fluids could be detected. Dr. Lewis advised the establishment of a vagina and exploration of the pelvis, hoping thereby to find the uterus and complete the genital canal. This he attempted, but after dissecting through the perineal tissues the depth of four or five inches the parts presented such anomalies that further interference by this route was abandoned. It was then decided to make an exploratory laparotomy, but, as the patient had not been prepared for section, the newly formed vagina was packed with gauze and preparations for further procedure made during the following three days. The abdomen was then opened and the pelvis explored. Occupying the site of the uterus and appendages was an anomalous mass considerably larger than the normal structures, entirely enveloped in peritonæum and attached by broad-ligament support only on one side. The position of the tumor was slightly higher in the pelvis than the normal uterus. It was not firmly attached by its supports but possessed a certain degree of mobility, much less than that allowed by the normal ligaments. A thorough examination of the growth failed to show either ovaries or uterus, and it was decided to remove it entirely. This was accomplished without great difficulty by tying off in mass the short fold of broad-ligament tissue which secured it. The parts were exceptionally vascular and presented some bleeding points rather tedious to deal with. The post-operative history was uneventful. The abdomen was closed without drainage, and she rapidly recovered.

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* Senn, *op. cit.*

A macroscopical examination of the tumor soon after its removal showed it to be quite an interesting specimen. Whether it was a tumor involving the uterus and appendages or a congenital malformation of these organs, as in the instance of the vagina, was difficult to decide.

The mass weighed a hundred and sixty-eight grammes. Its general outline was irregularly triangular or pear-shape, the base being directed upward and measuring three inches and a half. The length was slightly over three inches and a half. The thickness varied from an inch to an inch and three quarters. A smooth peritoneal fold inclosed the entire surface except along the right side, where its attachments had been severed. A slight sulcus, running vertically a little to the right of the median line, divided the mass into two unequal parts, the left being the larger and composed principally of connective and fibrous tissue and numerous blood-vessels. In the left corner near the base a cavity containing about an ounce of a grumous fluid was found. Its walls were smooth and had the glistening appearance of serous membrane. Upon the outer border of the wall of this cavity appears a short round stump of dense fibres, which terminates in a tissue resembling tubules or ill-developed fimbriæ. Another thick fibrous mass winds along the lower wall of the cavity and resembles an inflamed Falloppian tube doubled upon itself. To the right of the cavity, and separated from it by a fibrous wall, was found an osseous tumor imbedded in the mass and enveloped in a thin, tough fibrous capsule. The dimensions of this pear-shaped tumor are almost identical with those of the normal uterus—viz., two inches and three quarters in length, two inches and an eighth in width, and an inch and an eighth thick. The smaller end, or that part of the bony structure corresponding to the cervix, was composed of a liver-colored tissue, which cut easily, but was quite tough and seemed to lose itself in the bone substance proper. The osteoma was not considered bone when first removed. The appearance of the structure led Dr. Lewis to believe that the growth was a specimen of congenitally displaced kidney in which a large calculus had formed. The specimen was presented to Dr. O. L. Pothier, pathologist of Charity Hospital, who made a microscopical study of the soft structures. He failed to find kidney structure, but found ovarian, Falloppian-tube, and loose connective tissue, together with abundant blood-vessels. This disposed of the supposition that the growth was a kidney with a calcareous deposit in it; but, still believing the hard mass to be a stone connected with the urinary tract, it was then considered a product of the remains of Gärtner's duct or the Wolffian body in the broad ligament. A review of the literature upon this subject revealed various instances of calculi found in the uterus, Falloppian tube, and broad ligaments, the uterus being the most frequent site. The supposed stone was submitted to Dr. Otto Lerch, assistant to the chair of chemistry, Tulane Medical Department, for a chemical examination, in order to determine whether it was a product of the urinary tract or a case of calcareous degeneration of some organ or tumor. It was found to be composed throughout of compact bone structure which, when decalcified and examined microscopically, proved to be an osteoma presenting all the histological elements and arrangement of normal bone. The point of special interest in regard to the tumor is its origin and the tissues possibly involved. Whether it is simply a growth resulting from metamorphosis of connective tissue or some organ or displacement of osteogenetic matrices has not been positively determined. The vagina was entirely absent and the ovarian and Falloppian-tube structure not recognizable without the aid of the microscope. Whether the uterus *alone* developed and underwent these changes is difficult to decide, but the position of the growth, its dimensions, and exact resemblance to that organ gives every reason to believe it to be ossification of the uterus.

1719 Jackson Avenue.

A PARTIAL STUDY OF A CHILD PRESENTING MULTIPLE DEFORMITIES,

WITH PRESENTATION OF SPECIMENS.*

By GEORGE R. ELLIOTT, M. D.

[A preliminary neurological communication by Dr. Joseph Fraenkel and Dr. B. Onuf (Onufrowicz).]

The subject of the present communication is a child, aged seven years, presenting multiple deformities of the extremities.

These deformities were double drop-wrist, double drop-foot, subluxation of the left hip joint, and a forward dislocation of the right radius.

At the age of four years, in September, 1895, Ida S. was admitted to the wards of the Montefiore Home for Chronic Invalids. Family history negative. One child died after an attack of measles. Patient born at full term; no artificial aid; said to have had convulsions at times of an indefinite nature. Child did not move her hands immediately after birth; never walked nor talked.

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* Read before the American Orthopædic Association at its thirteenth annual meeting, New York, June 2, 1899.

Status.—Weight, twenty-nine pounds and a half; length, eighty-four centimetres and a half; well nourished.

Right and left wrist-drop; right and left foot-drop; no contractures of upper extremity. Feet in double talipes equinus, right foot showing some varus. Upper extremity flabby; motility of shoulder joints normal; motility of right elbow joint limited to passive movements; can not be flexed beyond a right angle. Extension of right forearm, ninety degrees; left, a hundred and fifty degrees. When forearms are raised and hands left to gravity, both assume the characteristic drop-wrist position; can extend fingers. When asked to grasp an object, she takes it between the index and middle fingers; seems unable to raise the thumb. This applies chiefly to the right hand, which she constantly favors.

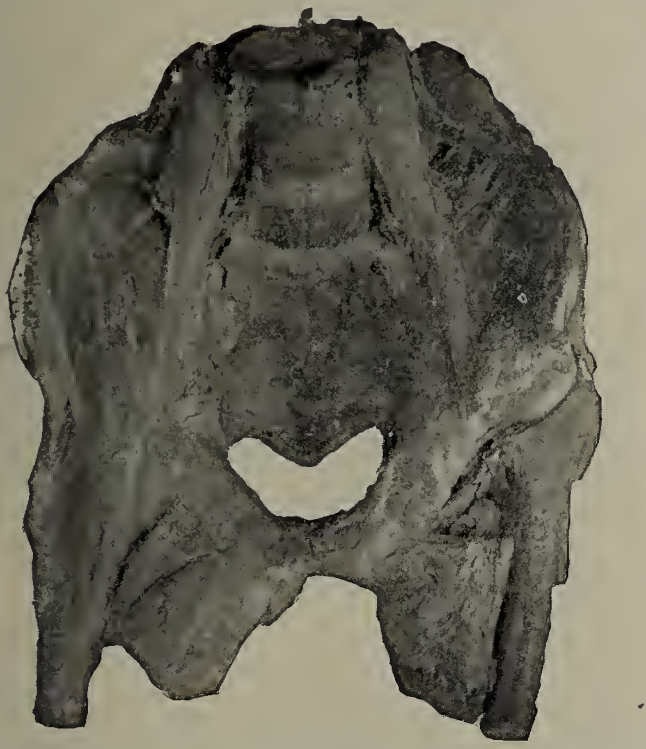
FIG. 1.—Photograph of pelvis of patient, partially dissected, showing dislocated hip (left).

Lower extremity: In addition to the double drop-foot alluded to, there is considerable shortening of left leg; there is a depression in left buttock. When child is held and attempts to walk, two things are apparent—a prominent lumbar lordosis and raising the thigh without corresponding movements in leg and foot. Sensibility normal.

Head: Motility normal; circumference, forty-eight centimetres; symmetrical, no abnormal depressions or elevations; palate asymmetrical. Intelligence fairly good; recognizes well; emotions explosive; some difficulty in talking.

Chest and abdomen: Configuration apparently normal and vegetative organs apparently normal.

March, 1897, nearly two years after examination, there is very marked improvement of speech—child now talks very well.

All joints are free from muscular spasticities. Flexion and extension of wrists gone; some flexion and extension of fingers, excepting the index of right side. Absence of supination in right forearm; does not use thumbs; can spread fingers and extend terminal phalanges.

Electrical examination: Flexors and extensors of wrist do not respond to faradaic or galvanic stimulus. Some diminution of faradaic and galvanic response in muscles of lower extremity—in the peroneal groups apparently total loss.

All joints of body excepting those mentioned are apparently normal and do not manifest any signs of laxity of ligaments.

January, 1897, I corrected the right equino-varus by tenotomy and manipulation, and in a few weeks the child walked fairly well, the peculiar gait incident to the dislocated hip alone remaining.

Patient died June 1, 1897, of diphtheria.

The specimens I wish to direct attention to chiefly are the forearm and hand of the right side, the pelvis showing the dislocated hip contrasting with normal right hip, together with a preliminary communication of histopathological findings of brain and spinal cord by my colleagues, Dr. Joseph Fraenkel and Dr. B. Onuf (Onufrowicz).

Right forearm and hand: There is a subluxation of the head of the radius forward. The orbicular ligament is not ruptured, but appears stretched similar to that of the left subluxated hip to be mentioned later. The head of the radius rests upon the coronoid process of the ulna.

MUSCLES: *Anterior Brachial Region; Superficial Layer.*—Palmaris longus absent. This is frequently absent normally.

Pronator radii teres, flexor carpi radialis, and flexor carpi ulnaris all fairly well developed.

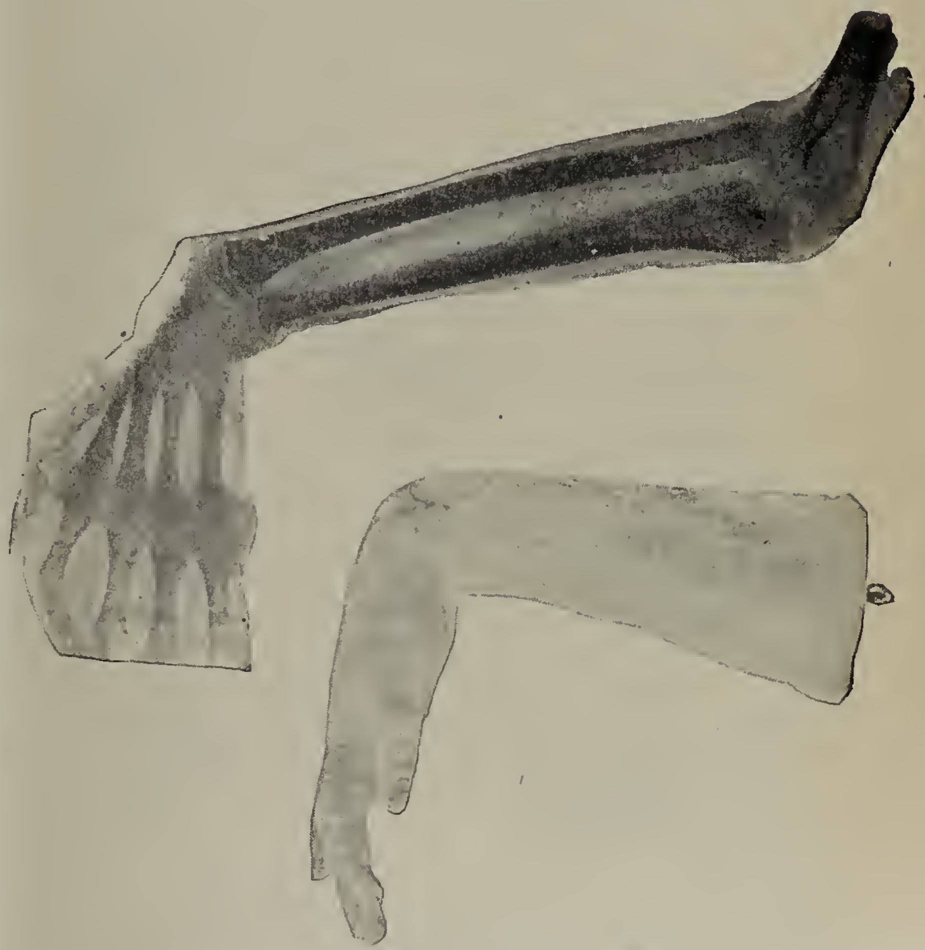
FIG. 2.—Photograph of plaster cast of portion of right forearm and hand; also radiograph, made by Waite and Bartlett Manufacturing Company, of partially dissected right forearm and hand.

Flexor sublimis digitorum: The ulnar half of this muscle sending tendons to ring and little fingers atrophic, but not showing fatty change; radial half of muscle is composed of fat; apparently no muscular fibres remain. The original contour of this part of the muscle, now entirely fatty, is clearly defined.

Anterior Brachial Region; Deep Layer.—Flexor profundus digitorum markedly atrophic and fatty. The fatty change increases from ulnar to radial side. The ulnar quarter sending its tendon to the ring finger is quite muscular, the second quarter less so, the third containing very few muscular fibres, while the fourth, or that connecting with the index finger, is almost entirely composed of fat.

Flexor longus pollicis entirely converted into fat.

Pronator quadratus muscle is apparently normal.

Radial Region.—In place of supinator longus is found nothing but a tendinous band.

Extensor carpi radialis longior contains a few muscular fibres but is chiefly tendinous.

Extensor carpi radialis brevior is fairly well developed.

Posterior Brachial Region; Superficial Layer.—Extensor communis digitorum, extensor carpi ulnaris, and extensor minimi digiti small, but present no apparent fatty change.

Deep Layer.—Supinator brevis, extensor ossis metacarpi pollicis, extensor secundi internodii pollicis, and extensor indicis small, but absolutely free of fatty infiltration.

The extensor primi internodii is wanting.

In short, then, it is the flexor groups of muscles that we find converted into fat; while the extensors, on the contrary, show nothing of this wholesale fatty change, but exist as small, well-defined muscles.

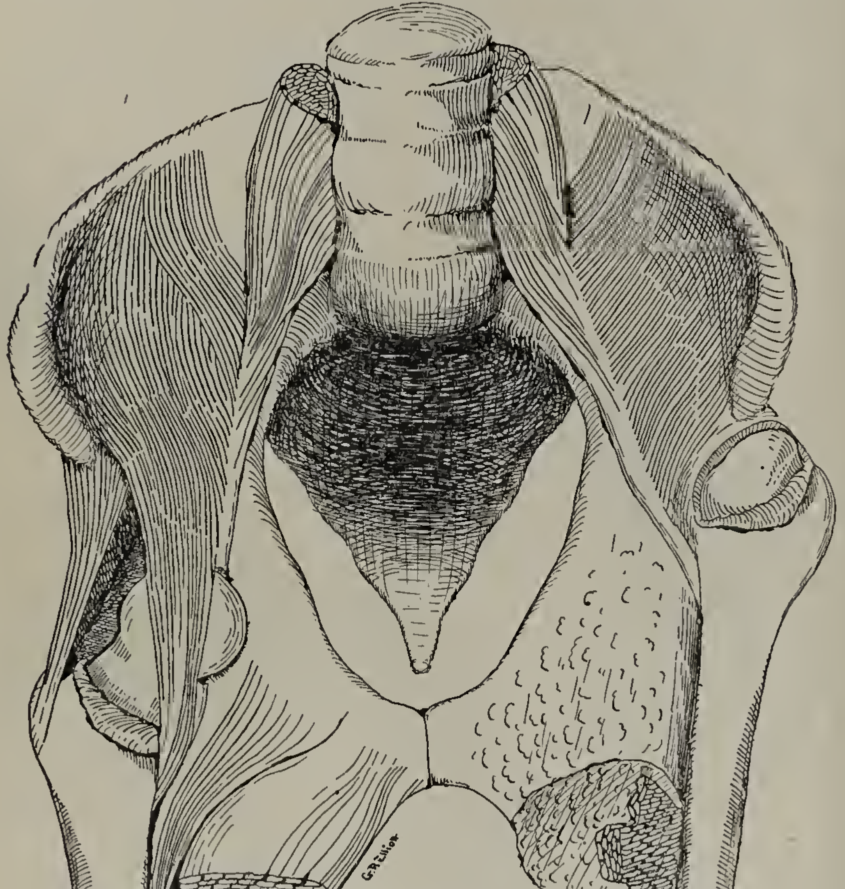

Fig. 3.—Drawing made from specimen as shown in photograph, showing site of dislocated left hip as compared with normal right hip; also fatty adductor group (left) contrasting with normal right.

Wrist: Carpal bones present (see Fig. 2).

Hand: Of the intrinsic muscles, those of the thumb are chiefly at fault.

All the thumb muscles are absent except flexor brevis pollicis, which is fairly well developed. The muscles of the hypothenar eminence, on the contrary, are all preserved.

The lumbricales appear normal and well developed.

Dorsal interossei are present; first and second small, but showing no fatty change; third and fourth well developed.

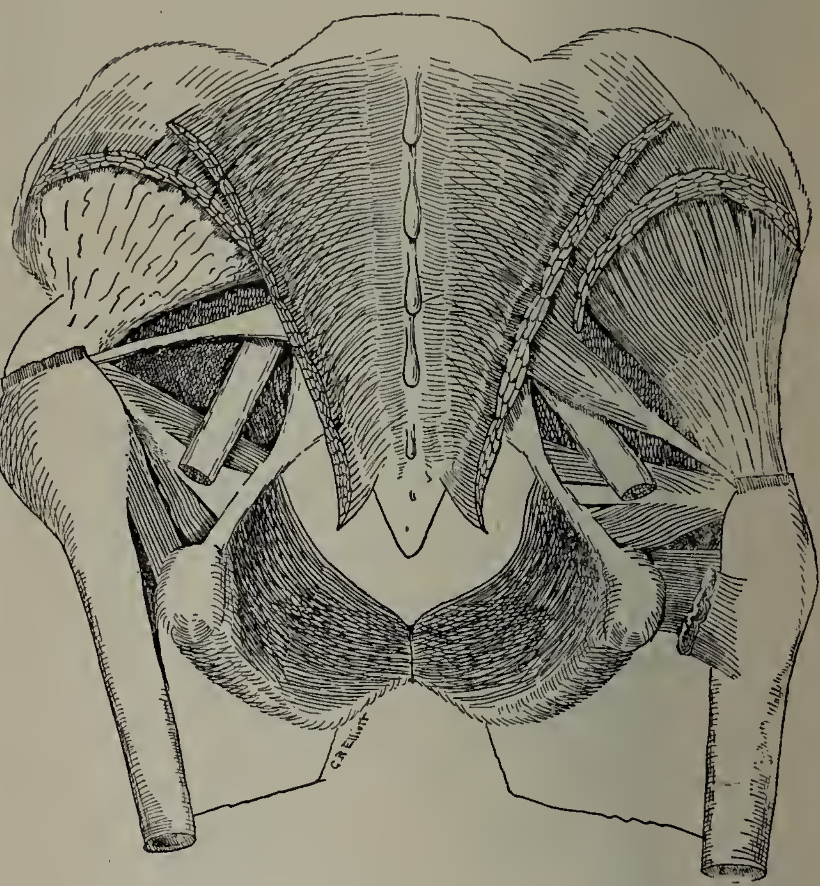

Fig. 4.—Accurate drawing of posterior view of pelvis of specimen, showing different levels of the two femur heads with muscular displacement; fatty glutæus minimus of left side and tendinous pyriformis muscle of left side.

There is a subluxation of the left hip upward and forward. Capsule is found intact and thickened, forming, together with a depression made in the ilium, a cavity for the head of the femur (see Fig. 5, accurately drawn).

The old acetabulum is well defined, measuring two centimetres in diameter; that of the right, or normal, measures two centimetres and a half.

The old acetabular surface is covered with cartilage and its cavity filled largely with a very much hypertrophied ligamentum teres (see Fig. 5).

This ligamentum teres is four centimetres long, a centimetre and a quarter wide, and four millimetres thick. Head of femur is reduced in size, measuring two centimetres in diameter, covered with normal cartilage. The right head is two centimetres and a half in diameter. Neck of femur is considerably shortened.

Both trochanters are well developed. Shaft of femur, at a distance of six centimetres from small trochanter, measures one centimetre in diameter; right, a centimetre and a quarter.

Muscles.—The gluteal group is somewhat atrophic and contracted on side of deformity, showing fatty and fibrous changes. The chief changes, however, in this group are found in the glutæus minimus, which is apparently fatty.

The pyriformis muscle is converted into a fibrous band (see Fig. 4). It is in the adductor group that we find the greatest muscular changes about the hip.

Of this group, the inner two thirds of the adductores longus and brevis are fatty, apparently containing no muscular fibres; the outer third is muscular.

The inner half of the adductor magnus is fatty, the outer half muscular.

The biceps and semitendinosus muscles are but slightly involved. The other muscles about the joint are contracted and displaced (see Fig. 4), in keeping with the dislocation, but show no fatty infiltration.

A study of the changes in the central nervous system is being made by my colleagues, Dr. Joseph Fraenkel and Dr. B. Onuf (Onufrowicz), and at present I am prepared to present only a preliminary communication of their findings.

Child died of a gangrenous diphtheria. Autopsy made twelve hours after death, during the hot season, which fact caused post-mortem changes marked enough to exclude the possibility of studying the finer changes in the chromatic structures of the nerve cells. However, the atrophic changes were distinct enough to be utilized.

The brain and spinal cord were first put in ninety-five-per-cent. alcohol, but being rather soft it was found necessary to put them, after twenty-four hours, into Müller's fluid.

The parts examined were the spinal cord, some of the anterior spinal nerve roots, medulla, and cerebral axis up to the anterior corpora quadrigemina, and the cerebral cortex of the precuneus, the paracentral lobe, Broca's convolution, various portions of the anterior and posterior cerebral convolutions, cerebellar cortex, and portions of muscles of upper and lower extremities.

Examination of spinal cord showed cellular changes of the atrophic order, together with decided alterations of the blood-vessels and neuroglia. The changes affected apparently only the gray matter, the alteration found in the white substance being slight and evidently secondary.

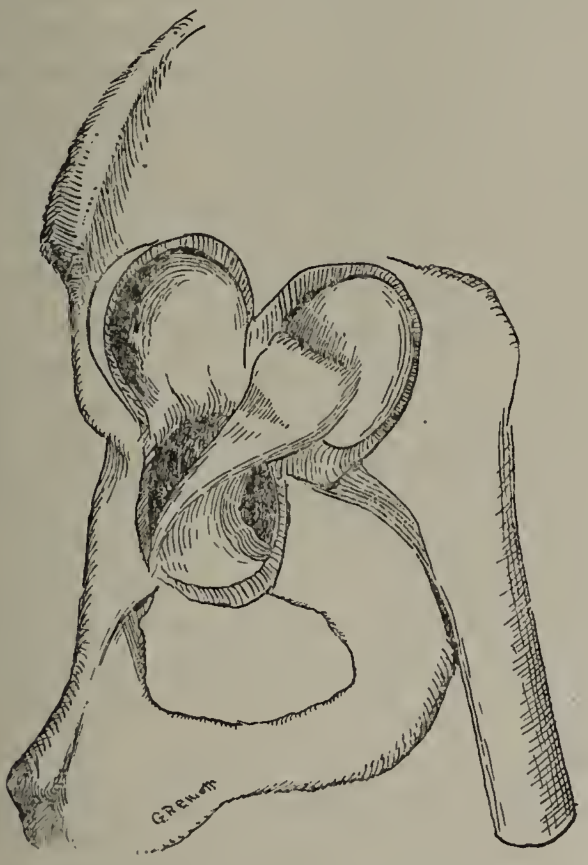

FIG. 5.—Accurate drawing of left dislocated hip of specimen, showing hypertrophied ligamentum teres, old well-preserved acetabular site, new acetabular site, and shortened femur neck.

The parts chiefly affected were the anterior horns. Clarke's column appeared normal throughout the spinal cord.

The anterior horn changes could be found throughout the entire length, but while very slight in some regions they were marked in others. In the lumbo-sacral region certain cell groups, for instance, showed an exquisite atrophy, while others were normal. The atrophy increased from the second lumbar segment distad, confined chiefly to antero-lateral cell group. There was no total destruction of cell groups.

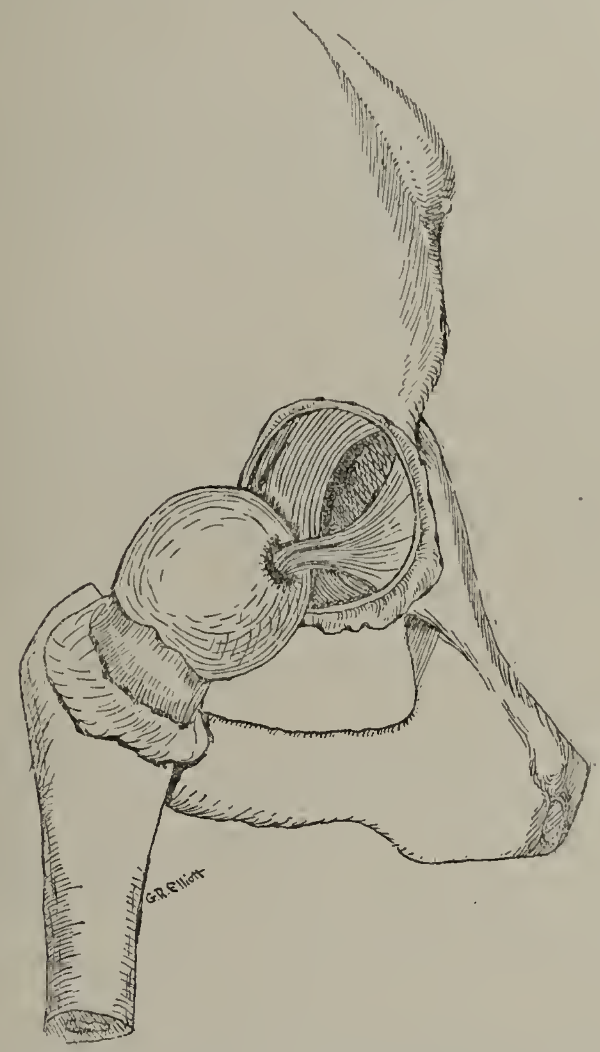

FIG. 6.—Right hip of specimen, showing normal ligamentum teres.

In the sacral cord the changes were more marked. In the second sacral segment the post-post-lateral group had almost entirely disappeared. Again, the lower cervical segments showed much more intense alterations than the upper cervical region.

While it seemed at first doubtful whether many of the cellular changes might not be artifacts, the good condition of the cells of Clarke's column and of the cranial nerve nuclei in the medulla and cerebral axis spoke decidedly against this view. A certain amount of shrinkage resulting from post-mortem artifacts can not be excluded. We may add that the cord changes are not the striking changes of poliomyelitis as we are accustomed to see them.

The exact segmental examination of the cervical cord is still incomplete.

Left Anterior Nerve Roots.—Fifth lumbar: Degeneration marked. One sees well-stained fibres, but this well-stained part is not more than one fifth of the total, the balance being markedly sclerotic. The blood-vessel walls show decided thickening.

Third sacral: Degeneration marked. First dorsal and first lumbar show slight changes. No other nerve roots at present examined.

Brain.—Certain parts of the motor cerebral cortex show changes.

It may be especially noted that Broca's centre is normal, and here we recall the clinical fact that the speech disturbances manifested by patient were of the dysarthrial rather than of the aphasic order.

Left anterior central convolution: Large pyramidal cells of middle portion show slight changes.

Left post-central convolution: Decided alteration of large pyramidal cells, which are elongated, twisted with corkscrew apex processes. The changes are chiefly in axial part of convolution. The above changes are confined to middle portion of the convolution.

Left anterior central convolution: The inferior portion shows little or no change, while the inferior part of the left post-central convolution shows slight changes in the polymorphous layer.

The brain-cell changes alluded to above did not seem primary.

A detailed account of central nerve findings will be published later, after Dr. Fraenkel and Dr. Onuf have completed their exhaustive examination, when they will express their final views. Their preliminary communication will suffice for the present object of the paper, dealt with chiefly from an orthopædic standpoint.

What, then, was the primary difficulty with this child?

In reviewing the literature I have been unable to find a case reported showing the multiplicity of deformities like the one in question. Kirmisson, in his recent excellent work on *Maladies chirurgicales d'origine congénitale*, 1898, while he relates cases with multiple deformities, does not refer to one of just this type.

I think it can be safely stated that if we reason from the hip findings in our patient we are not dealing with a true congenital type of hip dislocation.

The question may be asked, Are we not dealing with some well-known type of degenerative nervous disease—a progressive muscular atrophy or dystrophy? To this the answer is unqualifiedly No.

Of the well-defined degenerative types of muscular atrophy only one could be thought of in considering the case in question. I refer to the Charcot-Marie type, and this, so far as we know, while probably having a central anterior horn origin, begins in the legs and presents a clinical picture that excludes the subject of this paper.

Regarding dystrophies, the clinical history already detailed bears no resemblance to any of the accepted types of progressive muscular dystrophies known to-day.

THEORY OF ARREST OF DEVELOPMENT.—There seems no valid reason for accepting this theory to account for the deformities. There is no arrest of development, strictly speaking. We have atrophy and the evidence of disuse. The joints are all present and well developed. Let me refer to the acetabulum of the subluxated hip. The acetabulum is developed, and there is no reason why it should not be developed. Much has been written regarding cessation of acetabular development in congenital hip dislocation owing to disuse. Professor Lorenz lays great stress on the development of the acetabulum when the head of the femur has been replaced. We do not wish to deny that such development is favored after reposition; in fact, I believe I have observed it in my own cases. But in the present case we know that the acetabulum has not been in use since late fœtal life or very early infancy, yet note how well it is developed (see Fig. 5).

We need not look far for a physiological reason. A muscle atrophies from disuse, owing to a clearly defined physiological law. The acetabulum, unlike the muscle, plays a more or less passive part. If its three centres of ossification exist, development will go on in spite of its not being called upon to play its receptive part.

An explanation of our findings in the case under consideration will be found, I believe, in following out one or both of the following theories:

1. Vicious attitudes during intra-uterine life, chiefly of traumatic origin.
2. Primitive alteration of the central nervous system. The clinical evidence and post-mortem findings support chiefly the nervous theory.

Let us see. Entire muscles are converted into fat. Two thirds of the left adductor group are wanting. We find muscular fibres replaced by fat. Right here is to be found the explanation of the subluxated hip upward and forward, and not, as usually found, on the dorsum ilii. With the adductor group paralyzed a very slight traumatism would produce subluxation. The very large ligamentum teres attracts our attention. As a rule, in congenital dislocation of the hip this ligament, at the age of three or four years, is reduced to a mere ribbon or has disappeared. In the usual dislocation on the dorsum ilii the disappearance of the ligament might be explained on the ground that it had no function to perform, and was compressed closely between the margin of the acetabulum and the femur. In the specimen under consideration, however, the displacement having been directly upward, I offer as an explanation for the large size of the ligament its sustaining the weight of the trunk at every step in walking. Its great size, then, is physiological rather than pathological. There is nothing else about the hip that could not arise from the new position and disuse.

Entire muscles are absent in the forearm, their fibres replaced by fat, with original muscle outline preserved. The superficial and deep flexor groups are largely fatty. The flexor longus pollicis, too, stands out a mass of fat.

On the other hand, certain flexor muscles, like the entire extensor group, have undergone no fatty change. With the complete drop-wrist the extensors certainly have not been called upon to do work. They are small, to be sure, but show apparently nothing beyond the usual homogeneous atrophy of disuse. If flexor groups above mentioned are fatty through disuse, why not all the flexors? Why have some escaped—and these presenting only the small configuration of the extensors? It is impossible to conceive of the total fatty transformation of singled-out muscles, as here, being due to anything but a central cause.

Further, supination was absolutely impossible, yet the supinator brevis muscle is fairly well preserved. It appears like the other muscles that are small but not fatty, and speaks conclusively against the theory of disuse.

At this stage, with such positive findings, it may be asked, Why not settle it at once by telling us whether or not commensurate central changes exist? To this I reply, the preliminary communication of Dr. Fraenkel and Dr. Onuf, already referred to, does not detail alterations marked like those of poliomyelitis. Great care in staining was required to bring out the changes. Changes do exist, however—changes allied to those found in certain cases reported by Courtillier—and warrant the statement that they are primary central nerve-cell changes rather than the secondary degenerations of Gudden. We believe the completed study of Dr. Fraenkel and Dr. Onuf will fully confirm this statement.

The clinical picture points to a prenatal origin. Our patient came into the world deformed, and deformed as to all her members, excluding the subluxations referred to, which may have been postnatal. But the primitive cause, we reiterate, began in her mother's womb.

When we come to search the literature in this embryonic field, touching upon *pure pathology* of the central nervous system, we strike a desert more arid than any known to man, for it is without even its oasis.

Nine months *in utero*—a long formative period for a brief earthly existence—subjected to multitudinous maternal impressions and countless toxines, is there one who is not struck with amazement at the goodly number of healthy subjects among our firstborn?

Neuropathologists have neglected this field in their exhaustive studies of cords and nerves of old fellows who have run the gamut of life, disputing with each other the question of chronic inflammation or degeneration, and differing as to the definition of either term. Add to this the volumes written on the great ætiological discussion whether it is syphilis or bodily excesses, and up to the present time it is clear why the formative period of man *in utero* has been neglected.

Until more work has been done in this field—after the preceding objective study of peripheral and central findings, after the establishment of mechanical and central reasons for the deformities, in order to reach a strictly prenatal cause—we are compelled to launch into speculation and venture to enlarge upon a theory proposed by Courtillier in his studies upon intra-uterine life, and say that a toxine, selective in character, affected certain central nuclei. Muscles weakened in consequence were not able to rebound from a forced intra-uterine position. The central disturbance, then, plus the disuse favored by the real intra-uterine position, we believe suffices to explain the multiplicity of deformities manifested by our little patient.

48 East Twenty-sixth Street.

TYPHOID FEVER:

A STUDY IN HYGIENIC, OR PHYSIOLOGICAL, TREATMENT, INCLUDING PHYSIOLOGICAL DIET.

By CHARLES E. PAGE, M.D.,
BOSTON.

Some years ago a young man became ill; he was feverish, had some degree of nausea, lost his appetite, and felt generally uncomfortable. Like about all ailing persons, he was the victim of errors in living habits, overeating, overclothing, etc., and was in a condition demanding a brief therapeutic fast, some appropriate hydrotherapeutic treatment, and a little time to secure convalescence and complete recovery. But, in spite of the clear indications for this line of treatment, the overtaxed stomach was given no rest; forced feeding increased the fever, and antipyretic drugs were employed to reduce the temperature, and, naturally, all the bad symptoms were increased in severity and others were added from day to day until the lad became very sick. The same methods were continued, and, with varying experiences from day to day and week to week, his disease grew worse. He was the son of very wealthy parents, multi-millionaires; but in my belief he would have been treated in the same way had he been a pauper and an outcast. The physicians were of the highest repute; they were honest, kind, faithful, and they did the best they knew along the most regular lines, watching over this poor lad, hoping to "cure" his disease. But, as happens in about fifty thousand similar cases in this country every year, they buried their distinguished patient—"typhoid fever!"

Of course, the parents of the dear boy were as ignorant as the physicians, and they saw only the tender care with which their son was treated, and, in full faith that everything that human skill could do to save their boy had been done, they straightway began to endow a hospital with part of their millions. They increased their donations from year to year until the amount has reached a fabulous sum, practically the entire fortune of one of the wealthiest families in the world.

There are some dozens of regular physicians in this country, and some scores of "empirics"—hydropaths, sometimes called quacks—who are so skilled in the hydrotherapy of fevers that, had any one of them had the case of this young man from the onset of his attack, the case might have been so speedily aborted as to have passed for a very mild illness, or at the worst would have been conducted safely to complete restoration to health after a longer or shorter period of sickness. Of the truth of this statement there can be not the slightest question, in view of statistics at hand, the accuracy of which can not for one moment be gainsaid.

"It has been clearly shown," said Dr. Simon Baruch before a medical society in New York, "by the statistics of Liebermeister, Brand, Ziemssen, and others, that the cold-water treatment—even its half-hearted form, as now practised in many hospitals in Germany—has reduced the mortality in typhoid fever from twenty-one per cent. to seven per cent., the basis of these statistics being 19,017 carefully gathered cases.

"But this is not all. Brand had obtained from twenty-three German and French sources, aggregating 5,573 cases, statistics which have not been and can not be controverted, by which it is clearly demonstrated that this treatment, as originally recommended by him in 1861, has reduced the mortality in typhoid fever to less than four per cent. The latter, however, still contains many imperfectly managed cases. Eliminating these, the number treated by Vogl, Juergensen, and Brand, up to 1887, amounted to 1,223 cases, of which twelve only proved fatal, or one per cent. And not one of these deaths occurred in any case that came under treatment before the fifth day.

"The exactness of these figures," continues Dr. Baruch, "can not be doubted, coming as they do from university clinics and military hospitals, in which the cases were admitted early, and observed by well-trained medical men; and they are the better adapted to the elucidation of this question of treatment because of the variety of sources from civil and military life."

The treatment accorded in these cases has been that of moderate feeding, and the employment of the Brand bath, so called, a full bath in water at about 66° F., for fifteen minutes, with active friction of the skin during every moment of stay in the water, and cold compress on the head, or cool water pouring over the head, meanwhile; this bath given whenever the temperature reaches 103°, and as often as every three hours so long as the temperature remains in that vicinity. But it should be distinctly understood that this bath is never properly given for the purpose of directly downing the temperature, although indirectly and ultimately the temperature declines because the disease, which makes the fever necessary, steadily diminishes. While it would be less brutal and probably less fatal to reduce the temperature of a fever patient abruptly by means of sufficient exposure in the bath than by the employment of medicinal antipyretics, still it is bad practice, and no expert hydrotherapist ever employs the bath, or any kind of water or hydriatic procedure, for this purpose.

The object of the water treatment is to freshen the skin and maintain this great organ in working condition, so to say; to brace the nervous system; to strengthen the great central organ, the heart; to promote the patient's comfort; to prevent or remove delirium; in brief, to stimulate the entire organism in a natural and wholesome manner. The bath accomplishes this. But experience proves that when therapeutic fasting is employed to the fullest extent necessary, and fresh, soft water is profusely taken by the patient, occasions for the employment of the full bath are extremely rare, and but few baths are ever demanded, the "damp bandage" * fulfilling all the requirements for the production of the important changes described as resulting from the bath. Only the first brief instant of discomfort is produced by this cold pack, the speedy "reaction" being delightful in the extreme. This damp bandage is the most generally useful and practical of all hydrotherapeutic appliances. In the ordinary, or extraordinary, infantile ailments resulting from indigestion, in which children are uneasy, restless, wakeful at night, the damp bandage deftly applied will often put them to sleep in less than three minutes from the time they are snugly covered with the blankets again. I have observed this effect in hundreds of instances, and in more than one instance our own children have asked and, I may say, even cried for it, so charmingly soothing has it proved to be in their experiences, in ailments that come to all children who have "enough to eat" (always meaning too much), not enough "exposures," and who *wear clothes!* Doubtless most children are overfed, overclothed, and overcoddled.

Typhoid fever destroys fifty thousand lives in this country every year,† and injures the other two hundred and fifty thousand patients who are said to recover from the disease; or, more correctly speaking, the prevailing treatment does the greater part of all this fearful mischief. Outside of the practice of here and there a physician, who has learned the proper treatment for typhoid fever, there has been little or no improvement in the treatment of this disease, either in private or hospital practice, during the past one hundred years. We have the history of typhoid in the Massachusetts General Hospital for the past seventy-eight years, thanks to Dr. Fitz, whose tables from the records show that from the year 1821 to 1859 the mortality in typhoid fever was 12.75 per cent., and from 1859 to 1899 it was 15.5 per cent. Certainly, this is a very bad showing for medical progress, so far as concerns this disease.

The treatment in vogue at the Massachusetts General Hospital is about what we may style the prevailing one throughout this country and Europe—viz., forced feeding and symptomatic treatment with drugs; and, while the bath is employed to a considerable extent, the fact of the matter is that no amount of skill in hydrotherapy can counteract the influence of ptomaine poisoning from feeding a fever patient in face of the impossibility of digestion and assimilation, and the lowered vitality resulting from the employment of antipyretic drugs. But, shall we not nourish the fever patient? Assuredly, yes; but, as Dr. Henry * remarks, "the question of nutriment is a relative one, depending upon the immediate wants of the system. To a person perishing from thirst nothing is so nutritious as water. The strongest argument for the cold-bath treatment in typhoid fever is that it prevents tissue degenerations, especially of the heart, which are generally ascribed to long-continued drought. We do not attribute the desiccation and decay of vegetables during the torrid heat of summer so much to the presence of heat as to the absence of water, and the facts with reference to our own tisues during the heated term of a fever are precisely analogous. In a word, our bodies, in health, are more fluid than solid, and can not perform their functions unless this fluidity is maintained."

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* A two-ply coarse linen towel wrung tightly from ice water, placed on another two-ply towel, dry, and brought snugly round and pinned, the inner or damp folds to be freshened as often as they become heated up, say every hour or two or three, according to the degree of fever present. This pack should extend from armpits to hips, generally.

† Estimate of Professor Victor C. Vaughan, of the University of Michigan.

Twenty years ago, Sir William Jenner, in an address before the Midland Medical Society of Birmingham, England, referring to the vicious effects of forced feeding, said: "I have seen the patient restless, sleepless, his temperature raised several degrees above what it had previously been, vomit, eject a quantity of curd, and at once the restlessness cease, the temperature fall, the skin become moist, and the patient drop into a quiet sleep. All the threatening symptoms vanish with the ejection of the offending material. Or the undigested curds may accumulate in the bowel, inducing flatulent distention, pain, restlessness, and increased febrile disturbance. Under these circumstances I have seen an enema bring away a large vesselful of offensive, sour, undigested curds. Or, again, the undigested curds may themselves (and this has not been an uncommon consequence of milk diet in my experience) irritate the bowels, and produce, keep up, or greatly increase diarrhœa."

No diarrhœa, speaking generally, in infant or adult age, can withstand the effects of a day or two of fasting; and no one should ever hesitate to apply this remedy when indicated. The silly notion as to any possible danger of a patient's starving to death, or even to his hurt, from a week, or two, or three, of subsistence on fresh water and fresh air, in view of all the fasting observations we have made before and since the Tanner fast, is too childish for any one to consider with complacency. But it seems as though the profession could never learn this simple lesson. At the time of the Tanner episode in New York, when almost the entire medical fraternity there and throughout the country was scoffing and sneering and joking at and about the faster, Marion Sims cabled over from Paris: "Your experiment watched here with great interest by scientists, ridiculed by fools. Courage, brave fellow, hold on. Wish you success. J. Marion Sims."

No end of fever patients have emaciated to skeletons during many weeks of forced feeding, and finally died, largely from inanition, who would have been convalescent by abstaining from all food save water for periods varying from one to two weeks early in their illness. Such patients emaciate much faster on feeding than on fasting, at times; in the first instance they are being both starved and poisoned, there being absolutely no nourishment in putrefying food substances, while the ptomaines resulting from such putrescence are often as fatal as arsenic or other deadly poison.* Many and many a time have I seen emaciation lessen, pain made to cease, all bad symptoms disappear, and *strength rapidly return* to the fasting patient.

I think that I am not making an overstatement when I say that if every patient beginning to be feverish, with lack of appetite, nausea, etc., were treated on the plan herein indicated, the three hundred thousand cases of typhoid fever occurring in this country every year would be reduced to perhaps fifty thousand, and, of these, forty-five thousand would be restored to health after comparatively "comfortable sicknesses." This would mean a saving every year of forty-five thousand lives, a value to the nation of at least forty-five million dollars, while the saving effected by the shortened sicknesses (to say nothing of the saving of vitality to the restored patients †) would mount up to many more millions.

Then, too, we may well consider the question of the distress, anxiety, and grief of the relatives and friends of the typhoid-fever patient, from the needlessly prolonged illnesses, in which a night and a day nurse are often required, and the entire household upset for many weeks; whereas, under correct management, patients are at ease, and require very little in the way of attention. Of course, when the hygienist is called to a neglected or badly treated case, much care, skill, and time are required to set things right; some such will have passed beyond the power of human skill to save, but even these will be spared much in the way of pain and suffering.

Among the hydrotherapeutic procedures besides the emergency cold bath and the cold, damp bandage, both of which have been described, I may mention the full cold-water (never very cold water) enema, as a "nutritive enema," which is very soothing and helpful at times; head pouring—a few pitcherfuls of cold water, the feelings of the patient being the guide as to temperature, he lying on his belly, the head being held comfortably over a foot-bath tub or bowl—a most delightful treatment for certain head symptoms; the narrow cold compress along the spine, when indicated, to any soothing degree required; cold compress massage for the chilly symptoms often experienced when the temperature of the patient ranges very high, perhaps,* while it seems hardly worth while to refer to the matter of sponge bathing, since the most ignorant attendant gives attention to this procedure.

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* Frederick P. Henry, A. M., M. D., on Typhoid Fever, in *A System of Practical Therapeutics.*

* *Food-poisoning and Metallic Irritants.* Paper read before the Massachusetts Medico-Legal Society, October 4, 1899, by Charles Harrington, M. D.

† According to life-insurance statistics, of all who are said to "recover" from typhoid fever, twenty-five per cent. finally die prematurely of consumption, so devitalizing is the prevailing treatment.

The drinking water for the fever patient should never be very cold; better even warm than very cold. He will take much more cool water than ice water, and it should be the aim of the attendant to saturate the system with water. From, say, eighty ounces, in case of a patient rightly treated from the start, to a hundred and thirty ounces † in cases that have been allowed to develop into ugly conditions, may be regarded as the proper "ration" for twenty-four hours.

But this sort of thing costs the doctor a pot of money—a method that tends strongly to educate his families in prophylaxis and in the means of aborting attacks of illness; that is, by simple physiological treatment, as the damp bandage for the neck in amygdalitis or any sort of sore throat; for the upper body in certain chest troubles; for the lower body in abdominal disorders; the entire trunk in fevers; cold compress for the chest in pneumonia, and for the abdomen in "inflammation of the bowels" (peritonitis); in dysentery, the damp bandage again; and, in all acute attacks, the only physiological "diet"—viz., water, *soft* water, always "the best known diuretic" (W. Howship Dickenson, M. D., F. R. C. P., treatise on *Albuminuria*), the only proper diluent for the blood. It seems incomprehensible that physicians should ever make soft water hard by adding lime, as is the not uncommon practice. The freshest feminine importation from Ireland knows enough to use soft water for washing dirty clothes, and it is ten thousand times more essential in our efforts to cleanse the filthy body. All diseases are appropriately enough called "filth diseases."

More than two thousand years ago, Hippocrates, "the father of medicine," advised the withholding of food "during the *progress* of fever," and in every generation from his day to ours this has been the sheet anchor of the wisest dietists in the treatment of acute disorders characterized by high temperature. The great novelist, Balzac, in a private letter to a very dear friend more than fifty years ago, describes an illness that came upon him. He says: "I have been very ill. The doctor called it coagulation of the blood, which might affect the brain. M. Nacquest condemned me to a bath of three hours each day, and to drink three pints of water every day, and to take no other nourishment. At the end of two weeks I came out of this barbarous but heroic treatment with a clear skin, renewed strength, and with fresh courage for new struggles." Surely there was at least one wise practitioner in Paris in 1841.

According to my observation during many years of study of physicians, and constant reading of all the leading medical journals, there is a lamentable lack of interest among medical men concerning all such studies as are embraced in this paper. The reason of this is not far to seek: the medical schools give their graduates almost nothing in the way of teaching in hydrotherapy, and it is the almost universal practice with their professors and the hospital physicians to feed early and often, as if the question of digestion and assimilation were not at the bottom of all true feeding, and not simply swallowing. In the discussion following the reading of an essay on Hydrotherapy, Its Scientific Basis, by Professor Putnam, of Harvard University, recently, Dr. Coggeshall insisted that "it is disgraceful that students should be allowed to graduate from our medical colleges with practically no systematic teaching in regard to non-medicinal therapeutics," and Dr. Rogers remarked jocosely that "medical colleges ought to cease to graduate men who don't know the difference between a Scotch douche and a hot Scotch." Kussmaul writes: "Of hydrotherapy the young physician knows almost nothing [nor does one in the hundred of old ones know or practise very much].* Here is a great gap in the education of our physicians; here is the real cause of his inability to cope with the empirics for the favor of the public." Professor Credé, of Leipsic, states that "if physicians were better versed in these branches, the field of operation of many quacks would be greatly curtailed," which is only another way of saying that many quacks are more efficient in practice than the average regular practitioner, an admission as true as it is shameful.

It seems almost beyond belief that any physician could be found, at a time so close to the twentieth century, who would deny a typhoid-fever patient all the water he craved; but in fact such an occurrence is not altogether rare. Water is withheld in great measure upon the theory that large amounts of fluid interfere with the digestion of other and more nutritious food; but, as Henry has so tritely remarked, under certain conditions there is no other food that can truly nourish the body. During the progress and at the height of typhoid fever, "the blood is of a dark, blackish-red color, and is generally obtained by needle puncture of the finger with more than ordinary difficulty," indicating conclusively a deficiency of water. On the other hand, the thickly coated tongue, sordes, and the generally parched condition of the mouth indicate quite as clearly the utter lack of all the dissolving and preserving juices absolutely essential to the digestion of solid food, or any other food but water. To call milk a liquid food seems to me absurd, when it is stated on high authority that the casein of a pint of milk is equal to a good-sized mutton chop, and is vastly more difficult of digestion; yet we know that as much as two or three quarts of milk are swallowed by a typhoid patient in twenty-four hours. The results of this abuse of food have been vividly portrayed by the late Dr. Jenner, as above quoted.

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* A coarse linen towel, folded four-ply and wrung tightly from ice water, the whole trunk to be gone over piecemeal, warming up the towel once at each section. In a case of appendicitis to which I was called, I found the patient with a hot fomentation over the region of the appendix, a hot-water bag over this, in his flannel undershirt and nightgown, under a mountain of blankets, his teeth chattering with cold, as he imagined. I had him strip off the undershirt immediately, and I gave him the quick all-over compress massage, and within twenty minutes he was delightfully warm in his nightgown and covered only with a single sheet, the time being summer. The fomenting flannel had been immediately removed and the parts cooled in and in with the ice-cold compress. I then placed the damp bandage about the lower body, and I left him a very happy fellow. This gentleman had been subject to attacks every three or four months, for years, and had been upon the point of yielding to the advice of his family physician and the entreaties of his friends to have an operation for the removal of the appendix. This attack, which was three years ago, was the last one he has ever had, though there has been an occasional uneasy feeling in the region of the appendix—perhaps three in the three years—which he has speedily knocked out in a single round with the cold compress. His "education" cost him a matter of ten dollars, for the only two visits I had occasion to make, and he has saved considerable money and possibly his life thereby.

† Meigs. *The Uses of Water in Typhoid Fever.*

* Brackets present writer's.

The fasting typhoid patient will shortly have no movements of the bowels, there is a normal closure, so to say, under these conditions. After convalescence is fully established, the condition of the stomach such as to make the digestion of food possible, and the patient hungry enough to take a half slice of stale Graham bread for "pie" and pronounce it delicious, this will be a good risk." Two or three times a day, after a day or two, he may have a moderate portion of such bread and a few stewed prunes; but the bread is to be chewed by itself, not run down with sauce, or any other fluid but saliva. After a few days of feeding the bowels will get in condition for a natural movement, and should never be moved with physic, though occasion may occur in which an enema of a cupful of cold water may be of use in stimulating the action of the lower bowel; but this only in case of the presence of waste matters difficult to expel otherwise.

It is a lamentable fact that we rarely find an individual in the profession who is at all in love with the study of hygiene, personal sanitation, and natural methods of treatment. The great proportion regard hygiene about as honeybees do the nectar of *Epipactis latifolia*—they won't touch it! But, on the other hand, the wasps are very fond of this nectar, as many empirics are fond of hygiene. The empiric to be shunned is, in my estimation, the medical man who hears of any important addition to the means for alleviating human suffering and fails to try with all possible energy to become familiar with its principles and technique to employ it in his practice. Though armed with a dozen parchments, such a man is unfit for his calling.

"The result of the treatment of typhoid fever continues to be so bad in general in this country as to constitute a chronic opprobrium to the art of medicine," said Dr. George L. Peabody, in an address before the Practitioners' Society of New York. "Those who adhere to the expectant plan of treatment are still in the large majority here. This plan seems in a general way to make us quite content with our bad results, and to lead us to expect the patient to die if he becomes gravely ill." And then Dr. Peabody describes "the almost rhythmical way" in which the patient is fed for the promotion of high temperature, drugged with antipyretics" until perhaps the temperature suddenly drops to a level which may be several degrees below the normal; and if, accompanying the fall of temperature thus produced, there is a degree of prostration and feebleness of heart which is alarming in itself, then, to counteract this bad symptom, for which the drug and the doctor are responsible, alcoholic and other stimulants are given in large amount.

"This method of treatment," continues Dr. Peabody, "if it be proper to call that a *method* which seems to lack all true system, is often dignified by its advocates by the appellation *rational*. In fact, however, it would be difficult to devise a more irrational method." And, then, with fifty thousand scalps at our belt by such means, in this one disease alone, we shriek hysterically at each single scalp obtained by irregular practitioners, who at least give their clients the benefit of security from drug poisoning, even though feeding them as unphysiologically as we ourselves feed our patients. Who can doubt, in view of this state of things, that we have ourselves and our own ill success to thank for the rise of empirics of all kinds, as Dr. Oswald puts it, who harp on a single string, so to say: hydropaths, osteopahts, etc.?

Dr. Austin Flint, in his posthumous address on The Medicine of the Future, prepared for the meeting of the British Medical Association in 1886, said: "It is a pleasant thought that, hereafter, the practice of medicine may not be so closely interwoven as hitherto, in the popular mind, with the use of drugs. The time may come when the visits of the physician will not, as a matter of course, involve the cooperation of the pharmacist; when medical prescriptions will be divested of all mystery and have no force in the way of fortifying the confidence of the patient. The medical profession will have reached an ideal position when the physician, guided by his knowledge of diagnosis, the natural history of disease, and existing therapeutic resources, may, with neither self-distrust nor the distrust of others, treat an acute disease by hygienic measures without potent medication. When this time comes a system of practice which assumes to substitute medical dynamics for the *vis medicatrix naturæ* will have been added to the list of bygone medical delusions."

Hygienic, or physiological, treatment, embraces every natural and helpful measure calculated to assist the diseased organism to recover that just balance which we call health: hydrotherapy, with its many potent procedures, a few of which have already been described; massage (now posing as "osteopathy"), which is of immense value in a wide range of disorders, as we all well know; diet, meaning the ingestion of food when indicated, and its avoidance when contraindicated; air (of much better quality than is found in the average sickroom, to be sure) for the lungs and for air baths; sun baths; rest, when indicated, and exercise for those who are overrested, so to say, etc. Whenever, as a profession, we shall have reached the height of capacity for skillfully applying all these potent remedies for acute or chronic diseases, it will no longer be sneeringly said that "medicine and science are not even on speaking terms," for medicine will then have been exalted to a science.

154 TREMONT STREET.

SOME THERAPEUTIC NOTES.

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APOMORPHINE IN TACHYCARDIA.—Allbutt says little or nothing seems to be of much service, either in cutting short attacks of tachycardia or in their prevention. This has doubtless been the experience of many physicians. Some time ago my friend, Dr. L. J. Krouse, mentioned to me a case of tachycardia in an elderly lady with valvular disease, in which the attacks were readily controlled by apomorphine given hypodermically. This remedy was suggested to him by observing that vomiting would always terminate an attack. In his case the attacks, which are mild in character, are readily controlled by small doses of apomorphine, even a twentieth of a grain, which need not produce nausea or vomiting.

In the following case of very severe tachycardia I had an opportunity to test the value of the same drug:

Miss L., aged twenty-eight, seamstress, when nine years of age had an attack of palpitation following a fright, and had occasional attacks thereafter, probably of no great severity. Six years ago she was called home from Washington by the death of her father. She had a severe attack of tachycardia at the time, and a like attack possibly about once a year since. During the year preceding my seeing her she had from four to six attacks, which either followed some excitement or were without known cause. The duration of her attacks varied from one to several days. Her business was to go out and sew by the day, and very commonly she would continue at her work as usual for one or several days after the attack was already upon her. One attack appeared to be just like another. She felt the rapid action of the heart, had a sensation of suffocation, and was told that her pulse could not be counted.

I was called to see her for the first time May 21, 1899. At that time she had been in an attack four days, the last two or three of which had been spent in bed. She was in great distress, complaining chiefly of a smothering sensation. She had received enormous doses of the bromides, digitalin, and strychnine subcutaneously, as well as morphine and various other remedies, without relief. The patient stated that the only remedies that ever benefited her were such as produced emesis, and that no one remedy helped her in more than one or two attacks, losing its effect thereafter. By the aid of various measures she had been made to vomit very frequently during the present attack, but all of no avail. Her experience was also that a remedy brought an attack to an end promptly or not at all. When I saw her the pulse was threadlike and could not be counted, but auscultation of the chest showed that the heart was beating at the rate of 216 a minute. She was now given apomorphine hydrochloride, a tenth of a grain, hypodermically. She began retching and vomiting in two or three minutes. At the end of twenty-five minutes she was again examined. Her pulse was 96, and she felt completely relieved. The attack was over.

I saw her again on the following day and made a careful examination. Her pulse was still 96, though she was feeling quite well. The heart appeared to be normal. There was no indication of gastro-intestinal trouble, or of any other diseased condition that might have been the cause of the tachycardia.

As my present object is merely to call attention to apomorphine in the treatment of tachycardia, I shall give but a brief account of the subsequent history of this very interesting case.

She had other attacks, which came on about June 18th, July 7th, September 3d, September 27th, and November 19th. All of these were severe, and I saw her in each one. In addition, she had several milder attacks of a few hours' or a day's duration, which passed off without any treatment. The attack of June 18th was as quickly controlled by apomorphine as the first. That of July 7th required two injections before it was brought to an abrupt termination. The attack of September 3d required several injections; finally, one of a fifth of a grain brought it to an abrupt termination. The next attack was apparently unaffected by the apomorphine, as much as three tenths of a grain being injected at one time without any effect on the heart's action, though producing long-continued emesis. The attack continued six days, and then was suddenly terminated by a violent retching following the administration of some home remedy. Hitherto the moment the paroxysm ceased the patient felt relieved; indeed, soon felt so well that nothing could prevent her from being up and about as usual. But when the attack just described terminated, she felt as if something had given way in the chest, had a sense of impending death, and sent for me to come in haste. When I saw her the attack was over; the pulse was about 100, but there was a loud cardiac bruit, never heard before, which disappeared after some days. I supposed the condition due to a not clearly demonstrable dilatation of the heart.

She felt quite weak for some time, so that she was willing to remain in bed for several days, which she had never consented to do before. This last attack had been brought on by helping to lift a stove. I warned her against all undue exertion, telling her my remedies had lost all control of her paroxysms, and that her only safety lay in trying to avert future attacks.

She was of a very active, ambitious nature, impatient of control, but she attempted now to lead a more quiet life, though less so than I wished. She had in the next few weeks two slight attacks, one of a few hours, the other of a day's duration, each passing off without any remedial measures, except lying quietly in bed. One of these was caused by a trivial fright, the other by stumbling while walking the street. Her final attack came on November 19th without any apparent cause. The first two days I kept her quietly in bed without medication. Then, as she begged for it, I tried the apomorphine. Again three tenths of a grain were of no avail. Among the other remedies tried in the next two weeks, either prescribed by myself or by other physicians called in consultation, were large doses of the bromides, morphine, dionin, hyoscyamus, veratrum viride, aconite, digitalis, tartar emetic, calomel, etc.—all without avail. The pulse (heart beat) during this time varied from 190 to 240 a minute. She was troubled with a harassing cough, the distressing suffocating sensations, etc., and there were many other symptoms of congestion of the viscera—bloody sputum, enlarged and tender liver, etc. On December 6th she made a change of physicians, and I did not see her again; but I was informed that she had an attack of right hemiplegia and aphasia about ten days after my last visit, and died December 30th.

Why the attacks of tachycardia in this case increased in severity and became gradually less amenable to treatment I do not know; but the power that apomorphine may have to control severe attacks was clearly demonstrated. Inasmuch as treatment of such attacks is usually so unsatisfactory, and a search of the literature of the subject did not reveal the mention of apomorphine in their treatment, I have deemed the case worthy of publication, in the hope that this drug may prove valuable in like instances.

Cacodylic Acid in Anæmia.—Cacodylic acid is dimethyl arsenic acid. Its chemical formula is $(CH_3)_2AsO(OH)$. It is a white, crystalline substance, easily soluble in water, odorless, and always spoken of as nonpoisonous. The few statements just made I found in works on organic chemistry. This preparation is not mentioned, so far as I know, in medical books, for it appears not to have been considered a medicine for the treatment of disease. My attention was first called to it at the meeting of the Cincinnati Academy of Medicine, October 30, 1899, when Dr. Heidingsfeld presented a patient with lichen rubra planus which had improved rapidly under subcutaneous injections of cacodylic acid, three quarters of a grain having been given daily for twenty-one days. The doctor stated that the drug was reputed to possess all the remedial properties of an equal amount of arsenious acid or sodium arsenate, while it was so innocuous that it might be given internally in from one- to three-grain doses. He further stated that the literature on the subject was very meagre, and pertained only to skin diseases. I have searched medical literature in vain for its mention. Its apparent success in skin disease, and the fact that it could be given in large doses as well as subcutaneously, led me to believe that it might be of special value in those constitutional conditions usually benefited by arsenic.

At this time a young lady came under my charge in whom I determined to test its value. She had been for some years the subject of very distressing neurasthenia, especially of a cerebral type. She stated that almost from girlhood she had been anæmic, and had been put upon iron and arsenic again and again. She came to me directly from a sanitarium, where she had received arsenic and peptomangan continuously for five months. An examination of the blood made by Dr. Rothenberg at this time, November 1, 1899, revealed the following: The red cells were 3,300,000; hæmoglobin, thirty-five to forty per cent., and the doctor thought he found the plasmodium of malaria.

The patient was now ordered quinine, ten to fifteen grains morning and evening for four days, ten grains morning and evening the following three days, then for four weeks five grains twice a day, and thereafter two grains three times a day. On November 12th I began giving her hypodermic injections of cacodylic acid, from three fifths to three quarters of a grain (twelve to fifteen minims of a five-per-cent. solution), daily or every second day. She received fifty injections in all, the last on January 9, 1900.

A second examination of the blood was made by Dr. Rothenberg on November 26th. The hæmoglobin was now fifty-five to sixty per cent., the red cells 3,370,000, and no plasmodium was found. She was now ordered, in addition, Gude's peptomangan, a teaspoonful three times a day, which she continued to take thereafter.

A third examination by Dr. Rothenberg on December 24th showed hæmoglobin seventy-five to eighty per cent., red cells 3,900,000; no plasmodium. On the day before the patient left Cincinnati, January 9, 1900, I found the hæmoglobin to be eighty-five per cent.

The facts that this patient had been repeatedly treated with iron and arsenic, apparently without benefit; that she had just been receiving peptomangan and arsenic for five months, at the end of which time there was but thirty-five to forty per cent. of hæmoglobin in the blood, while she improved so rapidly after coming into my hands, prove that there was a new element in treatment to which the benefit must be attributed. That this element was cacodylic acid is very probable. It is true that the result may be simply due to the discovery of the plasmodium and the treatment with quinine. But I am not altogether satisfied as to the malaria in this case, and, even then, the cacodylic acid may have been an important agent in its removal and in the improvement of the blood.

I tried the remedy in another patient, a young lady. On November 6, 1899, the hæmoglobin examination showed seventy-five per cent. On November 20th she began taking arsenic and iron. On November 29th the hæmoglobin was again seventy-five per cent. On this date she received a subcutaneous injection of three fifths of a grain of cacodylic acid, and a like amount at three subsequent visits. On December 14th the hæmoglobin was a hundred per cent. I hesitate to believe that in this case the improvement was due to the few injections of cacodylic acid.

Possibly the cacodylic acid is of benefit because it can be given hypodermically. I have at different times begun treatment with subcutaneous injections of other forms of arsenic, but never continued it long on account of the pain produced. The hypodermic injection of cacodylic acid is as painless as that of morphine.

I believe the above-reported case fully justifies the further trial of cacodylic acid in constitutional conditions where arsenic is indicated. I hope such trial will soon show clearly whether it is really of value.

THIRTY-TWO CASES OF TYPHOID FEVER WITHOUT A DEATH.

By J. C. CRIST, M. D.,
LEXINGTON, MO.

The subject of typhoid fever is one in which every practising physician is more or less interested, as well as one that has been thrashed over until it would seem that there remained nothing new to be said, every practitioner having his own peculiar way of treating, feeding, and nursing his patients.

There appeared in the *New York Medical Journal* of August 12, 1899, an article giving histories of forty-three cases of typhoid fever without a death, reported by Dr. Edward C. Seufert, of the University of Illinois, which induces me to report my thirty-two cases without a death. My experience leads me to indorse the author's treatment throughout, with a very few exceptions, and to assert that if this method of treatment is rigidly adhered to we shall have no delirium, no distended abdomen, no hæmorrhage, and, best of all, shall reduce the mortality.

Most physicians lay a great deal of stress on nursing and diet as well as frequent bathing in typhoid fever, in which I fully concur, but would add with just as much emphasis the necessity of proper medication, believing that some have overlooked drugs and rely too much on diet and the bath, which, of course, should not be neglected, neither should they be relied upon too implicitly.

My thirty-two cases have ranged from three to eight weeks in duration, four weeks being about the average fever period, then following a period of convalescence lasting two or three weeks. Treatment consists of rest, hydrotherapy, diet, and medication.

As soon as I have satisfied myself that the case is one of typhoid fever I instruct the patient to take a thorough bath and go to bed. The temperature of the bath should be that which is most agreeable to the patient. These baths are continued daily throughout the course of treatment, followed by changing bed clothing and gown after each evening bath. As the patient usually sleeps better after bathing, I prefer the bath at the usual bed hour. If the temperature gets high (say above 103° F.) and the patient is nervous or restless, I have administered a cold bath; however, if, in spite of the high temperature the patient is resting quietly, the extra bathing is not allowed, even if the temperature reaches 104°. I am well aware that this does not meet the modern idea of hydrotherapy, but if the fever is having no unusual bad effect on the patient why molest him? One good bath daily, with change of clothing, is sufficient for sanitary purposes as well as the comfort of the patient.

Diet.—Milk, boiled milk, milk with limewater, two to four ounces every two or three hours, with all the water the patient can drink. If milk disagrees, soft-boiled eggs, meat broths, and soups are to be given.

Medication.—If the patient is an adult, five grains of carbonate of guaiacol are administered every six hours, which controls diarrhœa, relieves the distended abdomen, and reduces fever. We can not give any fixed medication for every case, but this is the treatment usually adhered to. Sometimes the dose must be diminished or omitted, but the patient is not allowed to go longer than twelve hours without guaiacol. If the patient is not able to sleep, a dose of fifteen grains of sulphonal is administered at bedtime. I have rarely had to administer a heart stimulant—only in one case of my thirty-two, that of a young woman who had a relapse. The pulse reached 180 to the minute. Strychnine sulphate in one-twenty-fifth-grain doses was administered hypodermically every three hours, or when it was considered advisable.

After the patient is convalescent and the fever is subsiding, the night dose of guaiacol is omitted or reduced, as it will lower temperature, and it may bring it below normal, a condition I have encountered, and with alarming symptoms, on more than one occasion. We do not have a great number of cases of typhoid fever in this vicinity. My thirty-two cases have extended over a period of about five years, and my experience with carbonated guaiacol in typhoid fever has been as satisfactory as the use of quinine in malarial fever. It is one of the best intestinal antiseptics, being tasteless, is easy to administer, and never disagrees with the stomach. A great deal could be said of it on this subject as well as the effect it may have on the disease after it enters the circulation.

The St. Louis Medical Society.—At the last regular meeting, on Saturday evening, the 24th inst., the following papers were to be read: Fifty Years' Study and Practice of Rhinology; Events of the Years 1866 and 1867, by Dr. Thomas F. Rumbold, and A Case of Hodgkin's Disease, by Dr. J. W. Smith.

AN INSTANCE OF PRIMARY HÆMORRHAGE FOLLOWING AMYGDALOTOMY.

By G. B. HOPE, M. D.

The following case of primary hæmorrhage after the simple operation for the abscission of hypertrophied tonsils is recorded as the unusual personal experience that brings to mind in a most striking manner the truth of the familiar reference to the "unexpected that happens," and suggests a proper caution and some line of treatment that might appear serviceable in this emergency.

The patient was a young married woman of about twenty-six years of age, of a particularly muscular development, weighing a hundred and sixty-two pounds, a member of a variety theatrical company, and having a part requiring great muscular exertion. For a number of years past she had been subject to frequent attacks of amygdalitis, sometimes interstitial and sometimes developing into a quinsy. While under engagement and passing through the city she became affected by a renewed double amygdalitis of considerable severity. In consideration of the fact that the requirement of her engagement demanded an early return to a long run of a traveling company, it was advised that, notwithstanding her present illness, she should submit to the removal of the tonsils without delay, as not greatly adding to her suffering and abruptly forestalling future attacks of the same character. Although this advice may seem highly injudicious, it is by no means the first time this procedure has been carried into effect without bad results. Owing, however, to an extreme nervousness, the patient insisted that an anæsthetic should be employed, and hence, most fortunately as the event proved, she was referred to the Metropolitan Throat Hospital. During the administration of chloroform an unusual state of intoxication, shouting, and some slight resistance was induced. Immediately following the amygdalotomy, done with the Mackenzie instrument, the patient revived. The bleeding, that for the first few moments was extremely brisk, continued as a free hæmorrhage, though occasionally abating slightly, during more than three hours. Large clots would form in the throat, necessitating their removal with forceps, and at times the patient would be choked by the blood that flowed downward into the larynx. It is scarcely necessary to state that the patient was almost uncontrollable from the excitement of her position, notwithstanding every precaution taken to cover the apparent seriousness of the outcome. This hypernervous state contributed to make it all the more difficult to administer suitable aid, and no doubt intensified the hæmorrhagic tendency. The familiar hæmostatics, such as topical cold, cocaine, antipyrine solutions, hydrogen peroxide, were entirely ineffective, and it was only at the end of persistent employment of the galvano-cautery that a fortunate arrest of the hæmorrhage was obtained, and when the patient was rapidly becoming exsanguined. During the brief periods allowing examination the hæmorrhage was seen to arise from an arterial branch on the right side near the anterior portion of the cut surface. The tonsil had been so radically ablated that the stump was virtually concealed by its pharyngeal pillars excepting during the contraction of the fauces.

Theoretically, the various plans for the ligation, compression, or torsion of a divided tonsillar vessel of large size may be most complete, but the practical difficulties are immeasurably greater than would appear probable. No form of direct pressure, digital or otherwise, could have been supported on account of the incessant expectoration; neither, for the same reason, could instrumental interference have offered very promising results. Moreover, a general anæsthetic to diminish the reflex irritability would have added a danger in other ways and was not considered.

In a number of the *American Journal of the Medical Sciences* of some years back a case is recorded of secondary hæmorrhage several hours after amygdalotomy and where, after styptics, pressure, and ligation of the carotid were employed in their order without benefit, the patient fainted, with the abrupt and permanent arrest of the hæmorrhage. The conclusion the author reached was that in such an emergency syncope might be an important agency to be encouraged. It is more than probable that in the foregoing instance also the physical exhaustion played its own rôle, no less important than the application of the galvano-cautery.

The predisposing causation of this hæmorrhage might very naturally be said to lie at the end of a chain of circumstances, each link of which had in itself sufficient to provoke more than an average liability to this accident: the robust and athletic figure of the patient, the age, the tissue changes resulting from the recurring attacks of acute inflammation—notably the presence of an existing one—the inordinate nervous disposition, and finally the employment of an anæsthetic.

Concerning the appearance of the tonsils, there was nothing beyond their large size and inflammatory congestion to excite attention; that is to say, there was no visible pulsation or unusual conformation, neither was there a history of hæmophilia.

In the light of this solitary experience, the galvano-cautery, the hypodermic use of ergot, the maintenance of the erect position, and the avoidance of stimulants are considered as ranking among the selected methods for the control of this formidable and rare emergency.

ANOTHER ACCOMMODATION OF THE EYE.

By NORBURNE B. JENKINS, M. D.,
CHICAGO.

In childhood the crystalline lens is soft and elastic. It becomes less elastic as age advances, and in the aged it is hard and unyielding. The ciliary or focusing muscle girdles or encircles the crystalline lens, and so shapes it that the focus of the eye can in a moment be adjusted for either a distant or a near object. The muscle is relaxed for distant vision. It is exerted to its utmost if an object is held close to the eye. This power exists until the crystalline lens becomes hard. It is called accommodation.

The eye has another accommodation. The textbooks do not describe it, and its existence will come as a surprise to those who think testing the eyes for glasses a simple matter, long ago settled. The "other accommodation" is the power the eye has to adapt itself to badly fitting glasses. It is surprising what a large number of imperfectly fitting glasses can be worn by an imperfect eye. Often persons with imperfect eyes have their eyes tested time and again and never get two pairs of glasses alike or any one pair right. The "other accommodation" is the chief stock in trade of the wandering spectacle expert, and is the sheet anchor of unscientific refraction methods.

The case given below may show the large number of glasses that will for a time more or less help an eye with a complicated error of refraction. A given eye of a person from fifteen to thirty-five years of age is perfectly fitted with a + 0.25 sph., combined with a + 1 cyl. axis 85°. Any one of the following glasses will give much relief to such an eye, but it is only a question of time until phorometers, prisms, ophthalmometers, retinoscopes, etc., must be used again: + 0.25 sph., combined with + 1 cyl. axis 80° or 90°; + 0.50 sph., combined with + 0.75 cyl. at any axis from 77° to 93°; + 0.50 sph., combined with + 0.50 cyl. at any axis from 75° to 95°; + 0.75 sph., combined with + 0.50 cyl. at any axis from 70° to 100°; + 0.50 sph., combined with + 1 cyl. at any axis from 77° to 92°; + 1 cyl. at any axis from 80° to 90°; + 0.75 cyl. at any axis from 80° to 90°, etc.

"Shot guns" like the following are some help to the majority of asthenopes and are often worn for years without complaint by such an eye as the one above: + 0.50 sph., + 0.75 sph., + 1 sph., + 1.25 sph., + 1.50 sph., + 0.50 cyl. axis 75° or 90°; + 0.75 cyl. axis 75° or 90°; + 0.50 sph., combined with + 0.50 cyl. axis 75° or 90°; + 0.25 sph., combined with + 0.50 cyl. axis 75° or 90°, etc.

To select a pair of glasses that can be worn is a simple matter; to properly correct complicated cases for long-continued reading will always be beyond the bungler and the quack.

A few cases are given to show what the eyes sometimes tolerate:

Miss ——, aged thirty-two, music teacher, wore for six years, R. E., — 4 cyl. axis 10°; L. E., — 4 cyl. axis 180°. R. V., $\frac{20}{15}$ with + 4 cyl. axis 90°; L. V., + 0.50 sph., combined with + 3.25 cyl. axis 100°.

Miss ——, age twenty-two, stenographer, wore for two years, — 3.75 sph. on either eye. R. V., $\frac{20}{15}$ with — 2.25 sph.; L. V., $\frac{20}{15}$ with — 4.25 sph.

Mr. ——, aged fifty, bookkeeper, wore for four years, R. E., — 0.25 sph., combined with — 1.50 cyl. axis 110°; L. E., 0.25 sph., combined with — 2 cyl. axis 80°. R. V., $\frac{20}{15}$ with + 0.75 sph., combined with — 1.25 cyl. axis 121°; L. V., $\frac{20}{15}$ with — 2 cyl. axis 73°.

Miss ——, aged nineteen, wore for three years on either eye, — 0.50 sph., combined with — 0.25 cyl. axis 180°. R. V., $\frac{20}{15}$ with — 0.12 sph., combined with — 0.12 cyl. axis 180°; L. V., $\frac{20}{15}$ with + 0.37 sph., combined with — 0.25 cyl. axis 135°.

Therapeutical Notes.

To Purify the Atmosphere of a Phthisical Patient's Room.—Dr. E. S. Younge (*Therapist*, January 15th) says that in addition to free ventilation the following solution, plentifully and frequently sprayed, may prove a source of comfort and advantage:

℞ Guaiacol	10	parts;
Eucalyptol	8	"
Carbolic acid	6	"
Menthol	4	"
Thymol	2	"
Oil of clove	1	"
Alcohol (ninety per cent.)	170	"

Mix and dissolve.

For Constipation. — *Progrès médical* for January 13th ascribes the following to Audhoui:

℞ Powdered coffee	60	grains;
Senna leaves	120	"
Water, Milk, } of each	1,350	"

Macerate for twelve hours, strain, and sweeten. To be taken in one dose in the morning.

℞ Parsley leaves, Senna leaves, cleansed, } of each	225	grains;
Anise seed, Coriander seed, } of each	75	"
Lemon cut in slices	No. 1;	
Cold water	15,000	grains.

Macerate for twenty-four hours, stirring from time to time; express and filter. To be taken by glassfuls every half hour.

℞ Senna leaves or pods	q. s.;	
Prunes	3,750	grains;
Boiling water	15,000	"

Macerate at a gentle temperature for twelve hours. Sweeten and allow to cool. Drink the juice by cupfuls.

An Emulsion of Trional.—According to the *Klinisch-therapeutische Wochenschrift* for December 24, 1899, Professor Pouchet, of Paris, recommends this formula:

℞ Trional	15	grains;
Oil of sweet almonds	5	drachms;
Sugar	2	"
Gum tragacanth, Gum arabic, } each	3	grains;
Orange-flower water	2.5	drachms;
Cherry-laurel water	0.5	drachm.

M. To be taken in milk or water.

An Emulsion for Burns, Inflammatory Phimosis, Balanoposthitis, etc.—Ullmann (*Presse médicale*, August 23d) recommends the following:

℞ Tannoform	75	grains;
Solid white paraffin	75 to 150	"
Liquid vaseline	1,275 to 1,350	"

M.

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THE SANITARY SERVICE IN HAVANA.

WE are indebted to Dr. John G. Davis, major and surgeon of volunteers, the chief sanitary officer of Havana, for some interesting publications, including the statistics of births, marriages, and deaths, and of immigration and yellow fever for the decade 1890 to 1899, a report of vital statistics for the year 1899, one for the month of December, 1899, and a graphic chart showing the records as to yellow fever, immigration, and weather conditions during the year 1899. All these publications are not only interesting, but also indicative of the thoroughness with which our military officers in Cuba have seen to the sanitation of Havana.

The amount of work done in the sanitation of Havana during the year 1899 was very great. We learn from one of the documents mentioned that 41,552 examinations of premises were made, 34,241 written notices were issued, 9,039 premises were disinfected, 4,576 cartloads of rubbish were removed, 25,497 examinations of cesspools were made, 6,769 cesspools were cleaned, 207 analyses of food products were made, 36 bacteriological examinations were conducted, 347 food products were destroyed, 298 horses were treated, sewer and catch basins were cleaned and disinfected in 40,579 instances, 1,234 houses were newly supplied with water, public urinals were cleaned and disinfected in 4,879 instances, an average of 24,000 gallons of electrozone was applied daily in streets, sewers, and houses, 253,583 linear feet of old sewers were cleaned and disinfected, 1,731,982 square metres of street area were cleaned daily, 400,298 square metres of pavement were removed, and the plumbing was modified in 2,424 houses.

The records of yellow fever show that the disease was present in every month except February, but not prevalent to any considerable extent save for a period beginning in August and ending in December. More cases (seventy) were reported in December than in any other month, but the greatest number of deaths from the disease (twenty-five) occurred in October. There were 284 cases during the year, with 103 deaths. The population of the city is estimated at 220,000. Of the 4,181 births reported, 1,516 were illegitimate—1,015 among the whites (in a total of 3,606 births) and 501 among the negroes (in a total of 575 births).

Such work as Surgeon Davis has been charged with is none too easy of performance under the most favorable circumstances. That he has performed it so well in a city notoriously neglectful of sanitary matters previous to the American occupation is very much to his credit and to that of the military administration of the department. We hope that so long as Cuba is under our flag there will be no relaxation of this kind of work.

THE MEDICAL CONDUCT OF THE SOUTH AFRICAN CAMPAIGN.

WITH the war in South Africa from its political standpoint we have, of course, nothing to do; but the medical history of the campaign so far must be to the entire medical profession throughout the world a source of considerable professional gratification. Whatever criticisms and animadversions may be made, rightly or wrongly, upon the preparations, organization, administration, and *modus operandi* of the other branches of the British forces operating in South Africa, for the organization, administration, and labors of the medical corps there appears to be room for little other than almost unqualified praise. Never before in the history of warfare, so far as a careful perusal of the reports published weekly in the *Lancet* and the *British Medical Journal* would seem to indicate, has the medical charge of vast armies in a campaign, and more particularly on the field of battle, been accomplished with such signal and marvelous success. This fact forms a powerful vindication for the organization of an army medical department upon a corps basis, self-administering and perfectly autonomous, such as has been recently effected after many struggles in England. This opinion is founded not merely on official reports, but also on the unbiased testimony of the distinguished consulting surgeons to the forces, Sir William MacCormac and Mr. Frederick Treves, whom the director-general of the British Army Medical Department counseled the government to dispatch to the seat of war, which wise counsel was equally wisely followed.

The successful organization of admirably equipped and served base hospitals has been supported by the excellent organization of all the field hospitals along the lines of communication, right up to the dressing stations immediately in rear of the field of battle, and by the equally admirable service of the surgeons, dressers, and bearers of the medical corps in the fighting line itself. As regards the base hospitals, Sir William MacCormac, writing on November 21, 1899 (*Lancet*, December 23d), says: "I would say in conclusion that in my opinion it would be very difficult, if not impossible, to procure better treatment in any hospital than the patients in Wynberg Base Hospital are receiving under climatic and sanitary conditions extremely favorable in every respect for a successful issue. The hospital in its arrangements, construction, and situation reflects the greatest credit on all concerned." And again: "It is perfectly clear that never before was an expedition more abundantly and generously equipped with every resource which the medical authorities can suggest for the welfare of the sick and wounded."

Of the field hospitals Mr. Treves, in the *British Medical Journal* for January 27th, writing of the battle of Colenso, says: "Some 800 wounded were passed through the field hospitals and dealt with by sixteen surgeons. Those who harshly criticise the army medical department should have seen the work done on that memorable Friday on the Naval Hill before Colenso. No work could have been done better. The equipment was good, the arrangements elaborated, and the officers worked on hour after hour without rest or food under the most trying possible conditions. No greater strain could have fallen upon a department, and all concerned met the brunt of it valiantly and well." When it is considered that within four hours all the wounded were collected from the field, attended to, and started on their way to the rear in safety, some idea of the perfection of the organization may be attained.

Sir William MacCormac bears further testimony to the quality of the operative surgery performed by the army medical officers in the field hospitals at Chieveley as follows: "The work performed in the operating tents was, in my opinion, of great efficiency, the operations being deliberately carried out with skill and dispatch under the very trying circumstances of intense heat, hurry, and excitement all round."

From every part of the seat of war come similar accounts. Lord Methuen, on November 28, 1899, after the battle of Modder River, reports: "Again I call attention to the splendid hospital arrangements, for at 4.45 P. M. on the day after the fight all my wounded were on their way to Cape Town. I am glad to have been slightly wounded, because in no other way could I have learned the care taken of the wounded, and there was nothing officer or private soldier required that was not provided at once, and the medical officers never tired in their endeavor to alleviate suffering."

As regards the service on the field of battle itself, Sir William MacCormac, writing from Chieveley on December 16th, says: "We found the station occupied by a hospital train. . . . There were 119 wounded in the train. They had been taken on board direct from the field, the train having run into the actual scene of action; in fact, it was ordered back by the principal medical officer, two shells having fallen close to it. . . . The wounded filled the carriages just as they had come from the field; every wound had been dressed, and had been dressed extremely well, under fire. A noticeable feature was the fact that very few of these dressings needed readjustment. Rifle splints, tourniquets, and other dressings had been adjusted carefully and deliberately, under circumstances of great difficulty and danger."

Testimony to the personal courage and daring of the officers and men of the Royal Army Medical Corps abounds on all hands, of which the following, from the *Times's* correspondent at the battle of Magersfontein, may be taken as a sample: "The work of the medical staff was beyond praise. Their promptness in relieving and removing the wounded under hot fire was extraordinary, though the doctors were ultimately compelled to forego attending the wounded near the trenches, as many men who might otherwise have been saved were shot while being attended to, the enemy's fire being always drawn to these points." As to the attached civilian surgeons—or, as we should style them, "contract surgeons"—rendered necessary in the British service, as in ours, by the insufficient establishment of the medical corps, the *Lancet's* special correspondent says in the issue of that journal for December 23d: "While I am about it I should like to say how excellently the young civil surgeons attached to us are doing their work. Nothing in the shape of work is too much for them, and their willingness and zeal are of the highest order. Of their medical and surgical skill I can not speak too highly, and the care exercised in their selection is bearing its fruit, for a better lot of men all round I have never had the pleasure of meeting or serving with."

The campaign itself has so far been essentially a surgical one, for, though, of course, there have been some cases of enteric fever and other camp diseases in the beleaguered cities and a few sporadic cases in the armies themselves, the number of wounded has hitherto been very considerably in excess of the usual ratio to sickness. Yet the mortality from grave wounds of the head, thorax, and abdomen, when the men have not been killed outright, seems to have been remarkably small. Under this head Sir William MacCormac, a foremost authority on gunshot wounds, says (*Lancet*, January 20th): "What causes me never-ending surprise is the number of wounds traversing the lung, and in many instances both lungs, without causing greater inconvenience than temporary hæmoptysis, and often not even that. Another feature is the number of abdominal wounds in which no serious consequences have taken place, wounds in which, from the direction taken by the ball (which may be assumed to be a straight course from the entrance wound to the exit wound), it is impossible to conceive that the visceral contents have escaped perforation, and in which, nevertheless, no serious consequences arise."

The experience of the present war bears out the conclusions already arrived at in the Spanish-American war as to the comparative mercifulness of the modern small-calibre weapons of great initial velocity and flat trajectory over the older weapons. The Mauser bullet, for instance, appears to cause but very little shock and only slight pain on impact, while the wounds it occasions are apparently quite aseptic, healing readily without suppuration.

The first field dressing, carried in the pocket of his frock by each soldier, appears, according to the testimony of Mr. Treves, not only to serve its purpose admirably, but to be highly appreciated by Tommy Atkins, who is very careful to see that he has it on him. This dressing, says the *British Medical Journal* for January 27th, "consists of an outer cover of sewn cloth; within each are two safety pins. The inside cover is of thin waterproof, cemented, airtight. The package contains: (1) A piece of thin waterproof (mackintosh), 12 inches by 6 inches, which can be torn in half and folded over the dressings, if necessary); (2) a gauze bandage, 4¼ yards wide, folded flat; (3) a piece of gauze 17 inches by 13 inches, folded to suit the size of the package; (4) a compress of compressed charpie of flax between layers of gauze (like Gamgee's dressing), capable of being teased out into a thick pad. The antiseptic agent used is corrosive sublimate, 1 to 1,000."

Another noticeable innovation is the presence with the British forces of two German military medical attachés. It has long been the custom for foreign powers to send military attachés to belligerent forces, to gain practical experience in the art of war. The example set by Germany of sending medical attachés might be followed in warfare by all neutral nations with great advantage to the cause of humanity as well as to the increase of military efficiency.

In conclusion, we may safely say, wherever our sympathies may lie in this terrible struggle, that the special victories of the Royal Army Medical Corps are a theme to elate the heart of the medical profession throughout the world with justifiable pride.

THE RESPECTIVE RIGHTS OF MOTHER AND CHILD.

THE question, says *Lyon médical* for December 3, 1899, as to whether the woman has a right to refuse to allow the performance upon herself of an operation intended to save the life of her unborn child has been proposed by Professor Pinard in the *Progrès médical* for November 18, 1899, who answers it in the negative, for, says he, the woman has not the necessary competent knowledge to appreciate the nature of the proposed intervention. To allow her this right would be to admit the legality of abortion, for it would be nonsensical to allow that a woman could be condemned for having produced the death of a fœtus a few months old, if she had the right to practise fœticide at term. From this the professor argues that the accoucheur has, therefore, neither a moral nor a legal right to practise embryotomy on the living child, since the child has an incontestable right to its chance of life, and, moreover, the statistics of symphysiotomy, as generally practised, give a mortality of only twelve per cent., against 11.5 per cent. for craniotomy. Professor Pinard therefore asserts that to neither father, mother, accoucheur, nor director of the hospital belongs the right of life or death in this case, and that the choice of operation rests solely with the physician.

We fancy there will be little if any dissent from Professor Pinard's argument, but, in practice, what is the obstetrician to do? Surely, he can not be expected to perform symphysiotomy or the Cæsarean operation on a woman who will not consent to it. Even if he were justified in attempting to do so, he has no power of compelling the woman to submit. It is, of course, his duty to picture to her as forcibly as possible the right of the child to every chance of survival. But persuasion is apt to take time, and during that time the child may die. If it does die, he can perform embryotomy with a clear conscience. If, however, the child is still alive at a time when the physician feels certain that the woman will not yield, the question of what course he should follow becomes a difficult one. He certainly has no right to kill the child and salve his conscience with the thought that the woman took the responsibility and relieved him. Is he to abandon the case, then? That he can not do without incurring odium, and, in our opinion, such odium would be deserved. Assuredly, if the circumstances admit of his doing so, he should call in another physician, and the two together should endeavor strenuously to obtain the woman's consent to some procedure not incompatible with the child's survival.

As a matter of fact, it is extremely rare, we believe, if it ever occurs at all, for a woman to refuse to submit to any of the recognized operations of obstetrics, provided the case is properly stated to her. Her husband, however, may be a stupid brute and refuse his consent, in which case, manifestly, the physician has no means of enforcing acquiescence in what he feels to be absolute right. It is possible, of course, for legislation to declare that the father of an unborn child possesses not the least vestige of the old Roman power of life and death over his wife and children. The ancient Roman law itself, indeed, as Professor Pinard points out, applied only in cases of some offense, and he adds that it is difficult to see how an unborn babe, the very symbol of innocence, can do any wrong.

STUNTED GROWTH.

M. Springer, according to the *British Medical Journal* for February 3d, recently read before the French Academy of Sciences a monograph containing the results of his researches into the cause of and remedy for stunted growth in children. Taint in the parents seems to him to be the chief ætiological factor—especially alcoholism, morphinism, chronic lead poisoning, syphilis, and gastro-intestinal disease. Adenoma of the respiratory tract and thyreoid insufficiency in the subjects are additional factors. In addition to measures for the relief of maladies producing arrest of development, M. Springer places great stress on stimulating the growth of the long bones by local irritation of the epiphyseal cartilages by applying saturated brine compresses around the joints at night, and especially by the local application of electricity. Static electricity combined with the faradaic current to the lower epiphysis of the femur, according to him, affords rapid results. The treatment at least seems rational enough, no matter how partial the ætiology assigned by the author may prove to be.

CHILDREN AS SUBJECTS OF "CONTRIBUTORY NEGLIGENCE" IN ACCIDENTS.

The *Medical Review of Reviews* for January 25th, citing the *Pennsylvania Medical Journal*, states that the Kentucky courts have decided against a railway company which pleaded contributory negligence on the part of a child in a suit against it for damages for injury, on the ground that a child less than four years old could not be guilty of contributory negligence. The court's contention is doubtless equitable; but, recalling the constant reports of cases of children of very tender years injured by trolley cars in our crowded cities, it seems to us that although such children can not be held as contributory, their parents can not equitably be acquitted. We have ourselves seen very many instances in the past twelve months in which fatal accidents to children by trolley cars have been narrowly avoided, and in hardly any of them could we have considered the motorman seriously to blame had the accident occurred. The children, of course, were too young to understand, and could not therefore be blamed either; but what can be said of the criminal negligence of the parents who allowed them to play by themselves in our principal thoroughfares?

THE SUPPRESSION OF NEWS-VENDERS' SCREECHING.

According to the *Lancet* for February 10th, a by-law was passed on February 6th by the London County Council which ordains that under a penalty of forty shillings "no person shall for the purpose of hawking, selling, or advertising any newspaper, call or shout in any street so as to cause annoyance to the inhabitants of the neighborhood." It is rumored that such an ordinance has been passed in this city. If it has, it ought to be enforced. There is no excuse for the hideous row made by the newsboys, which is wearing to the nervous organization of the hearers. There are far too many noises in our streets, many of which are perhaps more or less unavoidable; but the screech of the news-vender is all the more objectionable because entirely unnecessary. A large placard carrying in bold letters the principal item would serve all necessary purposes.

THE "BEAUTY LABORATORIES" OF PARIS.

A writer in the *Gazette médicale de Paris* for December 16, 1899, says that there are now in Paris certain up-to-date "laboratoires de beauté" frequented by women afflicted with the neurasthenic fad of making their persons conform to a new "plastic ideal." The writer cites Gaston Deschamps as saying that in these establishments an ingenious system of douches and massage is employed to "reduce the hips" and "efface the bust" (phrases found in a circular); in other words, he well says, to suppress the natural and charming distinctions between the sexes.

THE DISINFECTION OF CIRCULATING-LIBRARY BOOKS.

It is known in a general way that formaldehyde has been found a suitable disinfectant in libraries, and no doubt a definite method of procedure that has proved satisfactory will be of interest to librarians. The *Medicinische Woche* for February 5th says that Dr. Immerwahr advises placing the books, backs up and the covers so separated as to admit of some looseness of the leaves, in the upper part of an incubator heated to from 86° to 95° F., with a formalin solution in shallow capsules at the bottom, and keeping them there for five or six hours.

THE INFLUENCE OF ALCOHOL ON THE TESTICLES.

Overindulgence in alcohol has long been thought to impair the sexual power, and there seems reason to infer from certain experiments made by M. Bouin and M. C. Garnier (*Presse médicale*, January 17th) that it may actually cause decided degenerative changes in the testicles. These gentlemen induced chronic alcoholism in a number of white rats, and in two of the animals they found atrophy of the testicles, with almost complete destruction of the epithelium of the seminiferous tubules.

"PUS TUBES" AND ACCIDENT INSURANCE.

Dr. Thiem (*Monatsschrift für Unfallheilkunde*, 1899, No. 9; *Centralblatt für Chirurgie*, January 27, 1900) relates the case of a young woman, a cook, who was suddenly attacked with abdominal pain after lifting a basket filled with patent fuel. Some time afterward two physicians found that she had acute bilateral pyosalpinx, which they attributed to the exertion. Several months later the woman entered a hospital and died of general peritonitis after an operation. The author argues that the salpingitis must have existed before the alleged "accident" occurred, and his article is entitled Eileitervereiterung ist keine Unfallfolge. It is not difficult to foresee that the question may prove material in litigation concerning accident insurance.

A DEAD BODY ATTACKED BY DOGS.

THE *Progrès médical* for January 13th reproduces from the *Petit temps* a story well calculated to shake our belief in the fidelity of the dog after its master's death. At Cholet there lived alone with his seven dogs a drunkard—unfortunately a retired médecin-major of the second rank—who was one day missed from the streets through which it was his wont to ramble. His house was entered by a woman of the neighborhood, and she encountered the hideous spectacle of the doctor lying dead on the floor, which was hidden by a layer of excrement more than three inches thick. He seemed to have died in frightful convulsions, and on his table there were eight empty quart bottles. The dogs were devouring the corpse, and it was with great difficulty that they were enticed away from it; fresh meat had to be thrown to them for the purpose. The maire of the town caused these dogs to be killed. No doubt the popular notion that the drunken doctor had long been insane was well founded.

MASTOID DISEASE IN NEW YORK.

DISEASE of the mastoid process is understood to be unusually prevalent in New York at the present time. For the past few years its chief exciting cause has seemed to be influenza, but that scourge appears not to be prevailing now so extensively as during several preceding winters. The cases of mastoid disease are said to be encountered in greatest number in a district lying to the east of the Bowery. In view of the grave peril to life, as well as to the organ of hearing, in case radical intervention is put off too long, the disease may be said to threaten a perceptible increase of the general mortality.

THE PLAGUE.

IT is gratifying to observe by the Marine-Hospital Service's health reports for the week ending last Saturday that no new cases are mentioned as having occurred in Honolulu or elsewhere in our possessions. The further fact that only two are reported from Brazil renders it reasonably probable that the disease will not effect a lodgment on the Western Hemisphere.

AN APPENDICITIS CLUB.

ACCORDING to the *Journal of the American Medical Association* for February 10th, Cleveland, Ohio, has an Appendicitis Club, the necessary qualification for membership in which consists in having had the appendix vermiformis removed. Could not the emancipated appendices also club together to celebrate their liberation from the human accretions with which they were once encumbered?

ITEMS.

The Buffalo Academy of Medicine.—At the last regular meeting of the Section in Obstetrics, on Tuesday evening, the 27th ult., Dr. Edward J. Ill, of Newark, N. J., read a paper on The Indications for and the Selection of Operation for Uterine Myomata.

Marine-Hospital Service Health Reports.—The following cases of small-pox, yellow fever, cholera, and plague were reported to the surgeon-general during the two weeks ending February 24, 1900:

Small-pox—United States.

Jefferson County, Ala.	Feb. 3	66 cases.	
Mobile Ala.	Feb. 2–17	8 "	1 death.
Jacksonville, Fla.	Feb. 2–17	4 "	
Brunswick, Ga.	Feb. 5	46 "	
Eastern towns, Idaho	Feb. 3	Prevalent.	
Aurora, Ill.	Feb. 10–17	6 cases.	
Danville, Ill.	Feb. 3–10	1 case.	
Evansville, Ind.	Feb. 2–17	11 cases.	
Atchison, Kan.	Jan. 27–Feb. 10	9 "	
Mound Valley, Kan.	Nov. 5–Feb. 8	17 "	
Wichita, Kan.	Dec. 30–Feb. 10	15 "	
Louisville, Ky.	Feb. 15	3 "	
New Orleans, La.	Feb. 3–17	151 "	38 deaths.
Shreveport, La.	Feb. 3–10	36 "	4 "
Minneapolis, Minn.	Jan. 27–Feb. 3	36 "	
Greenwood, Miss.	Jan. 27–Feb. 10	216 "	6 "
St. Louis, Mo.	Jan. 22–Feb. 3	13 "	
Butte, Mont.	Feb. 7	150 "	
New York, N. Y.	Feb. 10–17	1 case.	
Cincinnati, Ohio	Feb. 2–10	5 cases.	
Cleveland, Ohio	Feb. 3–17	67 "	
Youngstown, Ohio	Feb. 3–17	2 "	
Eastern towns, Oregon		Prevalent.	
Greenville, S. C.	Feb. 3–10	2 cases.	
Nashville, Tenn.	Feb. 3–17	9 "	
Salt Lake City, Utah	Feb. 3–17	4 "	
Martinsville, Va.	Feb. 7	1 case.	
Portsmouth, Va.	Feb. 3–17	16 cases.	
Richmond, Va.	Jan. 1–31	21 "	
Spokane, Wash.	Feb. 10–17	6 "	

Small-pox—Foreign.

Prague, Austria	Jan. 13–27	5 cases.	
Antwerp, Belgium	Jan. 13–Feb. 3	18 "	7 deaths.
Ghent, Belgium	Jan. 27–Feb. 3		1 death.
Rio de Janeiro, Brazil	Dec. 13–Jan. 12		103 deaths.
Amhurstburg, Canada	Feb. 10–17	1 case.	
New Brunswick, Canada	Feb. 10	Prevalent.	
Nova Scotia, Canada	Feb. 10–17	Prevalent.	
Quebec, Canada	Feb. 3–9	4 cases.	
Hongkong, China	Dec. 16–23	1 case,	1 death.
Barranquilla, Colombia	Jan. 22–27	1 "	1 "
Cairo, Egypt	Jan. 16–31	4 cases,	
Leeds, England	Jan. 27–Feb. 10	1 case,	1 "
Liverpool, England	Jan. 22–27	1 "	
London, England	Jan. 10–Feb. 3	69 cases.	
Southampton, England	Jan. 13–27	2 "	
Lyons, France	Feb. 20–27		1 "
Nice, France	Jan. 20–Feb. 3	5 "	3 deaths.
Paris, France	Jan. 22–Feb. 3		3 "
Königsberg, Germany	Jan. 13–27	3 "	1 death.
Gibraltar	Jan. 22–26	2 "	
Athens, Greece	Jan. 22–Feb. 3	5 "	1 "
Bombay, India	Jan. 2–16		239 deaths.
Calcutta, India	Dec. 22–Jan. 13		22 "
Kurrachee, India	Jan. 16–21	12 "	1 death.
Madras, India	Jan. 13–20		1 "
Singapore, India	Dec. 13–Jan. 6		5 deaths.
Tamsui, Formosa, Japan	Oct. 1–31	6 "	
Chihuahua, Mexico	Jan. 27–Feb. 3		6 "
Ciudad Forfirio, Mexico	Feb. 10–17	5 "	3 "
Mexico, Mexico	Dec. 24–Jan. 28	69 "	41 "
Vera Cruz, Mexico	Jan. 27–Feb. 17		4 "
Moscow, Russia	Jan. 13–27	5 "	
Odessa, Russia	Jan. 13–Feb. 3	36 "	3 "
St. Petersburg, Russia	Jan. 13–27	47 "	11 "
Warsaw, Russia	Jan. 13–Feb. 1		7 "
Corunna, Spain	Dec. 9–Feb. 3	6 "	5 "
Madrid, Spain	Jan. 20–27		13 "
Geneva, Switzerland	Jan. 6–13	7 "	
Smyrna, Turkey	Jan. 7–Feb. 4		4 "

Yellow Fever—United States.

Havana, Cuba	Jan. 31–Feb. 14	3 cases,	3 deaths.

Yellow Fever—Foreign.

Rio de Janeiro, Brazil	Dec. 10–Jan. 12	25 cases,	30 deaths.
Vera Cruz, Mexico	Feb. 10–17		2 "
Curaçoa, West Indies	Feb. 3–10	1 case.	

Cholera.

Bombay, India	Jan. 2–16		7 deaths.
Calcutta, India	Dec. 22–Jan. 13		64 "

Plague—United States.

Honolulu, Hawaii	Dec. 12–Jan. 23	52 cases,	41 deaths.

Plague—Foreign.

Rio de Janeiro, Brazil	Jan. 20	1 case.	
San Paulo, Brazil	Jan. 20	1 "	
Hongkong, China	Dec. 8–23	5 cases,	5 deaths.
Bombay, India	Jan. 2–16		752 "
Calcutta, India	Dec. 22–Jan. 13		152 "
Kurrachee, India	Jan. 1–21	34 "	21 "
Formosa, Japan	Oct. 1–Nov. 30	48 "	27 "
Kobe, Japan	Nov. 11–Dec. 23	21 "	16 "
Osaka, Japan	Jan. 7	41 "	38 "

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported for the two weeks ending February 24, 1900:

DISEASES.	Week ending Feb. 17.		Week ending Feb. 24.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	19	5	25	10
Scarlet fever	212	21	195	17
Cerebro-spinal meningitis	0	10	0	5
Measles	891	21	896	60
Diphtheria	310	43	285	50
Laryngeal diphtheria (croup)	29	11	17	14
Tuberculosis	183	166	207	176
Chicken-pox	42	0	24	0
Small-pox	1	0	2	0

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from February 17 to February 24, 1900:*

Bradley, Alfred E., Captain and Assistant Surgeon, United States Army, is detailed as a member of the board to meet at Fort Snelling, Minnesota, for the examination of such candidates for the Military Academy as may be ordered to appear before it.

Borden, William C., Captain and Assistant Surgeon, United States Army, will report in person to Merrill, James C., Major and Surgeon, United States Army, for examination as to his fitness for promotion.

Cable, George L., Acting Assistant Surgeon, United States Army, will proceed to Fort McIntosh, Texas, to relieve Arwine, James T., Acting Assistant Surgeon, United States Army, who will proceed to Vancouver Barracks, Washington, for temporary duty until such time as he may be able to proceed to Fort Michael, Alaska.

Caldwell, Robert E., Acting Assistant Surgeon, United States Army, will proceed to San Francisco for duty on a transport when a vacancy occurs.

Darnall, Carl R., First Lieutenant and Assistant Surgeon, is assigned to duty at Fort Schuyler, New York, with recruits for the Philippine Islands, with a view to accompanying them to their destination.

Dean, Elmer A., First Lieutenant and Assistant Surgeon, will proceed by the first available transport to Manila, Philippine Islands, for assignment to duty.

Gibson, Robert J., Major and Surgeon, United States Army, is assigned to the command of the United States hospital ship *Missouri*, to relieve Arthur, William H., Major and Surgeon, who will report to the commanding general, Department of California, for duty.

Gorgas, W. C., Major and Surgeon, United States Army, will, in addition to his present duties, assume charge of the office of the chief sanitary officer of the department.

Hall, William R., Major and Surgeon, United States Army, is detailed as president of the board of medical officers convened by Par. 12, S. O. 15, January 18, 1900, W. D.

La Garde, Louis A., Major and Surgeon, United States Army, is granted leave of absence for ten days.

Noble, Charles D., Acting Assistant Surgeon, United States Army, will report for temporary duty at the United States General Hospital, Presidio of San Francisco, awaiting transportation to the Philippine Islands.

Owen, William O., Major and Surgeon, United States Army, is detailed as an additional member of the general court martial convened at Fort Thomas, Kentucky.

Phillips, John L., Captain and Assistant Surgeon, United States Army, will report to Merrill, James C., Major and Surgeon, United States Army, president of the examining board appointed to meet at the Army Medical Museum Building, Washington, for examination for promotion.

Thomas, Jerome B., Acting Assistant Surgeon, United States Army, will report in person to the commanding officer of Fort Slocum for assignment to duty with recruits to go on the transport *Sumner* to the Philippine Islands, and, upon arrival in Manila, will report for assignment to duty.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending February 24, 1900:*

Ohnesor, G. Karl, Assistant Surgeon. Ordered to temporary duty at the Naval Academy.

Waggener, R., Pharmacist. Granted leave of absence for four months on account of sickness.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the United States Marine-Hospital Service for the Seven Days ending February 22, 1900:*

Mead, F. W., Surgeon. Granted leave of absence for seven days from February 26th.

Carter, H. R., Surgeon. To proceed to Havana, Cuba, and resume duties as quarantine officer.

Guitéras, G. M., Passed Assistant Surgeon. Upon being relieved by Surgeon H. R. Carter, to proceed to Matanzas, Cuba, and resume duties as quarantine officer.

Perry, J. C., Passed Assistant Surgeon. Detailed as chief quarantine officer of the Philippine Islands and quarantine officer at the port of Manila.

Rosenau, M. J., Passed Assistant Surgeon. Detailed to attend the meeting of the Medico-legal Society at New York, February 21st and 22d.

Edson, E. R., Assistant Surgeon. Relieved from duty at the Reedy Island Quarantine Station and directed to proceed to the Gulf Quarantine Station for duty and assignment to quarters.

Society Meetings for the Coming Week:

Monday, *March 5th:* New York Academy of Sciences (Section in Biology); German Medical Society of the City of New York; Morrisania Medical Society, New York (private); Brooklyn Anatomical and Surgical Society (private); Corning, New York, Academy of Medicine; Utica, New York, Medical Library Association; Boston Society for Medical Observation; St. Albans, Vermont, Medical Association; Providence, Rhode Island, Medical Association (annual); Hartford, Connecticut, Medical Society; South Pittsburgh, Pennsylvania, Medical Society; Chicago Medical Society.

Tuesday, *March 6th:* New York Neurological Society; Buffalo Academy of Medicine (Section in Surgery); Elmira, New York, Academy of Medicine; Ogdensburgh, New York, Medical Association; Syracuse, New York, Academy of Medicine; Medical Society of the County of Herkimer, New York (annual—Herkimer); Essex, Massachusetts, South District Medical Society (annual—Salem); Hudson, New Jersey, County Medical Society (Jersey City); Androscoggin, Maine, County Medical Association (Lewiston); Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

Wednesday, *March 7th:* New York Academy of Medicine (Section in Public Health); Society of Alumni of Bellevue Hospital; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond, New York (New Brighton); Penobscot, Maine, County Medical Society (Bangor); Bridgeport, Connecticut, Medical Association.

Thursday, *March 8th:* Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; Medical Societies of the Counties of Cayuga and Cortlandt (quarterly), New York; South Boston, Massachusetts, Medical Club (private); Pathological Society of Philadelphia.

Friday, *March 9th:* Yorkville Medical Association, New York (private); Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties, New York.

Saturday, *March 10th:* Obstetrical Society of Boston (private).

Births, Marriages, and Deaths.

Married.

Champenois — Woodfin. — In Starkville, Mississippi, on Wednesday, February 14th, Dr. Cecil Champenois and Miss Rosalie Woodfin.

Fisher — Warren.—In New York, on Tuesday, February 26th, Mr. Harris B. Fisher and Miss Madeleine Warren, daughter of Dr. John Sidney Warren.

Fuentes—Ward.—In New York, on Wednesday, February 21st, Dr. Ventura P. Fuentes and Miss May Elizabeth Ward.

Hopkins—Barstow.—In New York, on Wednesday, February 21st, Mr. Leonard Stuart Robinson Hopkins and Miss Margaret Macdonald Barstow, daughter of Dr. J. Whitney Barstow.

Odeneal—Sherrod.—In Columbus, Mississippi, on Wednesday, February 21st, Dr. John D. Odeneal and Miss May Sherrod.

Scott—Brown.—In Charleston, South Carolina, on Wednesday, February 14th, Mr. Munford Gregg Scott and Miss Edith Josephine Brown, daughter of Dr. William S. Brown.

Died.

Creamer.—In Brooklyn, on Friday, February 23d, Dr. Joseph M. Creamer, in the sixty-fifth year of his age.

Hastings.—In Boston, on Friday, February 16th, Dr. William H. Hastings, in the sixtieth year of his age.

Martin.—In Elmhurst, Long Island, on Friday, February 23d, Dr. Edward F. Martin.

Morgan.—In Hartford, Connecticut, on Tuesday, February 20th, Dr. Sidney E. Morgan, aged twenty-seven years.

Perkins.—In Boston, on Tuesday, February 20th, Dr. Edward A. Perkins, in the seventy-third year of his age.

Wamsley. — In Brooklyn, on Sunday, February 25th, Dr. William Edward Wamsley, aged forty-five years.

Letters to the Editor.

THE ANTITOXINE TREATMENT OF DIPHTHERIA.

406 West Thirty-fourth Street, *February 17, 1900.*

To the Editor of the New York Medical Journal:

Sir: In the journal for February 17th Dr. John S. Billings, Jr., pleads "for the more extended use of antitoxine for immunizing purposes in diphtheria." He asserts that "antitoxine is the most potent means of preventing the spread of diphtheria." The general practitioner is appealed to, and so are all who read the *Journal.* Why is an appeal necessary in the interests of "the most potent means of preventing the spread of diphtheria"?

Is it because the general practitioner is skeptical or indifferent through sheer dullness and "criminal" prejudice? Or is it because heretofore all writers who take Dr. Billings's view have not presented the subject with sufficient care and intelligence to attain the philanthropic and beneficent results hoped for? Dr. Billings no doubt thinks he presents facts. And facts are the things we are looking for and want. About a hundred years ago Professor Bayley, then health officer of New York, in speaking of some facts connected with diphtheria or croup, said very truly "speculative reasoning serves as often to mislead as to instruct." To read profitably one must read between the lines, and such reading is largely and necessarily speculative, because we reason as we go along. Of course this is often a misleading process, but the student has no better means. And the reading practitioner is a student, and his speculative reading and reasoning—his thinking—is a good deal dominated by what he has seen and reflected upon, by what he has gathered from fellow practitioners, and by what he has learned from the facts and speculations gathered from the writings and exhortations of other advocates and critics of antitoxine treatment.

On reading over what Dr. Billings has to say in justification of his plea for antitoxine immunization, and on comparing the tables with one another, and thinking over all he has to say further in connection with the conclusions he ends with, I could not help asking myself How much of this is really valid fact, how much only supposed or approximate fact, how much of it only the result of a habit of will to believe it fact? If the figures of Dr. Billings's tables, alone and by themselves, must be taken as a test in favor of what he is pleading for, then nothing can be said against his conclusions. But the figures and the tables are not crucial facts. They only represent facts as do labels on a box the substances or things within.

Table iii is just as barren of very essential knowledge as the remark Dr. Billings makes, "in passing, it is to be noted that, of 3,109 individuals immunized, only nine contracted the disease." We are not told the composition of this group of 3,109 immunized individuals. How many of them were adults? How many children? How were they related to the dangers of infection? How many were inmates of a house? How many of a tenement house? How many belonged to a family living in two or three rooms where diphtheria was epidemic? How many were inmates of public institutions, and how were these cases related to infection? To the general practitioner no less than to the scientific man these questions are important. But Dr. Billings makes mention of none of them. His figures are barren of important facts. He allows much to be taken for granted, but scientific demands take nothing for granted, nor ought they to. The experiences of general practitioners, however ample, are almost as nothing compared to the thousands of cases that are exhibited in the statistical tables that are published from time to time by health-board authorities, but what they lack in bulk they make up in quality and comprehensibility, at least for the practical man. Many of us know of many children and many more adults who have been exposed to the contagion of diphtheria and who have not contracted the disease. Many of us have from time to time been given cause to wonder why all the members of a family, especially the children, have not contracted the disease from the child that had had the disease, so favorable had seemed the conditions for its spreading. Of course, many of us who can look back over a general practice of twenty years can recall families that have been less fortunate, families in which several children have been ill at once or in rapid succession and in which two or more have died during the same family epidemic. But, although diphtheria may be very contagious, it does not always seem to be so; and it is never so contagious as scarlet fever, measles, or whooping-cough.

"Diphtheria can be contracted in a great many ways," says Dr. Billings, and for this reason, he adds, "the antitoxine treatment of diphtheria can not alone bring about any marked reduction in the number of cases," which assertion no one will dispute.

Dr. Billings's Table iv, it seems to me, proves as little as Table iii in favor of antitoxine immunization. The table leaves much out of sight that would be of interest to the skeptical reader. We are told that in 1899, 8,240 cases of diphtheria were reported, but we are not told the number of families in which these thousands of cases occurred. We are told that there were 682 secondary cases of diphtheria in 522 families; but we are not told how many children there were in these families. Had we been informed on these matters the table might have become valuable in the support of his plea and the rectification of doubt and prejudice. Just below this Table iv Dr. Billings tells us that "only those cases occurring at least twenty-four hours after the original cases were taken into account." How can we be sure that in such cases the patients were not infected from the same source that infected the original patients? What Dr. Billings does not tell us, besides not defining clearly and precisely, vitiates his optimistic speculations, of which he indulges in many, and makes his conclusions practically invalid.

Thus far, all that is certain about immunization in diphtheria is that it has not realized the promises and expectations of its original promulgators; and, although its alleged immunizing power has dropped from a six months' to a six weeks' duration, its calculated effective dosage has been more than trebled. Practically this does not look well for "the most potent means of preventing the spread of diphtheria."

Adolph Rupp, M. D.

"ABSENT TREATMENT."

Norwich, N. Y., *February 22, 1900.*

To the Editor of the New York Medical Journal:

Sir: I notice that you occasionally "lambaste" the Christian Scientists, magnetic healers, etc. It is curious how much skepticism there is in the world, in view of the many wonderful cures reported.

Now, it seems to me that "absent treatment" is the best test of this science, and here is a remarkable case reported by a friend of mine. He was boarding in New York with a lady who was fast becoming blind, so far gone, in fact, that "she could not see a hair in the oleomargarin," as he expressed it. She took treatment from a magnetic healer in exchange for table board. She was improving under the professor's ministrations, and he was doing very well, thank you, at her table, when circumstances compelled his removal to Boston. But the treatment was continued under the old arrangement, and the good lady is rapidly recovering her eyesight under "absent treatment," and the professor is waxing fat on her "absent dinners."

J. Fred Windolphe.

Pith of Current Literature.

Saturnine Parotiditis.—M. A. Petit (*Gazette hebdomadaire de médecine et de chirurgie*, December 14, 1899) reported at a recent meeting of the Société médicale des hôpitaux the case of a house painter, the subject of chronic lead poisoning, who was suddenly attacked with a fresh onset of colic accompanied by headache and retromaxillary pain on both sides, but without fever. The pain was both spontaneous and evoked by pressure, and was increased in severity concurrently with a softened swelling of both parotids unattended with any redness of the skin. There were neither guttural nor buccal symptoms, such as salivation, smarting, or pain. The author considered the case to be one of double saturnine parotiditis, probably due to elimination of lead by the glands, according to the hypothesis of Claisse and Dupré, rather than to an infection of buccal origin in a saturnine subject. This opinion he based upon the absence of buccal phenomena and of febrile symptoms. M. Hudelo stated that he had recently seen a similar case, but unilateral in distribution, from which he argued in favor of a buccal origin.

The Physician's Duties to Pregnant Women before Labor.—Dr. Edward A. Ayers (*International Medical Magazine*, January) thus summarizes the chief duties of the physician, who should always, where possible, be engaged long beforehand, during the pregnancy of his patient:

Patients should be instructed, first, in the cardinal rules of gestation: frequent but never prolonged outdoor exercise and brief rests in the recumbent position, with low-heeled shoes and shoulder-strap support to the skirts, the corsets being laid aside; a sensible diet that avoids an excess of meats; regulation of the bowels and steadiness in the perspiratory function. The chief cause of unintentional abortion in healthy pregnants is prolonged or over exertion on the feet, constipation, and, perhaps, coition. The nausea of pregnancy, so usual in primiparæ, aids, in many cases, by its restraining influence, the conservation of gestation. Young wives are prone to play bravado during the unshowable first months of pregnancy and to try to do all they did previous to impregnation. Urinary examinations should be made once a month, from the third to the seventh month, and every two weeks from then to the ninth month, then every week until labor. The most practical method for obtaining a warning of the need of a urinary examination is to instruct the patient to give immediate information of any reduction in the amount of urine passed in twenty-four hours. Examinations should note the twenty-four-hour amount, the specific gravity, the reduction, if any, of urea, and the presence of albumin and casts. Very few cases of eclampsia would occur if proper attention were given to the urine.

The question of ante-partum examinations is a broad one, but it involves fifty per cent. of the obstetrician's usefulness. If the patient is a primipara, the pelvis should be measured by the twenty-eighth week. We should obtain the diameters of the iliac crests, anterior superior spines, the external and internal diagonal conjugata; and in misshapen pelves the external obliques, interischial and symphysio-coccygeal diameters. Compare these diameters with the height and weight of the patient and her husband, their ages, and note the character of the mother's skeleton. A frame of light bones usually has a relatively large pelvic calibre estimated from the external measurements, and *vice versa*. In multiparæ, where the previous children were of full size and term and the labors normal, these measurements are not required, but a comparison between the size of the fœtal head and that of the pelvic cavity should be made a fortnight before labor, since there may be an overgrowth of the fœtus.

The principal facts to be ascertained by abdominal examinations are: The position of the fœtus, twins, fœtal vitality, grades of hydramnion, condition of the bladder, tumors in the abdominal cavity, and complications involving the kidneys, liver, heart, lungs, etc. Fœtal malposition is frequent in proportion to the amount of amniotic fluid present. Malpositions present at the seventh month, where there is much room for fœtal gyrations, do not necessarily persist, since usually with time the fœtus daily represents a gain in space occupied compared with the amniotic fluid. But women with malpositions of the fœtus should be examined every two weeks. External version may be final, if performed when the fœtus is getting fixed in a malposition. Twins are usually a surprise (but need seldom be so), and often cause dangerous complications in delivery and the confusion incident to the arrival of the unexpected guest. Two heads, two heart rates, and innumerable extremities are full of valuable diagnostic suggestions.

In habitual premature fœtal death a weekly record of the fœtal pulse should be made from the sixth month to labor. Patients with hydramnion should have the anæmia usually accompanying it combated, and should be instructed when labor pains first occur to lie as still as possible in bed until amniotic rupture takes place, in order to avoid prolapsus funis or malpresentation of the fœtus. Abdominal tumors may not be noted by the patient, but should not escape the examiner's eye.

At least one vaginal examination should be made a few weeks before labor time, with an eye alert for placenta prævia, exostoses, fibroids, ovarian tumors, atresia, pelvic contraction, cancer, vaginitis, etc.

The nipples should be examined a month before labor, milk scabs, abrasions, and fissures treated, and depressed nipples elongated by traction daily.

The Relations Existing between the Nocturnal Enuresis of Children and Adenoid Vegetations of the Nasopharynx.—According to the *Revue mensuelle des maladies de l'enfance* for December, 1899, M. Grönbech (*Ugeskrift für Läjer; Semaine médicale*) found on review of the researches carried on by him since 1895 that in 9.1 per cent. of cases of adenoid vegetation there existed clearly a relation between these tumors and incontinence of urine. The same journal calls attention to Dr. Huber's similar investigations published in the *Archives of Pœdiatrics*, 1899, vol. xvi, p. 260. Dr. Huber found the conditions ordinarily present in nervous children, the issue of neurotic families, who presented a dryness of the mouth and lips, extreme thirst, polydipsia, polyuria, and incontinence, both diurnal and nocturnal. They were, moreover, anæmic, apathetic, and suffered from headaches, palpitation, and often from night terrors. The urinary examination gave constantly negative results.

The Clinical Thermometer as a Germ Carrier.—Dr. W. L. Conklin (*Buffalo Medical Journal*, February) asks why we are not as careful to see that our thermometers are as sterile as our surgical instruments, seeing that the mouth may furnish as favorable a medium for the development of bacteria as does an open wound. From a series of carefully prepared drawings by Professor Charles Wright Dodge, of the University of Rochester, he shows the relative sizes of a *Bacillus tuberculosis* and a *Bacillus diphtheriæ* as against one of the smaller graduation marks on a clinical thermometer, and also against a scratch and pits in the bulb invisible to the naked eye. It is found that a simple computation, based upon the accurate measurements of the camera drawing, shows that a degree mark is wide enough to accommodate a hundred tubercle bacilli, marching in single file, so to speak. Also that an area with the length and breadth of one of these marks would furnish room for the lodgment of two hundred and eighty thousand tubercle bacilli. When we consider that degree marks have depth, which can not, however, be readily measured, we see that each of them is capable of harboring a much larger number than this. These figures are of practical value, so far as they help us to realize the extreme minuteness of micro-organisms as compared with the indentations, visible and invisible, on the surface of our thermometers. It seems evident that ordinary washing and wiping can not be relied on to dislodge bacilli from a surface covered with such indentations.

Dr. Conklin next records four experiments tending to show that after free washing four thermometers retained in their indentations the various bacilli—diphtheritic, tuberculous, etc.—with which the thermometer had come into contact, which bacilli were demonstrated both microscopically and by cultivation. Two thermometers used in the same cases, on the other hand, but which had been sterilized, were found free from bacilli. The author has for some months carried his thermometer in an ordinary rubber case, which is filled with a 1-to-500 or 1-to-250 bichloride-of-mercury solution. All that is necessary to prevent leakage of the solution is a piece of leather packing, but there is a gradual shrinkage in amount, since each time the thermometer is withdrawn from the case a small portion of the solution adheres to it, and Dr. Conklin finds it necessary on this account to renew the solution once in three or four days. It is his custom to rinse the thermometer in a glass of water or under the faucet before and after using.

The Rôle of the Blood Supply in Mental Pleasure and Pain.—W. R. Dawson (*Medical Press*, December 6, 1899; *Medical Age*, January 25th) sums up the results of his inquiry into this subject as follows: 1. The emotional state produced by brain anæmia when gradual in onset, not too profound, and of some duration, is depression. 2. Anæmia of rapid onset and considerable degree tends to produce convulsions and excitement. 3. The characteristic feature of the general circulation in mental depression is high arterial tension, which helps to maintain, if it does not cause, the painful mental state; but there is no conclusive evidence of the condition of the cerebral circulation. 4. In mental depression the blood is impoverished. 5. Under experimental conditions high oxygen tension in the blood supplied to the nerve cells produces excessive action and possibly exhilaration, but there is no real evidence that such symptoms are ever due to this cause under ordinary circumstances. 6. The characteristic feature of the general circulation in excitement, and probably in exaltation, is low arterial tension. Here, again, there is no direct evidence of the state of the cerebral circulation. 7. This low arterial tension helps to maintain, if it does not cause, the mental state. Dr. Dawson concludes by deprecating a hard material conception of psychology except in the limited sense defined at the beginning of the address, and by urging the importance of psychological observation on the part of the general profession.

The Elective Affinity of Microbes for the Tissues.—MM. Bezançon and Labbé (*Gazette hebdomadaire de médecine et de chirurgie*, January 18th) have shown that when experiments are made with a microbe which has produced a lesion of some organ, this microbe acquires a kind of affinity for the organ in which it has developed. For instance, on infecting animals with staphylococci coming from a suppurative arthritis, they have shown that the staphylococcus, in place of producing general infection of the animals, induces suppurative arthritis in them. In two cases only did the staphylococcus pass into the general circulation and induce endocarditis. Then a fresh series of inoculations made with this last staphylococcus no longer induced arthritis, but endocarditis. By this affinity the epidemic manifestations of certain maladies produced by specific organisms may be explained—*e. g.*, the contagion of *otitis media* to which M. Lermoyez has recently directed attention.

Sodium-Chloride Solution in Pulmonary Disease.—Dr. Chauncey Rea Burr (*Boston Medical and Surgical Journal*, February 1st), in a paper on Intestinal Digestion and its Relation to Pulmonary Disease, says that fresh air and the cure of intestinal indigestion will do much to improve the condition of those suffering from pulmonary tuberculosis, and, if begun early enough, a cure may be looked for in a certain proportion of cases. The use of normal salt solution is also to be recommended.

Dr. Burr adds that he can never forget the extraordinary improvement which once followed the use of a sodium-chloride solution in a case of this kind. The patient was far gone in consumption and had been under observation for many months. One morning the word came that he was dying, and on arrival at the bedside it seemed indeed as if dissolution were at hand. There was great dyspnœa, the face was pale and bathed in a cold sweat, the pupils were dilated, the pulse fluttering and almost imperceptible, and the temperature 101° F. About three grains of sodium chloride were dissolved in a teaspoonful of boiled water and this was injected under the skin. In a few moments it seemed as if the breathing were easier. At the end of half an hour there was no doubt of it, and in addition the pallor and cold sweat had gone; the pupils were normal in size, the pulse was regular and perceptible, and the temperature had dropped from 101° to 100° F. This patient lived some months longer, but never again had such an attack, and the breathing was comparatively free to the end. The daily use of salted milk or beer had probably much to do with this.

The Topical Application of Corrosive Sublimate in Small-pox.—T. C. Osborn (*Texas Medical Journal; Medical Standard*, February) claims priority in the treatment of small-pox by the local application to the skin of watery solutions of corrosive sublimate. This method of treatment is based upon the belief that the disease is a typical skin affection due to infection by a specific germ. The mercurial applications, according to the author, may be made in any strength, up to a saturated solution even, without danger, except in cases of idiosyncrasy. In the eyes, nose, fauces, and ears a spray of peroxide of hydrogen is used.

The Treatment of Prognathism.—Rodrigues Ottolengui, M. D. S. (*Dental Cosmos*, November, 1899), in a paper read in August, 1899, before the National Dental Association, says that the chief purposes of his paper may be summarized as follows: 1. That by early interference and expansion in cases of protrusion the upper jaw may be made large enough to receive the unerupted teeth, thus in the end not only attaining correct occlusion and beautified external symmetry, but retaining all the dental organs. If such a case has been reported before it has escaped the author's notice. 2. The theory of removing the first permanent molars in cases of upper protrusion, with the idea that the jaws will fall back, is a false one, attended by many evils, not the least of which is the fact that subsequent regulation is made doubly difficult because at the age when it would be attempted, in accordance with the plan of delay, such waiting having proved to be in vain, the second permanent molars, which must serve as anchorage, would be as little developed as were the first permanent molars when the latter were extracted. But the main difficulty with this plan is the unnecessary loss of two important organs, for it must be remembered that the author is speaking of the extraction of perfectly sound teeth. 3. That with the use of proper fixtures, made of pure metals where they enter the mouth, perfect oral prophylaxis may be assured, even extensive regulation being possible without the least danger of inducing caries; and this is especially true if the fixtures are removable and can be boiled, and if such fixtures are not retained during meals, by which precaution it is certain that food can not be lodged upon them. 4. That the eruption of tardy teeth may be facilitated by operative measures.

The Treatment of Alcoholism.—Dr. C. W. Hidden (*Medical Brief*, February) reports very great success with a mixture of which the base is a strong fluid extract of powdered cinchona rubra, to which are added, with a due regard to dosage, avena sativa, nitrate of strychnine, and tincture of capsicum.

The usual time of treatment is about three weeks. The patient must not drink while taking the remedy. The desire for drink, the author says, begins to fade away on the fourth day. In one week there is complete absence of desire, and the patient begins to feel like himself. The improvement is most marked. The remedy is prepared fresh for each case. A second bottle is rarely needed, so complete is the killing of the appetite.

Tumbe, or Kroo Fly.—Mr. A. H. Hanley, F. R. C. S. I. (*Journal of Tropical Medicine*, January), writing from the west coast of Africa, says that the history of the above-named fly, from the time its egg is deposited in or on the skin, may be of interest. On June 7th last he saw at one of his out-stations a European who complained of a boil that would not heal. On examination Mr. Hanley detected a larva in it, which he removed and placed in gin, intending to examine it on his return home. After it had been in gin for at least twenty minutes the bottle was accidentally broken. As the larva, notwithstanding the length of time it had been in the gin, was still alive, Mr. Hanley put it into some cotton wool, and on his return home two hours afterward he placed it in a bottle containing hot boiled rice. It moved about the bottle for three days and then entered the chrysalis stage. Fourteen days after entering the chrysalis stage a fully formed fly appeared. The patient says the boil began to form fourteen days before he consulted the writer. Allowing that the irritation commenced within from twenty-four to forty-eight hours of the egg being deposited, the interval that elapsed between the deposit of the egg and the appearance of the fly would be, roughly, a month. These flies somewhat resemble a horse fly and are common in parts of the Niger Protectorate.

Unlooked-for Dystocia in Multiparæ.—Dr. Boland (*Boston Medical and Surgical Journal*, December 28th) sums up a paper on this subject as follows: 1. Certain multiparæ, after one or more easy deliveries, lose the power of natural parturition. 2. This is due to failure of the expelling forces in the uterus and abdominal walls. 3. Artificial delivery is imperative in such cases as promptly as a diagnosis is established. 4. Infant mortality is high in artificial delivery by the natural passages. 5. The human female is very tolerant of aseptic mechanical genital injuries. 6. Is suprapubic delivery justifiable in these cases when a positive diagnosis is established?

Injections of Calomel in Syphilis.—M. Danlos (*Gazette hebdomadaire de médecine et de chirurgie*, January 18th) recently showed to the Société de dermatologie et de syphiligraphie a man who had contracted syphilis in 1897 and had subsequently had iritis, terminating in almost complete amaurosis. He had had, in two different services, first twenty, then thirty injections of biniodized oil (*huile bi-iodinée*) without any other result than intense stomatitis. He subsequently entered the service of M. Danlos, who gave him an injection of calomel. From the fifth day there set in a notable amelioration. After four injections the cure was complete. M. Fournier related cases of a horrible phagedenic chancre of the tongue cured in eight days with calomel; a gumma of the larynx condemned to operation, but cured by one injection. Especially in glossitis, laryngitis, and certain cases of phagedæna had he found it serviceable. M. Besnier laid stress on the dose, saying that such cases as resisted injections of three quarters of a grain usually yielded to a grain and a half. M. Brocq recalled a case in which three quarters of a grain failing in any effect save the production of severe pain, a second dose of thirty one-hundredths of a grain was followed by an extraordinary amelioration. M. Danlos said that the pain was the greatest inconvenience of these injections. He tried the addition of orthoform, but had renounced its use since Epstein had observed accidents following its employment.

The Relative Intensity of the Second Sounds at the Base of the Heart.—Dr. Sarah Robinson Creighton (*Medical Record*, January 13th), as the result of the investigation of one hundred cases, arrives at the following conclusions: 1. Accentuation of the pulmonic second sound is almost invariable in young children and frequent in youth. 2. After the fortieth year of life, the reverse is the case, and it is then rare to find a pulmonic second sound as loud as the corresponding aortic sound. 3. Between the ages of twenty and thirty years, there is no marked accentuation of either sound. 4. In view of the above facts, it is obvious that when one speaks of an accented pulmonic second sound as corroborative of a diagnosis of heart disease, such accentuation must mean an increase in the loudness of the sound over that normally to be expected at the age of the patient in question. A comparison with the aortic second is not sufficient to settle the question. 5. Further, when we speak of an aortic second sound as accented, we must mean (in case of patients over forty years) more accented than it normally is. Once more, the simple comparison with the pulmonic second sound will not settle the question. The comparison must be with an ideal standard carried in the mind. 6. In interpreting the meaning of an accentuation of the pulmonic second in suspected mitral stenosis, one must bear in mind the age of the patient. The presence of a pathological accentuation of the sound can be determined only in relation to the degree of accentuation which is to be expected at the age of the patient in question.

Book Notices.

Care and Treatment of Epileptics. By William Pryor Letchworth, LL. D., Ex-President of the New York State Board of Charities, etc. Illustrated. New York and London: G. P. Putnam's Sons, 1900. Pp. x–1 to 246. [Price, $4.]

There are to-day few more important questions affecting medical charities than the care and treatment of epileptics by the State. The disease is very frequent and the outlook for recovery, in the vast majority of cases, is not hopeful. Sufferers from it are debarred from gainful occupations, because very few employers are willing or able to retain in their service persons who may at any time be seized with the frightful paroxysms to which epilepsy gives rise. At the same time many epileptics, with the single exception of occasional attacks, are well qualified, physically and mentally, to do ordinary or even skilled labor. It is manifestly wrong that such patients should be huddled together in almshouses, hospitals, or prisons. Yet such has been until recently the fate of most epileptics of the poorer classes. In such institutions, without occupation, without hope, and generally without proper care, it is little better than a living death that the epileptic has had thrust upon him. The solution of the problem has been found and is beginning to be put into operation. It is colonization. It is the grouping together in colonies and villages or on farms of the victims of this peculiar disease and providing means for their medicinal, hygienic, and general moral treatment, as well as for their occupation in purposeful pursuits.

The book now before us is a treatise on this, the rational and humane method of the care and treatment of epileptics.

It emphasizes the necessity of it, both from the point of view of the individual and from that of the State; it sketches the history of its development and gives in extensive detail the manner of its carrying out in this country and in Europe.

At the present time in the United States there are five institutions conducted, or about to be conducted, on these general lines—Ohio, New York, Massachusetts, New Jersey, and Texas. There is no special provision for epileptics by the federal government.

Ohio, in 1891, was the first State to establish a special institution. New York has the Craig Colony, authorized by law in 1892. Its foundation was largely effected by the vigorous and persistent efforts of Dr. Frederick Peterson, of New York. The Craig Colony is an ideal epileptic colony and farm. It comprises two thousand acres, on which is a village of about seventy houses. There are at present four hundred and fifty patients. Its ultimate capacity will be for two thousand patients. Ninety per cent. of the patients do some work. Brickmaking, carpentry, painting, printing, shoemaking, tailoring, upholstering, agriculture, and gardening form the main occupations at the present time, the labor being intended to provide an escape for surplus nervous energy. It has been found that properly directed muscular work reduces the number of attacks by half.

According to the last reports, the products of the colony labor amounted to from forty to fifty per cent. of the cost of maintenance. It is reasonable to hope that when the colony has been longer established and the labor becomes more skilled, the colony will be nearly self-supporting.

The Massachusetts institution was opened in 1898. The Pennsylvania institution is supported partly by the State and partly by private contributions.

In New Jersey and in Texas, appropriations have been made by the State, although the plan of the institution has not as yet been definitely decided upon.

Dr. Letchworth's book merits a large circulation among physicians, philanthropists, and economists.

Written by the author of *The Insane in Foreign Countries,* it embodies the results of great personal experience and diligent inquiry as to the best means of caring for the State's dependents, especially for those whose trouble results from affections of the brain.

It is hoped that it will stimulate and direct the growing interest in the colony plan of the treatment and care of epileptics until every State and every country has such an institution.

Operations-Vademecum für den praktischen Arzt. Von Dr. Edmund Leser, Professor an der Universität Halle, A. S. Mit 144 Abbildungen. Berlin: S. Karger, 1900. Pp. 190. [Preis, M. 5.]

This little book is intended for the practising physician as a ready-reference compend to enable him to easily "brush up" on the more common operative procedures. The author first considers the use of both local and general anæsthesia, then the treatment of aseptic and septic wounds, and finally the more common operations. The usefulness of the work is materially enhanced by the marginal index which greatly aids us in finding the subjects desired. To those who read German the little work will be most instructive and interesting.

The Cost of Living as Modified by Sanitary Science. By Ellen H. Richards, Instructor in Sanitary Chemistry in the Massachusetts Institute of Technology. First Edition. First Thousand. New York: John Wiley & Sons. Pp. 121. [Price, $1.]

This little book depicts the cost of living as modified by sanitary science and demonstrates what comforts can be enjoyed on the modest income of from fifteen hundred to three thousand dollars a year when our physical, mental, and spiritual needs are properly cared for. The final chapters contain suggestions as to the necessary clothing and the selection of food stuffs. A chapter on the organization of the household concludes this interesting little volume. The work is neatly got up and is well worthy of careful reading.

A Text-book of Physiological Chemistry. By Olof Hammarsten, Professor of Medical and Physiological Chemistry in the University of Upsala. Authorized Translation from the Author's Enlarged and Revised Fourth German Edition. By John A. Mandel, Professor of Chemistry and Physics, and of Physiological Chemistry, in the New York University and Bellevue Hospital Medical College. Third Edition. First Thousand. New York: John Wiley & Sons, 1900. Pp. viii–628. [Price, $4.]

The active progress in the science of physiological chemistry has required very frequent revision of works upon the subject that are intended for the use of students. As is generally known, Professor Hammarsten's book is one of the best in its class, and the appearance of a translation of the fourth German edition will be generally appreciated. The volume has been much added to as compared with previous editions, and thoroughly revised, but its plan and character are, happily, unchanged.

A Manual of Modern Surgery: An Exposition of the Accepted Doctrines and Approved Operative Procedures of the Present Time. For the Use of Students and Practitioners. By JOHN B. ROBERTS, A. M., M. D., Professor of Anatomy and Surgery in the Philadelphia Polyclinic, etc. Second Edition, revised and enlarged. Illustrated with Four Hundred and Seventy-three Engravings and Eight Plates in Colors and Monochrome. Philadelphia and New York: Lea Brothers & Co., 1900. Pp. 12–17 to 842. [Price, $4.25.]

THE author, as stated in his preface, has attempted to furnish us with a condensed treatise on the accepted surgical principles and operative methods of the present time. His success has been demonstrated by the early appearance of the second edition. It has been found necessary to make but few changes from the former edition. The same importance has been justly given the subjects of pathology and asepsis, an intimate knowledge of both being indispensable to the success of the surgeon. The author, however, has hardly met the latest ideas of the most modern pathologists in his handling of the subjects of inflammation and hyperæmia (congestion). The intimate relationship between these two conditions is obvious, and they can hardly be separated as distinct diseases unless we accept the conclusion that the former does not exist without the presence of an exciting micro-organism, while the latter is to be accounted for by any mechanical or constitutional disturbance which increases the amount of blood in a given part. Looking at hyperæmia from a clinical standpoint, we should consider it merely an excess of blood in a part, and should expect but slight if any constitutional symptoms, while inflammation is always associated with the migration of leucocytes and the escape of serum into the surrounding tissues, sometimes to be followed by suppuration, with more or less constitutional effects.

The chapters on fractures and dislocations are most instructive; the subjects are fully and cleverly considered. We might take exception, however, to the writer's radical treatment of fractures of the patella. He advises the use of Malgaigne's hooks as modified by Levis. Although they partially accomplish the object for which they were intended, yet we doubt if there are many of us who would care to brave the dangers of opening the joint by a punctured wound with the fear of infection, which has occasionally followed their use, and for similar reasons we should not feel justified in adopting the subcutaneous suture. If operative interference is selected, we much prefer the open method of suture, for with it any of the soft parts which might be likely to interfere with bony union may be got rid of and the fragments brought directly into observation for their perfect approximation, and, furthermore, it leaves a wound which can be freely drained should we unexpectedly meet with suppuration. Again, in fractures of the leg the author has shown a partiality for the use of the fracture box. Conceding that good results can be obtained by following all the necessary details for the proper adjustment of footpieces, straps, and compresses, we much prefer to simplify the treatment by adopting the use of the plaster or lateral wooden splint, which not only increases the patient's comfort during his confinement, but will also lessen his time in bed.

The work is fully illustrated; Röntgen pictures and other figures are found wherever it has seemed necessary to elucidate the text. There are also eight plates in color and monochrome which materially add to the appearance and usefulness of the book.

Although we have differed with the author in some of his views, we nevertheless think most highly of the volume, and, on the whole, heartily indorse it to the student of surgery as a safe and helpful guide to the approved doctrines and accepted surgical procedures of the day.

A Manual of the Practice of Medicine Prepared Especially for Students. By A. A. STEVENS, A. M., M. D., Professor of Pathology in the Woman's Medical College of Pennsylvania, etc. Fifth Edition, revised and enlarged. Illustrated. Philadelphia: W. B. Saunders, 1898. Pp. xv–16 to 519. [Price, $2.]

WE desire to call attention to the fifth edition of this excellent work, which is to be considered as one of the best of our smaller works upon the practice of medicine. Although the revision for this edition was completed in 1898, the volume before us lacks in no respect the essentials of recent knowledge, and we can therefore commend it as warmly as we have praised its predecessors.

BOOKS, ETC., RECEIVED.

The Principles of Treatment and their Applications in Practical Medicine. By J. Mitchell Bruce, M. A., M. D., F. R. C. P., Physician and Lecturer on the Principles and Practice of Medicine, Charing Cross Hospital, etc. Adapted to the United States Pharmacopœia by E. Quin Thornton, M. D., Demonstrator of Therapeutics, Pharmacy, and Materia Medica, Jefferson Medical College, Philadelphia. Philadelphia and New York: Lea Brothers & Co., 1900. Pp. xv–614. [Price, $3.75.]

A Practical Treatise on Diseases of the Skin. For the Use of Students and Practitioners. By James Nevins Hyde, A. M., M. D., Professor of Skin, Genito-urinary, and Venereal Diseases, Rush Medical College, Chicago, etc., and Frank Hugh Montgomery, M. D., Assistant Professor of Skin, Genito-urinary, and Venereal Diseases, Rush Medical College, Chicago, etc. Fifth and Revised Edition. Illustrated with One Hundred and Eleven Engravings and Twenty-four Plates in Colors and Monochrome. Philadelphia and New York: Lea Brothers & Co., 1900. Pp. 9 to 863.

The Nervous System of the Child. Its Growth and Health in Education. By Francis Warner, M. D. (Lond.), F. R. C. P., F. R. C. S. (Eng.), Physician to and Lecturer at the London Hospital, etc. New York: The Macmillan Company, 1900. Pp. xvii–233. [Price, $1.]

The Pocket Formulary for the Treatment of Disease in Children. By Ludwig Freyberger, M. D. Vienna, M. R. C. P. Lond., M. R. C. S. Eng., Clinical Assistant, Hospital for Sick Children, Great Ormond Street, etc. London: The Rebman Publishing Company, 1900. Pp. xv–208.

Report of the Commissioner of Education for the Year 1897 to 1898. Volume II, containing Parts II and III.

Transactions of the American Ophthalmological Society. Thirty-fifth Annual Meeting, held in New London, Connecticut, 1899.

The Thirteenth Annual Meeting of the Association of Executive Health Officers of Ontario. Held in the City of Ottawa on September 26, 1898.

The Fourteenth Annual Meeting of the Association of Executive Health Officers of Ontario. Held in the City of London on September 13 and 14, 1899.

Seventeenth Annual Report of the Norwegian Lutheran Deaconesses' Home and Hospital. From December 1, 1898, to December 1, 1899.

Contributions from the Physiological Laboratory of the Medico-Chirurgical College of Philadelphia for 1898 to 1899. By Isaac Ott, M. D.

The Old New York Hospital. An Historical Sketch. By D. B. St. John Roosa, M. D. [Reprinted from the *Post-Graduate.*]

Rotators of the Femur and their Other Functions. By E. W. Thomas, M. D., of Philadelphia. [Reprinted from the *Philadelphia Monthly Medical Journal.*]

A Case of Atrophy of the Optic Nerves following Hæmorrhage from the Stomach, with a Consideration of the Causes of Post-hæmorrhagic Blindness. By Samuel Theobald, M. D., of Baltimore. [Reprinted from the *Johns Hopkins Hospital Bulletin.*]

Report of One Hundred Consecutive Cases of Cataract Extraction. By Samuel Theobald, M. D. [Reprinted from the *American Journal of Ophthalmology.*]

A System of Medicine. By Many Writers. Edited by Thomas Clifford Allbutt, M. A., M. D., LL. D., D. Sc., F. R. C. P., F. R. S., F. L. S., F. S. A., Regius Professor of Physic in the University of Cambridge, etc. Volume IX. New York: The Macmillan Company, 1900. Pp. xii–3 to 998. [Price, $5.]

Imperative Surgery. For the General Practitioner, the Specialist, and the Recent Graduate. By Howard Lilienthal, M. D., Attending Surgeon to Mount Sinai Hospital, New York City. With Numerous Original Illustrations from Photographs and Drawings. New York: The Macmillan Company, 1900. Pp. xvi–412. [Price, $4.]

A Manual of Surgery. By Charles Stonham, F. R. C. S. Eng., Senior Surgeon to the Westminster Hospital, etc. In Three Volumes. Volume I.—General Surgery. Pp. xiii–343. Volume II.—Injuries. Pp. xv–383. Volume III.—Regional Surgery. Pp. xxi–725. New York: The Macmillan Company, 1900. [Price, each volume, $2.]

Nervous and Mental Diseases. A Manual for Students and Practitioners. By Charles S. Potts, M. D., Instructor in Nervous Diseases, University of Pennsylvania, etc. Series edited by Bern B. Gallaudet, M. D., Demonstrator of Anatomy and Instructor in Surgery, College of Physicians and Surgeons, Columbia University, New York. Illustrated with Eighty-eight Engravings. Philadelphia and New York: Lea Brothers & Co., 1900. Pp. 3 to 455. [Price, $1.75.]

Gynæcology. A Manual for Students and Practitioners. By Montgomery A. Crockett, M. D., Adjunct Professor of Obstetrics and Clinical Gynæcology, Medical Department, University of Buffalo, etc. Illustrated with One Hundred and Seven Engravings. Philadelphia and New York: Lea Brothers & Co., 1900. Pp. 3 to 368. [Price, $1.50.]

Golden Rules of Physiology. By I. Walker Hall, M. B., Ch. B. (Vict.), Senior Demonstrator in Physiology, Owens College, etc., and J. Acworth Menzies, M. D., C. M. (Ed.), Late Senior Demonstrator in Physiology, Owens College, Victoria University, etc. Golden Rules Series. No. VI. London: Simpkin, Marshall, Hamilton, Kent, & Co., Ltd., 1900. Pp. 5 to 80. [Price, 1s.]

Healthy Exercise. In Three Parts. By Robert H. Greene, M. D. Illustrated. New York and London: Harper & Brothers, 1900. Pp. v–165.

Die Technik der speziellen Therapie. Ein Handbuch für die Praxis. Von Dr. F. Gumprecht, Professor in Jena. Mit 182 Abbildungen im Text. Zweite neu durchgesehene und vermehrte Auflage. Jena: Gustav Fischer, 1900. Pp. xii–354.

Die Orthopädie im Dienste der Nervenheilkunde. Von Prof. Dr. Albert Hoffa, in Würzburg. Mit 80 Abbildungen im Text. Jena: Gustav Fischer, 1900. Pp. 5 to 159.

Transactions of the Mississippi Valley Medical Association. Twenty-fifth Annual Session, held in Chicago, October 3, 4, 5, and 6, 1899. Volume I.

Transactions of the Louisiana State Medical Society. Twentieth Annual Session, held in New Orleans, May 16, 17, and 18, 1899.

Forty-eighth Annual Report of the Directors of the New York Ophthalmic Hospital. For the Year ending September 30, 1899.

Sarcoma of the Orbit. By Alexander W. Stirling, M. D., of Atlanta. [Reprinted from the *Ophthalmic Record.*]

Albuminuria and its Relation to Diseases of the Eye. By Alexander W. Stirling, M. D. [Reprinted from the *Ophthalmic Record.*]

Practical Points in the Use of the X Ray. By Louis A. Weigel, M. D., of Rochester. [Reprinted from the special X-ray Number of the *Philadelphia Medical Journal.*]

Transitory Disturbances of Consciousness in their Medico-legal Aspects. By William Hirsch, M. D. [Reprinted from the *Medical Record.*]

The Municipal Control of Prostitution in the United States. Some Opinions as to Methods adapted to Municipal Care and Control of Prostitution and Venereal Diseases. By Isadore Dyer, M. D. [Reprinted from the *New Orleans Medical and Surgical Journal.*]

Dermatitis Gangrænosa Infantum. By H. Judson Lipes, M. D., of Albany. [Reprinted from the *Albany Medical Annals.*]

Diplococci—A Cause of Erysipelas. By G. E. Pfahler, M. D., of Philadelphia. [Reprinted from the *Philadelphia Medical Journal.*]

The Animal Cell as a Psychical Entity. By Albert Miller, A. B., of St. Louis. [Reprinted from the *Medical Review.*]

Touching the Symptoms and Diagnosis of the Epidemic of Modified Small-pox Prevalent in Some Portions of the United States. An Open Letter to the State Board of Health of Illinois. By James Nevins Hyde, M. D., of Chicago.

Miscellany.

The Adirondack Cottage Sanitarium.—In his fifteenth annual report the president, Dr. Edward L. Trudeau, says that there has been a steady increase in the number of cases treated, and the results obtained have been quite up to those before recorded. The increase in weight for patients remaining over three months has been somewhat in excess of that noted in previous years, the report showing an average gain of fourteen pounds and a half for a hundred and ten out of a hundred and twenty cases belonging to this class. Applications for admission have increased to such an extent that a large waiting list is constantly on hand, and at one time as many as thirty patients who had passed the necessary examination were waiting in the village for available vacancies. This increase of applicants has accentuated the need of a reception hospital somewhere in Saranac Lake village for patients with more advanced disease who can not be taken at the sanitarium. During the entire year, but especially during the summer months, scores of invalids in the last stages of the disease come to Saranac Lake village, says Dr. Trudeau, either with scanty purses or wholly without funds, full of the new hope which the prospect of admission to the institution has brought them, only to meet the bitter disappointment of finding they can not be taken in because their cases are beyond the reach of treatment. As they are often too sick to care for themselves, without money and without friends, their position is most pitiable, and they seek, often in vain, a place to await the inevitable end. A separate hospital building that would afford a shelter to these stranded and helpless human beings would indeed be a fitting complement to the work of restoration attempted at the sanitarium, and Dr. Trudeau thinks that in the near future the same generosity which has made possible the growth and development of the institution will furnish as well a shelter for those who are beyond the reach of its treatment.

The German Medical Society of the City of New York.—At the next meeting, on Monday evening, March 5th, specimens of cor bovinum and pulmonary infarction will be shown and remarks made on the case; Dr. Joseph Fraenkel will read a paper entitled The Prognosis of Hysteria; and Dr. L. Schumann-Leclercq, of Karlsbad, will present one on The Influence of Diet on Acetonuria.

Antonio Maceo's Skull.—According to the *Lancet* for February 3d, the *Revista de medicina y cirugía*, of Havana, of unspecified date, publishes an "anthropological study," by Dr. Montalvo, Dr. de la Torre, and Dr. Montane, of the skull of the Cuban patriot, Antonio Maceo. The most noteworthy point is the existence of an interparietal or, as it is sometimes termed, an "Inca" bone, from the theory that it was universal among, and distinctive of, the old Peruvian race. This, however, was shown by Anoutchine to be erroneous, for after examining many thousands of skulls in various museums he found the bone in only 6.8 per cent. in Peruvians, in 1.5 per cent. in negroes, and in 1.3 per cent. in Americans. Maceo was, of course, of mixed race. The general character of the cranium approximates to that of the white race and indicates a man of remarkable capacity. The rest of the skeleton inclines more to the negro type and shows that he must have been a man of Herculean strength.

The Extermination of Rats.—Apropos of the editorial in our issue for February 24th entitled Kill the Rats, we read in the *Medical News* for February 10th that in Denmark a society has been organized under the name of the National Danish Rat-exterminating Society. The record of one week's work announces the death of ninety thousand rats. A crematory is being planned for the purpose of disposing of their carcasses.

The Medical Examiner.—The February number of the *Medical Examiner* announces editorially that henceforth this paper will be known as *The Medical Examiner and General Practitioner.*

The New York Academy of Medicine.—At the last stated meeting, on Thursday evening, the 1st inst., the programme included the following papers: Cancer of the Larynx, by Dr. D. Bryson Delavan; Cancer of the Gastro-intestinal Tract; Diagnosis and Treatment, by Dr. B. Farquhar Curtis, and The Treatment of "Inoperable" Cancerous Tumors, by Dr. William B. Coley.

At the next meeting of the Section in Pædiatrics, on Thursday evening, the 8th inst., Professor John Adriance will read a paper on The Chemical Composition of Milk and Cream, which will be discussed by Dr. J. E. Winters, Dr. W. B. Anderton, Dr. L. E. Holt, Dr. H. D. Chapin, Dr. V. Adriance, and others. Patients will be presented and new instruments and specimens will be exhibited.

The University Medical Magazine.—It has been announced that the board of trustees of the University of Pennsylvania has finally secured entire control of the *University Medical Magazine,* and that in the future it will be published under the auspices and with the support of the university. Heretofore the magazine has been in the hands of a stock company, over which the university had no control. Owing to the necessary delay attending the transfer of the property, and also owing to the time required for a thorough reorganization, it will be impossible to issue numbers for January or February; the first number of the year will appear in March. It is proposed that the magazine shall hereafter be the organ of the department of medicine, and that it shall be creditable to that department. In every way its readers will be kept fully informed as to the work that is being done in the clinic, the laboratory, and the hospital by the members of the teaching and hospital staff. Contributions upon subjects allied to medicine will be secured from those engaged in such work at the university. The liberal policy adopted by the managers will enable the magazine in the future to obtain at all times the most desirable material for publication. Dr. Charles H. Frazier has recently been appointed editor, and will at once assume the duties of his office.

The Sander Prize.—Rules for competition for the gold medal of the value of one hundred dollars, offered by Mr. Enno Sander, of St. Louis, for the best paper on military surgery, to be presented at the annual meeting of the Association of Military Surgeons of the United States:

1. Competition to be open to all members of the association.

2. Each competitor shall send three copies of his essay, in a sealed envelope, to the secretary, Lieutenant-Colonel Charles Adams, Central Music Hall, Chicago, on or before April 15, 1900. The essay must be strictly anonymous, but the author shall adopt some *nom de plume* and sign the same to the essay, followed by a figure corresponding with the number of pages of the manuscript. A sealed envelope bearing the *nom de*

plume on the outside and inclosing full name and address shall accompany the essay. This envelope to be opened in the meeting of the association after the decision of the committee on the prize essay has been received.

3. The committee will designate the essay worthy of the prize, and also in their order of merit those deserving of honorable mention. Should the committee deem proper, it may recommend neither prize nor honorable mention.

4. The successful paper shall be published in the *Transactions* of the association.

Colonel N. Senn,
Surgeon-General, I. N. G.,
Major A. C. Girard,
Surgeon, U. S. A.,
Captain George W. Woods,
Medical Director, U. S. N.,
Committee.

The Grain of Truth with the Grain of Salt.—Dr. E. H. Martin (*Memphis Medical Monthly*, December, 1899), in his presidential address before the Tri-State Medical Association of Mississippi, Arkansas, and Tennessee, delivered at Memphis in November, after referring to popular superstitions, homœopathy, eclecticism, etc., said:

"In many of the more common fads of the day—osteopathy, Christian Science, faith cures, and gold cures—we find one shining grain of truth, the very grain unrecognized by the devotees of each cult. Never the truth as they claim it. Each is, as taught, a gigantic fraud, but each has done great good to a limited class of patients. And each is useful to us inasmuch as it compels our thought to the effect of mind upon matter.

"Objection may be raised to what may be misconstrued as my indorsement of these frauds—they may do more harm than good. I think they do. But the grain of truth in the real underlying principle of each is what I indorse. As to our having recourse to them in practice, that is a matter of personal professional conscience. The excuse for our existence as a non-producing class is that we may be of service to the producers. When you take charge of a case you owe it to the patient that you, as a practitioner of broad, regular medicine, shall search the universe for a means of relief for his malady. Not only every material drug that can be of benefit is his due, but every influence, material or immaterial. If a fraud will help him, and *you* can not give the same help, then in common justice you must prescribe the fraud. You must cure or relieve by any means on the face of the earth.

"Fortunately, we are not called upon often to prescribe frauds, but did you ever send a friend to the Keeley cure? Yes, you have. You knew when you did it that the cure would not depend on the drugs used, but upon the fact that your patient would be thrown in an atmosphere of quitting the liquor habit, that he, as an average American and a human being, would take his money's worth of quitting after he had paid $100 to quit. So you sent him on to the most prosperous fraud of the century. Did you ever send a patient to Christian Science, so called, though neither Christian nor science? Maybe not. Well, I must confess that I have, on one or two occasions. Whenever you find a case of the hydra-headed monster, hysteria, it is your duty to do everything possible to relieve it. If your drugs or placebos can not influence that mind diseased, if your efforts at suggestion through friends, priest, minister, husband, lover, and relations all fail, you are not excused from duty. For you are a practitioner of regular medicine, which owns every drug and influence on earth. You belong to that patient body and soul until he is relieved, or relieves you by leaving you. If there is an African fetich, a Chinese girl, a Hindu idol, or a Voodoo charm that will help his malady, go and get it. Charcot did not hesitate to send selected cases to Lourdes; why should we turn up our professional noses at lesser frauds?

"One of the most striking cures in history came under my own observation when I first began to study medicine. A young woman, who happened to be an ardent Catholic, a patient of my preceptor, was afflicted with the most severe form of hysteria. For six years or more she had not walked, from paralysis of both legs; for a lesser time she had been blind, with perfect eyes. Her case was recognized as hysteria from the beginning, yet she 'suffered many things and wasted her substance on physicians.' I took a small part in her cure. I held my preceptor's horses in front of the priest's house during an interview. How much the priest knew, how much my preceptor showed his hand, I did not know. But it came to pass soon after that this young woman began to hope for a cure through a bottle of water from the fountain of Our Lady of Lourdes, as she happened to have a friend returning from that place. How many masses were said I do not remember. The bottle of water came, and on an Easter Sunday, after weeks of prayer and preparation, the young woman was carried on a litter and laid in front of the altar. The bottle was opened, the holy contents were sprinkled on her, and she arose and walked. Her sight was restored. A miracle was performed. My preceptor received no credit; he and the profession were rather hooted at, but he expressed a quiet satisfaction at the result.

"And whenever I find a case of hysteria that can not be influenced through faith in bread pills, that can not be influenced by any ordinary social means, that can not be hypnotized (and few hysterics can be), if I need any excuse for sending such to Christian Science, or any other fake that suits the case, I must say that I have only one brilliant cure to offer as that excuse. The other few so sent were failures. But that one is excuse enough.

"I hope I have made it clear that I am not indorsing fakes; but whenever a fallacy flourishes like a green bay tree there is a grain of truth at the roots; the false part is only a wayward human graft. Go after that truth, find it, use it; it is a part of our inheritance. The truth underlying the fads of which we have been speaking is simply that of the power of the mind over the body. That is real, and we must use it."

The Psychical Element in Disease.—The *Columbus Medical Journal* for January 5th quotes the following translation of an Arabic legend by R. R. Bowker from the *Century* for December, 1899:

The Spirit of the Plague entered the gate.
One, watching, asked, "How many wilt thou slay?"
"A thousand," spake the Spirit, "is my quest."

The Plague made end. The Spirit left the gate.
The watcher cried, "Ten thousand didst thou slay!"
"Nay, one," the Spirit said, "Fear killed the rest."

Original Communications.

SIX CASES OF CHRONIC HEART DISEASE SUCCESSFULLY TREATED BY THE SCHOTT METHOD.

By VICTOR NEESEN, M.D.

THE baths of Nauheim and the treatment of Schott are simultaneously becoming more famous year by year. After my first visit to Bad Nauheim in 1897 my observations led me to predict that the place would have a remarkable growth, in spite of the total lack of advertising enterprise on the part of the government. The fame of Schott and Nauheim (and the names are inseparably linked) has been spread in the first place by grateful patients who were astonished by being cured or improved after they had been given up perhaps by their home physicians; in the second place by physicians who came, perhaps, for their own cure and went away firm believers in the efficacy of the waters, and in most cases staunch disciples of Schott and his treatment.

In the course of my four months' sojourn in Nauheim this year, through the courtesy and kindness of Professor Schott, I have observed and examined numbers of his patients, frequently in company with Dr. Heftler, of Paris, to whom I am indebted for much of the material used in this article—for Dr. Heftler is a fluent linguist as well as a skillful diagnostician, and patients come to Nauheim from all quarters of the globe—from Siberia to Chili, from Canada to Australia.

Of all the cases I have seen and examined I have selected six which seemed to me best to illustrate the various conditions of cardiac debility which are amenable to the Schott treatment.

I shall first outline in as brief a manner as possible the general principles of the Schott treatment.

It lies within my memory when the generally accepted treatment for all forms of cardiac insufficiency was "rest in bed" and digitalis, or strophanthus, or sparteine, singly or *en suite*. It must have been a jar to the medical mind when Professor Th. Schott and his late brother, Dr. August Schott, advanced the theory that careful, systematic exercise, coupled with certain stimulating mineral baths, was a more scientific and better way of treating diseases of the heart than was the rest treatment theretofore in vogue. Suffice it to say that the brothers Schott had a long and hard fight before they finally convinced the medical world that their new methods were better than the old.

The means employed by Professor Schott in the treatment of cardiac affections are first, baths; and, second, exercises. The baths have all gradations of strength from the weakest (one per cent. of salt) to the strongest (the flowing carbonic-acid baths). The exercises are called *Widerstandgymnastic*, or resistance movements; and, as they are, or ought to be, given by a trained operator, they can be made with various degrees of resistance, and thus are adaptable to the weakest or the strongest patient. Drugs are very seldom if ever employed by Professor Schott.

Of course, all patients are not treated alike; everything depends upon the nature and severity of the case. But the customary procedure is as follows: The baths are begun with a strength of from one to two per cent. of salt and a temperature of 33° C. The duration of the immersion is usually started at five or six minutes. This bath is prepared from the water of the natural spring after it has been stored in a reservoir for some time, and the carbon dioxide allowed to escape. The addition of a third of the volume of fresh hot water reduces the percentage of salt, at the same time raising the temperature from 30° to 33° C.

After every bath the patient is required to lie down —preferably undressed in bed—for an hour or more.

From such a beginning the strength of the baths is gradually increased and the temperature lowered by lessening the amount of fresh water added, until the natural temperature and saline strength of the spring are reached. The saline strength may then be increased as gradually as is desirable by the addition of the mother lye (rich in calcium chloride) obtained from the salt works.

The next step is to the Sprudel or carbonic-acid bath, and then to the Strom Sprudel or flowing Sprudel bath—the strongest form of tub bath in existence.

The baths are not given continuously from day to day without a break. A patient can seldom stand more than three or four baths in succession. An interval of a day between every two or three baths is customary.

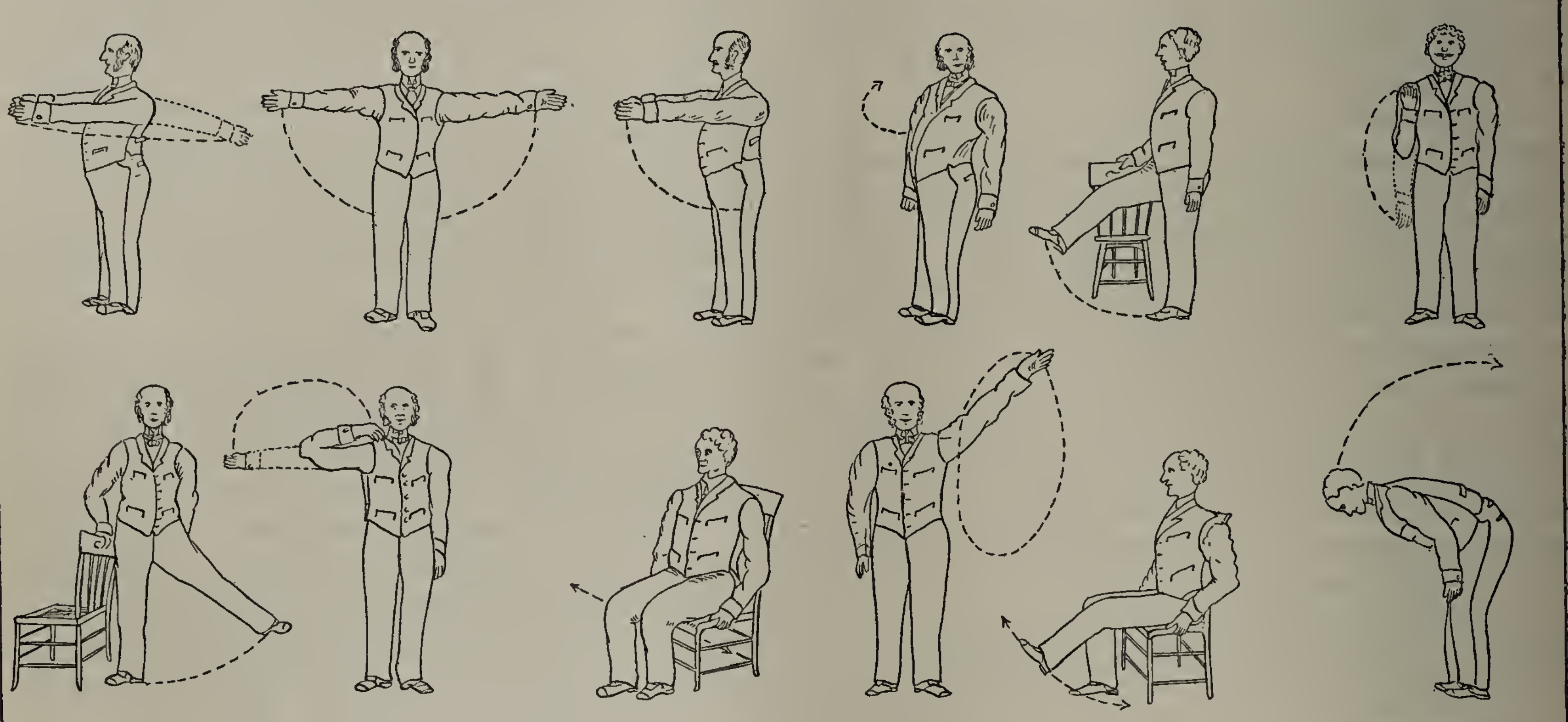
The effect of the baths is to strengthen the heart's action. This has been indubitably proved many times by the most careful experimentation. The effect is quite similar to that of digitalis. The systole becomes stronger and sharper and the diastole longer. Thus the pulse rate drops, and I have seen it drop twenty beats in the minute after a single bath of ten minutes' duration. In cases of bradycardia, on the other hand, the pulse rate increases. With the decrease in the rate of the pulse, the volume becomes fuller, and in many cases, if there is intermittence present, it disappears.

The *modus operandi* which produces this effect is explained by Professor Schott in a clever manner. The salt and carbon dioxide in the water act on the terminal nerve filaments in the skin. This action may be a stimulation or an irritation. When baths are continued too long, or are given too strong, they produce an irritation which is best remedied by a rest from the treatment for some days or weeks.

This external stimulation then travels along the afferent nerves to the nerve centres, by which road it reaches the circulatory nerve apparatus—the pneumogastric, vasomotor, etc. In other words, there is a reflex action set in motion, the external stimulus being the salt and carbon dioxide, the effect being inhibition of the circulatory nerve apparatus.

Of equal importance with the exact adaptation of the baths is the correct administration of the Schott exercises. Their effect on the heart is, or should be, very similar to that of the baths. They increase the force and lower the frequency of the beat, except in cases of bradycardia, where they increase the force and raise the frequency. As a general rule, however, it may be said that where the exercises raise the pulse they are doing harm. I have seen a great deal of harm result from an ignorance of the proper manner in which the Schott exercises should be given. Thus one can not be too particular in selecting an operator who is intelligent and careful, and who has been trained in the Schott methods.

The cases which follow illustrate to some degree the variety of cardiac affections benefited by the Schott treatment. It may be further stated that there is no case of cardiac pathology that can not be improved more or less by this treatment. A word of warning, however, is necessary. In cases of advanced arteriosclerosis and of aortic aneurysm, the greatest care and skill are essential to avoid an untoward result. Of course, in all cases of acute heart disease, and especially when fever exists, neither baths nor exercises can be given.



Diagramatic Plan of the Schott Exercises

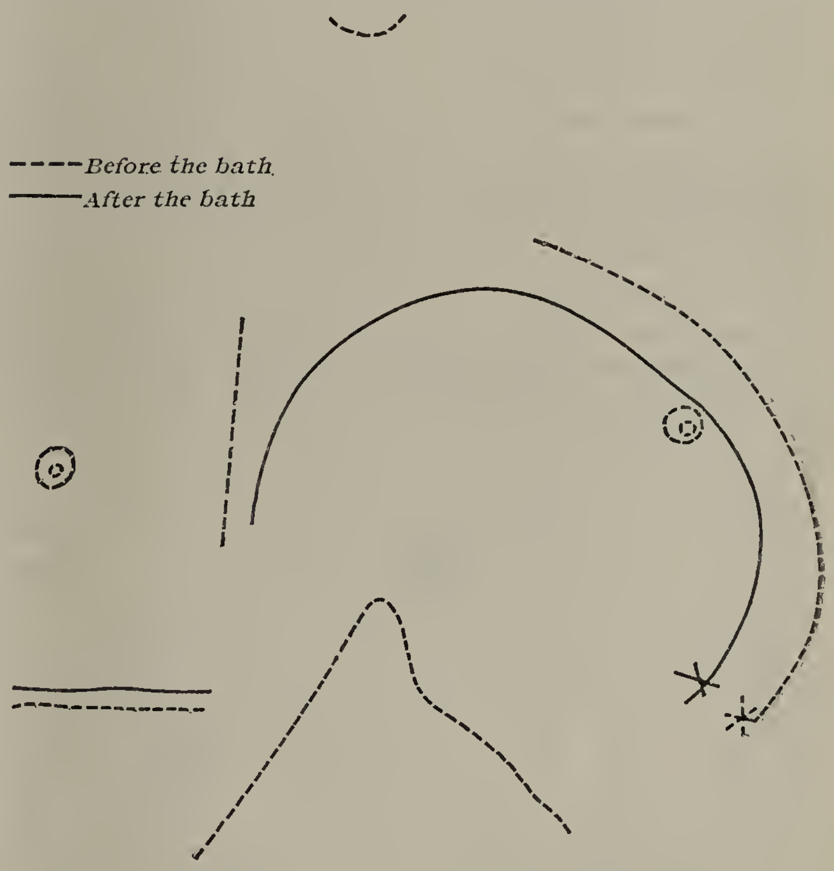
The theory by which Professor Schott explains the effect of his exercises is this: The slow muscular movements cause an increased flow of blood to the muscular structures and the extremities. This is frequently proved by a patient's hands and feet getting warm in the course of the exercises. The dilated and overburdened heart is thus relieved of part of its load, and, although it really has more work to do, it does it with less difficulty. Thus each day the skeletal muscles grow stronger, and with them the heart muscle keeps pace. Besides this there is a reflex action on the motor nerves, produced by the slow movements of the muscles, very similar in effect to the reflex action on the sensory nerves caused by the baths.

Case I.—Mr. J. B. A., aged forty-one, American. Aortic insufficiency with relative mitral insufficiency, cardiac hypertrophy, and dilatation. The patient's father had inflammatory rheumatism and died of heart disease. The patient at twelve years of age had inflammatory rheumatism every winter for six years. The heart was then found to be affected. At nineteen years he became short of breath after slight extra exertion, and had palpitation of the heart after dancing or other unusual exercise. From twenty-one to twenty-eight years of age he worked very hard as a broker and was more or less run down in health. He took cold easily, and it always took the form of inflammatory rheumatism. In 1893 his heart began to trouble him. It was examined and found to be dilated and enlarged. A mitral murmur was present. He was given a tonic and advised to restrict his work, which he did. In 1897 he decided to take a trip abroad, and in making up his itinerary he accidentally heard of Nauheim. He asked his doctor if it would help him to take the treatment there, and was told the warm baths would positively injure him. However, in passing by Nauheim, he was tempted to stop off and take a look at the place, with the result that he stayed there the balance of the summer and took a full course of baths. His heart decreased in size an inch all around. After leaving Nauheim the patient traveled all around Europe for two months before returning to America. He immediately visited his doctor, who was astonished at the difference in the size and sounds of his heart. In 1898 the patient had another severe attack of rheumatism, which lasted two months, but it did not undo the effect of the Nauheim baths; in other words, his heart compensation was not destroyed. In 1899 the patient returned to Nauheim, more as a precautionary measure than anything else. Examination revealed heart enlargement (hypertrophy), with slight dilatation. A strong, smooth murmur, audible over all the cardiac area, in time diastolic over the aorta, systolic over the apex. It was loudest at the base. Second sound at apex normal. The pulse was intermittent every third or fourth beat, rapid, and irregular. The patient took a full course of baths (twenty of the thermal and twenty of the Sprudel).

Result: Size of heart decreased to nearly normal. Diastolic murmur very much quieter and heard only over base. Systolic murmur at the apex gone. Pulse regular, of good volume, and without intermittence. Compensation fully established.

Case II.—Madame de L., aged fifty-one, Parisian. Mitral insufficiency, aortic stenosis, angina pectoris. In November, 1891, the patient had influenza with fever. She had no adequate convalescence, owing to pressure of business. Had great cares and responsibilities. In March, 1892, had bronchitis, and heart trouble was then recognized. In May, 1892, she was sent to Nauheim, and her physical condition recorded as follows: Slight dilatation of right ventricle and from two centimetres to two centimetres and a half dilatation of left ventricle. Was blue in the face; became easily out of breath; could not climb a flight of steps or go up a small hill; was sleepless; pulse intermittent and very feeble; from time to time tachycardia; œdema of legs; anæmia. She took a course of treatment covering six weeks, after which her pulse was rhythmical, full, 72 to 76. Heart normal in size, color of face normal, sleeps well, and can walk up the Johannisberg (the "test hill" of Nauheim, over twelve hundred feet high) without fatigue or shortness of breath. In 1893 the patient returned to Nauheim for a second cure, and had a good result. From 1893 to 1896 her heart did not bother her, and she did nothing for it. In order to reduce her flesh she took thyreoid tablets. The result: She became thin, pale, jaundiced, and had attacks of angina pectoris. In 1897 she returned to Nauheim, and felt so well afterward that she did not again return until 1899. Examination revealed a loud systolic murmur at the apex. Apex beat so feeble as not to be palpable. Rough systolic murmur over the aorta. Left border of the heart half an inch outside nipple line. Right border middle of sternum. Suffered from dyspnœa and anginal pains on attempting to climb stairs. A course of eighteen thermal and fifteen Sprudel baths was taken. Examination then showed left border of the heart at nipple line; apex beat palpable in fifth intercostal space; murmur at apex soft and faint, murmur at aorta same; can walk upstairs or go up hill without either pain or much dyspnœa.

Case III.—Count Wilhelm P. R. E., aged fourteen, Russian. Mitral insufficiency and stenosis, hypertrophy and dilatation. Had rhachitis when a baby. In 1898 had rheumatism in knees and ankles for six months. In March, 1899, was in bed two weeks on account of severe pains in cardiac region. After leaving bed he could not walk fifteen steps without experiencing palpitations of the heart. Had to stop and rest four or five times in going up an ordinary flight of stairs. Had œdema of feet and ankles every evening. In August, 1899, he came to Nauheim. Was examined by Dr. Heftler and myself just before immersion in a thermal bath of 33° C. Inspection: Whole cardiac region pulsating violently. Apex beat very strong in sixth intercostal space. Percussion: Left border of heart two inches and a half outside nipple line; upper border, second intercostal space; right border, right side of sternum. Auscultation: Rough systolic murmur heard all over heart. Second pulmonary sound considerably increased. Aortic sounds clear. Pulse 112, irregular, and occasionally intermittent. The bath was of ten minutes' duration. An outline of the heart was traced before and after the bath, and is here reproduced. After five minutes in the tub the pulse was 106; after ten minutes it was 98, and much more regular and fuller than before. Patient took a full course of baths, consisting of twenty-four thermal and twenty Sprudel baths. The resulting change in his condition was phenomenal. The size of the heart had decreased nearly two inches in each direction. There was no violent throbbing over the cardiac area. The heart pulsations were quiet, regular, rhythmical, from 80 to 100 to the minute. The apex beat was in the fifth intercostal space. Murmur still present, but softer. Patient can walk two miles without unusual fatigue; can climb stairs without resting and without dyspnœa.



Case IV.—Lord X., aged forty-nine, Englishman. Myocarditis and angina pectoris. Had congestion of the lungs twelve years ago. In April, 1897, had influenza, bronchitis, and neurasthenia. Insomnia was a prominent symptom. Thinks he did not sleep for three weeks at a time. Was seen by a specialist, who diagnosticated acute myocarditis and advised a trip to Nauheim. Before reaching Nauheim he had several attacks of angina pectoris and thought he came near dying. Upon arriving at Nauheim he was unable to walk; had to be pushed about in a chair. Had cardiac asthma so bad he could not speak above a whisper. Examination of his heart at this time revealed: Left border of heart four centimetres outside of nipple line; right border at right side of sternum. Sounds very weak, scarcely audible. Pulse intermittent, weak, thready. General appearance pale, flabby, anxious. His course of treatment lasted three months. When he returned home the left border of his heart was still one centimetre outside nipple line; the right ventricle was normal. He could walk about on level ground and had no attacks of angina or asthma. During the winter he had influenza and returned to Nauheim May 15th. Examination of his heart showed dilatation, two centimetres and a half, both left and right. Pulse, however, was of good volume and not intermittent. Could not walk more than a few steps without tachycardia. Took twenty-four thermal and twenty Sprudel baths. At time of departure examination showed: Left border at nipple line; right border, middle of sternum; apex, fifth intercostal space; all sounds normal but a little feeble.

Case V.—Monsieur C., aged twenty-six, Parisian. Mitral insufficiency, hypertrophy, and dilatation. When eleven years old had acute articular rheumatism for three months, which left him unable to play with his schoolmates on account of dyspnœa and pain in his heart. At twenty years he could ride horseback and engage in other sports without bad effect. At twenty-two years he became an agriculturist and worked too hard. Insomnia developed. He could sleep only on his right side. He consulted Professor M. at Wurtzburg, who found him in such a bad state that he placed him in bed for three months. During this time he took no medicine. He asked Professor M. if he should go to Nauheim, to which the professor replied: "No, your case is too serious." In March, 1897, he saw Professor M. again, who sent him to the Black Forest. In August, 1897, he came to Nauheim. Examination revealed: Left border of heart an inch and a quarter left of nipple line; right border, half an inch to right of sternum. Apex in sixth intercostal space. A very loud, coarse murmur heard at the base, also at the apex, and still audible outside nipple line. Whole cardiac area pulsating violently—extending nearly to axillary line. Pulse very small, irregular, and 100 or more to the minute. Patient excited, nervous and sleepless, and breathless on going up hill. In seven weeks he took thirty-two baths, after which he could walk for three hours at a stretch, going up the Johannisberg with comparative ease. Slept well. Dilatation of right ventricle gone; left ventricle still dilated a centimetre and a half. During following winter his heart did not bother him even when he went hunting. In 1898 he returned to Nauheim and took a course of baths. Was fond of cold bathing, and without consulting Professor Schott took his baths cold. Result: Angina pectoris. Upon raising the temperature of baths this disappeared. In the spring of 1899 saw Professor M. again, who did not recognize his heart, it had changed so. He felt so well he could bicycle for an hour without any disturbance. Took another course at Nauheim to further strengthen his heart. When he left, the following condition was shown by examination: Systolic murmur at apex; left border, half an inch outside nipple line; right border, left side of sternum; apex, fifth intercostal space; second pulmonary sound normal.

Case VI.—H. B. C., aged sixty-seven, American. Myocarditis with fatty infiltration, arteriosclerosis, and angina pectoris. Born and brought up on a farm, the patient always had a healthy, robust constitution. Worked hard in early life and amassed a fortune. Then let up a little, lived well, and took very little exercise. Grew stout, especially about the abdomen. Heart disease first discovered after an attack of angina pectoris which was brought on by walking up hill against a stiff breeze after a hearty meal. Frequent attacks followed, sometimes accompanied by great mental depression and physical weakness. Arrived in Nauheim in May, 1899. Condition: Heart greatly enlarged from hypertrophy and dilatation. Heart sounds soft and indistinct. Pulsations feeble and very slow (fifty to the minute). Abdomen very fat and somewhat distended. Liver somewhat enlarged. Stomach slightly dilated. Face pale, flabby, at times cyanotic. Could not go up three or four steps or walk three or four yards without dyspnœa and pain in cardiac region. Could not sleep, was mentally depressed, and was fast developing into a state of melancholia. The weakest kind of baths were at first ordered for him, with an interval of every other day. The strength and duration were gradually increased until he was taking the strongest kind of thermal baths, with mother-lye added. These had such a pronounced irritant effect on his nervous system that a rest was deemed advisable, and he was sent to Switzerland for a month. Upon returning he went through the regular course up to the flowing Sprudels, which he could not take on account of the marked irritant effect produced on his nervous system. When he left Nauheim his heart had decreased in size nearly two inches all around. The heart sounds were loud and distinct, and the pulsations were strong and from 65 to 75 to the minute. The abdomen had decreased in size, the stomach was no longer dilated; the face had a healthy color, and the patient could walk five miles a day, could ascend the Johannisberg with ease, and needed no assistance in going up a flight of stairs. The patient, however, still complained at times of sleeplessness and mental depression, which Professor Schott assured him would pass away after he left Nauheim, provided he led a quiet life.

This irritant effect of the Nauheim waters on the nervous system of some individuals is frequently observed among patients. It amounts almost to an idiosyncrasy. When it occurs great care must be exercised in regulating the baths, so that the greatest good may be done for the heart without wrecking the nervous system completely. When the heart compensation is reestablished, the nervous phenomena usually pass away without much treatment other than an interval of quiet rest.

335 West Fifty-first Street.

THE DIRECT EXAMINATION OF THE LARYNX IN CHILDREN.*

By MAX THORNER, A. M., M. D.,
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The examination of the larynx of children, and especially of young children, is, as a rule, not easy. However important it may be for the practitioner, for diagnostic or therapeutic purposes, to get a view of the interior of the larynx, and however expert he may be in the technique of laryngoscopy, there are doubtless many cases where he will fail with the ordinary methods of examining the larynx. It is not alone the difficulties which are occasionally encountered in the laryngoscopic examination of adults that are the cause of this failure of all attempts at ocular inspection of the interior of the larynx, but new ones are added which are by far more difficult to overcome. These difficulties may be conveniently divided into two classes:

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* Candidate's thesis presented to the council of the American Laryngological Association, and accepted, April, 1899.

First, those which are due to subjective causes, as it were, on account of the age of the patient.

Secondly, those that are due to anatomical conditions in the young child different from those of the adult.

In the first place, we have to deal with young children, who are afraid of any manipulation about the mouth and throat, and who can not be expected to aid us in the procedure. It is rarely possible to persuade them to put out their tongues; but often they will not even open their mouths, will fight against the introduction of the mirror, will not intonate, etc. During all these manœuvres the pharynx and entrance of the larynx are more or less violently contracted and the lower pharynx is filled with mucus and saliva—all obstacles which in themselves would be sufficient to prevent any satisfactory examination.

But, in the second place, the anatomic conditions in children, at least in young children, are very unfavorable to making an inspection of the interior of the larynx in the usual manner. The frenulum of the tongue is at an early age often so short that even if the children are willing to push the tongue out, it is almost impossible to get a hold of it. Furthermore, the height of the mouth is comparatively small, and the uvula depending deeply into the lower pharynx. The larynx itself differs in very young children from that of a later age in many respects. Luschka [*] showed many years ago that the epiglottis in very young children was curved on the flat and formed a narrow longitudinal groove—in fact, he thinks this shape of the epiglottis is characteristic of early childhood. There are, however, a few more differences between the larynx of the child and that of the adult, of which the following are of importance for the subject under consideration: The hyoid bone lies during the first few years overlapping the upper margin of the thyreoid cartilage and entirely covers its highest point anteriorly.[†] By this arrangement the base of the tongue depresses directly the epiglottis, which, having its lateral margins curved, decreases the entrance to the larynx considerably. Thus is explained the peculiar appearance of the image of the vestibulum laryngis (see Fig. 1) in very young children.

"This narrowing down of the upper portion of the larynx in the young child is enhanced through the undue projection of the cornicula and cuneiform cartilages and through the narrow and short aryepiglottic folds." [*] These facts would readily account for the difficulties encountered in examining the entrance and upper half of the interior of the larynx. But even in such cases, in which we might perchance overcome them, we find a new obstacle, inasmuch as in young children (under four years of age) the axis of the larynx is tilted slightly backward toward the vertebral column on a level with the cricoid cartilage. This fact, which was established by L. Bauer [†] in 1897 on a hundred and thirty-six larynges of young children, explains through the peculiar tilting of the plate of the cricoid cartilage the diminished distance between the cricoid and thyreoid cartilages, whereby the perspective view of the lower half of the larynx is oftentimes rendered impossible.

If we consider that the obstacles enumerated above were almost sufficient for many years to frequently deter the most enthusiastic observer from insisting upon making laryngoscopic examinations in young children, even in cases in which it appeared to be almost absolutely necessary for the purpose of making a differential diagnosis in threatening conditions, is it to be wondered at that the method of direct examination of the larynx, discovered by Kirstein, and called by him autoscopy of the larynx, or examination without a mirror, was looked upon by the inventor and by many others as possibly furnishing the means of rendering the examination of the larynx in children easy, or at least feasible? In fact, Kirstein expressed himself in one of his first publications regarding this matter in the following manner: "In all probability autoscopy will assume an important rôle in the examination of children *on an equal footing* with laryngoscopy; but in *preference* to laryngoscopy in very young children." [‡]

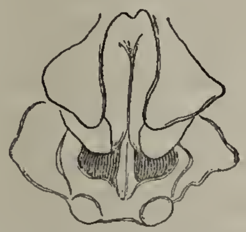

FIG. 1.—Laryngoscopic image of the infantile larynx, after Escat.

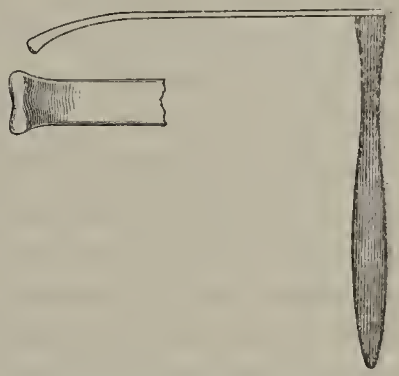

FIG. 2.—Tongue depressor of Kirstein. Side view and surface view of the anterior portion.

For purposes of recapitulation, it may suffice to briefly state the principles of autoscopy or direct inspection of the larynx and the trachea. As long as twenty years ago Reichert* had called attention to the fact that pressure upon the base of the tongue and the median glosso-epiglottic ligament produces an elevation of the epiglottis on account of its close attachment to the tongue. For this purpose Reichert used an instrument which he called "elevator of the epiglottis" (*Kehldeckelheber*), and which serves this purpose well enough. Making use of this new principle, Kirstein constructed an especially shaped spatula or tongue depressor, which is built upon the following lines: † It consists (Fig. 2) of a strong metallic handle to which is joined at a right angle the tongue portion of the instrument. This portion is eleven centimetres long, about two centimetres wide, and about three millimetres thick, and is in its distal part, for a distance of about five centimetres, slightly bent downward to adapt itself to the curvature of the base of the tongue.

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[*] H. v. Luschka. *Der Kehlkopf d. Menschen*, Tübingen, 1871, p. 56.

[†] D. Gallatti. Beitrag zur Anatomie des kindl. Kehlkopfs. *Wien. klin. Wochenschrift*, 1899.

[*] D. Gallatti. Beitrag zur Anatomie des kindl. Kehlkopfs. *Wien. klin. Wochenschrift*, 1899.

[†] L. Bauer. Eine Modification der O'Dwyer'schen Tuben. *Jahrb. f. Kinderheilk.*, 1897.

[‡] A. Kirstein. *Autoscopy of the Larynx and the Trachea. Direct Examination without Mirror.* Translated from the German by Max Thorner, A. M., M. D. Philadelphia: The F. A. Davis Company, 1897, p. 46.

The tip of the spatula, which must be thickened and well rounded, in order to avoid injury to the mucous membranes, has also a shallow notch, so as to admit of its more ready approximation against the median glosso-epiglottic ligament. The underlying principle of autoscopy rests upon the possibility of bringing the imaginary axis of the laryngotracheal tube and of the buccal cavity, which are joined at an obtuse angle, into a straight line. This is effected by placing the tongue spatula described above well back upon the tongue so that its distal end rests upon the base of the tongue and the notched tip receives the median glosso-epiglottic ligament, and then by pushing the tongue through firm forward and downward pressure out of the way. In doing this the epiglottis is elevated, through the pressure upon the median glosso-epiglottic ligament, and thus it is possible to get a direct view of the larynx, well illuminated by a reflector or any of the electric forehead lamps, during which manipulation the head of the patient should preferably be slightly stretched forward, while the examiner stands in front of the patient so that he looks from above downward into the bucco-laryngeal cavity.

It stands to reason that a procedure that did away with making traction upon the tip of the tongue, in order to elevate the larynx; that did not require intonation of A or other sounds to raise the epiglottis; that abandoned the laryngeal mirror, so easily covered with mucus coughed against it by struggling children, and that in its very nature is forcible enough not to need the assistance, and perhaps even to overcome the resistance, of unwilling or even refractory children—that such a procedure, I say, should lead to trials with the new method of laying the upper air-passages open to inspection. Kirstein himself recognized this very early and stated that he had frequently made autoscopic examinations in children with or without a general anæsthetic, the result being often very satisfactory.* And E. Fletcher Ingals † has modified the tongue spatula for autoscopic purposes in children by adding two flanges to prevent the patient's mouth from closing and obscuring the line of vision, a very practical point in the examination of children.

In this connection it is necessary to mention the method described in 1896 by Escat, of Toulouse, for the laryngoscopic examination of children.‡ He replaces the traction upon the tip of the tongue by dilatation of the laryngopharyngeal space with the aid of an especially constructed tongue depressor, employing at the same time the ordinary laryngeal mirror, which is used, however, not only as a reflector, but also to push back the soft palate and the pharyngeal wall during the forcible contractions that are liable to occur. For this purpose the handle of the mirror should be very strong.

The tongue depressor of Escat (Fig. 3) is built upon the following lines: To the strong handle is fixed, at an obtuse angle, the tongue portion, the pharyngeal end of which curves downward so as to adapt itself to the base of the tongue. On the end of this curved portion is forged a broad, two-pronged fork, consisting of two well-rounded and curved metal bars, which, descending beyond the base of the tongue, surround the lingual surface of the epiglottis and find with their knob-shaped extremities a lodging place in the sinus pyriformis on each side of the laryngeal orifice. This done, the examiner presses the instrument downward and pulls it at the same time forward, introducing simultaneously the laryngeal mirror. This whole procedure is, as will be readily understood, a forcible one, and the little patient must be firmly held upon the knees of an assistant, his arms fixed against his body and his legs secured between those of the assistant. It is best to roll the child in a sheet. In order to go without disturbance through these and the following manipulations, which may appear to outsiders somewhat formidable, Escat says: "The prin-

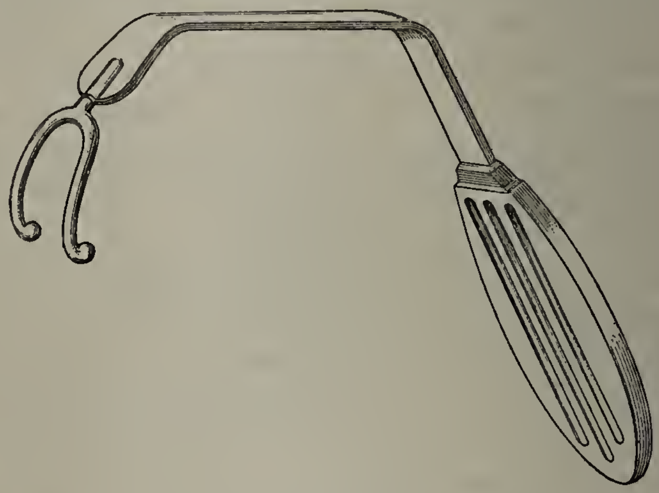

FIG. 3.—Tongue depressor of Escat.

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* Eine neue Methode zur Aufrichtung des Kehldeckels bei laryngoscopischen Operationen. *Arch. f. klin. Chirurgie*, Bd. xxiv, 1879.

† *Berl. klin. Wochenschrift*, 1898, No. 12.

* *Loc. cit.*, and private communications.

† *New York Medical Journal*, September 17, 1898.

‡ La Laryngoscopie chez l'enfant. *Archives internationales de laryngologie, d'otologie et de rhinologie*, 1896, p. 479.

cipal condition of success consists in the courage to remove from the room without pity the parents of the child or all persons who are too emotional." * During this procedure it may be but usually is not necessary to keep the mouth open with a mouth gag. If, now, light is thrown upon the mirror, which must be firmly pressed against the uvula and pharyngeal wall in order to act, together with the spatula, in the fashion of a retractor, and if this whole manœuvre is carried out with great celerity and dexterity, it is in most cases possible to see the laryngeal surface of the epiglottis, the vestibule of the larynx, the arytænoid cartilages, and the ventricular bands. It is, however, not so easy, in very young children, to see anything below them, although one may occasionally get a view of the vocal cords and, still more rarely, of the subglottic space.

This method of forced laryngoscopic examination is not only feasible, but also practical, as a somewhat extended experience with it has proved. However, it is a method that after all is probably best reserved for such cases as for any reason can not be examined by other methods, be it the usual laryngoscopic examination or the direct examination with the modified autoscopic method of Kirstein. For Kirstein himself has of late also used the spatula of Escat for the direct examination —that is, without the aid of the laryngeal mirror—and he finds that the results have been very encouraging.†

For some time past I have been making experiments with the different methods. Above all I was early impressed with the fact that with any of these methods, if carried out by experienced hands, we can often gain information about the condition of the larynx in young children which we could not obtain by the ordinary method of laryngoscopy. The direct examination with Kirstein's method affords in all cases an excellent view of the lower pharynx (the so-called hypopharynx), of the epiglottis, and part of the vestibule. In many cases we can also see the arytænoid cartilages. To see more—that is, the ventricular bands—I found very often difficult, and sometimes impossible. And only in extremely rare cases could I succeed in seeing the glottis. In doing this the children were usually examined in the upright position held on the lap of an assistant, although in some younger children an anæsthetic (chloroform) appears to be unavoidable, as has been pointed out by Fletcher Ingals.‡ In such cases the examination was done with the head hanging over the end of the table.

Another series of children, ranging in age from eighteen months to nine years, were examined with Escat's spatula, used, however, for direct examination without the laryngeal mirror. The children were held in a similar position as in autoscopic examination, with their heads stretched forward. The only difference was that instead of placing the end of Kirstein's spatula in front of the epiglottis, the fork of Escat's spatula finds its fulcrum laterally of the epiglottis and places no obstacle to the raising of this cartilage between it and the base of the tongue, which region, as we have seen above, leaves so very little opportunity for this movement in children on account of the close proximity to and overlapping of the hyoid bone over the upper margin of the thyreoid cartilage. The next step is then to make a quick and forcible downward movement with the instrument, and simultaneously a forward traction; if, now, light is thrown into the dilated lower pharynx one will, in the majority of cases, get a more or less perfect view of the vestibulum of the larynx in the moment in which the little patient takes a deep breath. Sometimes one sees even more, although, so far, I have but rarely succeeded in seeing the glottis.

Although my experience is as yet limited with this method, I feel that I can state that with increased experience it may possibly afford us great opportunities in the examination of children. Which of the various methods is the best, and whether all of them are not open to improvements, or may be superseded by still better methods, only the future can show. None of these methods will be required when, even with the aid of great patience and tact, laryngoscopic examination is at all feasible; and all these remarks refer, therefore, mainly to very young children. But it is confidently believed that these methods of direct, though more or less forcible, examination of the larynx in young children are a step forward and a distinct advantage over our former helpless inactivity, when in most cases we were only too often compelled to base our diagnostic and therapeutic actions entirely upon the urgency of the symptoms.

SOME HOMEMADE AND HOMELY APPLIANCES.

By JOHN LEVERETT, M. D.,
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In past times when a patient came to my office with a gonorrhœa, and removed from the offending organ the usual infected cotton or piece of cloth, I was at a loss what to do with it. Any receptacle, no matter of what material, ought to be thoroughly disinfected after receiving such a contribution; but, in most offices, how much disinfecting of such a receptacle is done? The same thing might be said with less force, perhaps, in regard to the cotton used by the gynæcologist in cleansing the vagina. Therefore for several years I have used paper receptacles. I have hanging in a convenient place, out of sight, a clip, intended for holding letters, and in that I hang a large Manila envelope, such as is used by the wholesale drug firms and others

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* La Laryngoscopie chez l'enfant. *Archives internationales de laryngologie, d'otologie et de rhinologie*, 1896, p. 487.

† Fortschritte in der laryngologischen Untersuchung kleiner Kinder. *Berl. klin. Wochenschrift*, 1898, No. 6

‡ *Loc. cit.*

for sending out their catalogues. A paper box, such as ice-cream saloons furnish to carry home ice cream in, would do as well and could stand on the floor or on a shelf. When a gonorrhœal patient presents himself he is instructed to deposit his cotton or cloth in this, and the whole thing is burned in due time. In the same way I dispose of the soiled cloths which come in wrapped around sore fingers, and any other soiled or pus-stained dressings that may come into the office.

An appliance which I find of advantage in obstetric work is a substitute for the Kelly pad. The Kelly gynæcological pad, although very valuable when used on a table, is, on account of the drain, of very little use in a case of childbirth in private practice, where all of the work is done on a bed. Kelly's obstetrical pad I have never used, but suppose it to be an improvement on the other. Still, either is awkward to carry, especially if one uses a bicycle as his means of locomotion.

I had a circular tube of canvas made, in shape somewhat like a bicycle tire, but smaller, so that when flat *A* to *B* equals three inches and a half, *A* to *C* twenty-two inches (see Fig. 1). This was made of two circles of duck sewed together on both edges. On the outer edge a space of nine inches, *A* to *D*, is left open, the edges being merely hemmed. By means of this opening the inner tube of a bicycle tire, shortened to the proper length, which can be obtained from any bicycle-repair man, is inserted and drawn around until the valve stem protrudes close to the end of the opening at *D*. Then *A* — *D* is basted with strong thread. This may now be inflated as hard as you please with a bicycle pump. Next take a piece of rubber sheeting one yard square and fasten it to the canvas ring by means of ordinary dressmakers' hooks and eyes, as in Fig. 2.

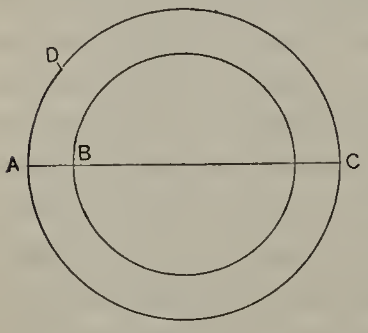

FIG. 1.

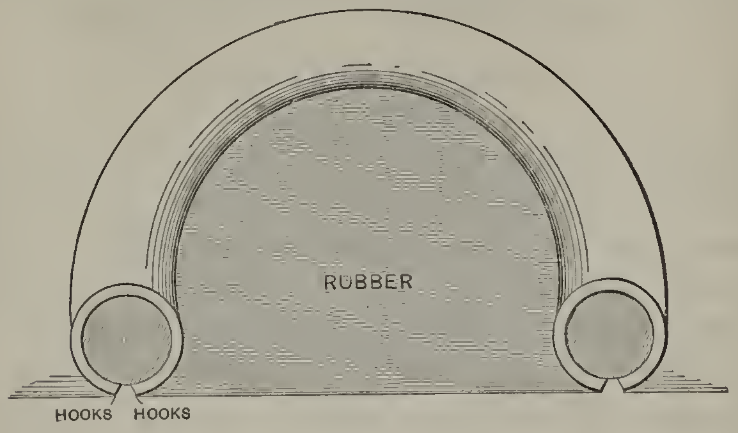

FIG. 2.

The eyes should all be sewed back to back on the bottom of the canvas ring. The advantages of this pad are as follows: After deflating the ring, both it and the rubber sheet can be folded flat and slipped into a rubber pocket about the size of those formerly used for carrying the old-fashioned ladies' gossamer. Besides that, it is a very easy matter to cut the bastings, *A*—*D*, withdraw the inner tube, and boil the canvas ring. The rubber sheeting, being perfectly flat after it is removed, is very easily cleaned, and, in fact, is so inexpensive that it may be burned up and another one substituted if there is the least suspicion of infection. By the use of this pad at the proper time one can preserve the bed perfectly clean.

These two appliances, though truly homely and homemade, have been of much service to me, and I hope will be to others.

SHOCK AND ITS SURGICAL SIGNIFICANCE.

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Psychopathology.—Shock is a reflex paralysis of the vasomotor centre caused by hyperirritation of the sensory nerves. Until recently the exact topography of the vasomotor centre has been one of hypothetical calculation, but lately physiologists, through more minute experimentation and accuracy of observation, have finally arrived at a more conclusive demonstration. They have found in the medulla oblongata very important centres, especially the vasomotor and respiratory. The vasomotor centre is situated in the formatio reticularis, on the border between the pons and medulla (Ludwig). By stimulation or irritation of portions of the nervous system and of the peripheral nerves the vasomotor centre can be wrought into activity, and thereby produce a contraction or dilatation of the blood-vessels. The respiratory centre is likewise situated in the formatio reticularis—corresponding to the apex of the calamus scriptorius—on a plane with the ala cinerea and just below the centre of the vasomotor mechanism. The respiratory centre is, to a limited degree, volitional, and is influenced by the amount of gas in the blood and by the irritation of the sensory nerves, particularly the pneumogastric. Weber has demonstrated the inhibitory centre of the heart in the medulla oblongata from which the cardiac action can be inhibited along the course of the pneumogastric.

Experimental physiology has revealed to us that this juxtaposition of centres, especially of the respiratory and vasomotor, bears to a certain extent a collateral innervationship such as we encounter in profound shock. Almost all recent investigations confirm the well-known experiment of Goltz, which consists in repeatedly striking the abdomen of a frog and thereby producing a peculiar condition of collapse, which may be likened to shock in man. Through the mechanical irritation of the sensory nerves of the intestines the activity of the central nervous system, and more so that of the vasomotor centre in the medulla oblongata, becomes diminished or completely paralyzed. Consequently, the tonicity of the walls of the vessels is diminished, the circulation becomes slower, the blood pressure lower, the impelling force rapidly loses strength, and finally the circulatory disturbances may attain such proportions as to terminate fatally from paralysis of the heart in the diastole. "The heart is distended because it is paralyzed, and not paralyzed because it is distended." The arteries will be found comparatively empty; the skin, visible mucous membrane, lungs, and brain are anæmic, and the blood collects particularly in the large veins of the peritoneal cavity, the viscera, and the right heart.

When an irritation of the peripheral nerves is intense, the functions of those particular portions of the spinal cord receiving those impressions will be momentarily weakened or suspended. Reflex paralysis is, therefore, a condition of exhaustion or fatigue of the nerve centres caused by overirritation.

The observations of Hodge, of Clark University, on the changes in the cells of the cord during functional activity are invaluable. This investigator made a microscopical study of the changes due to functional activity in the nerve cells, and thus compared these alterations to cells of glands which likewise had undergone functional activity. As is well known, the gland cells during rest become filled with fine granules, and during active secretion these granules disappear, leaving the cell shrunken. Hodge subjected to electrical stimulation the spinal ganglia of frogs and cats for several hours, and then compared the changes observed in these cells first with normal cells and then with stimulated cells, after an interval of rest. He furthermore compared the ganglia of birds obtained in the early morning with those killed after a hard day's flight. His microscopical observations show that metabolic changes are as easy to demonstrate as similar processes in gland cells. They consist of a decided decrease in the size of the nucleus with a jagged and irregular outline. The open, reticulate appearance of the nucleus is lessened and takes on a darker stain. He also found a slight shrinkage with vacuolation in the cells of the spinal ganglia, and the same shrinkage of the cells of the cerebellum and the cerebrum with enlargement of the pericellular lymph spaces. The protoplasm does not take the staining as readily as when in its normal state. These most valuable investigations reflect additional light upon the pathology of shock and render it more probable that in these profound functional disturbances similar changes occur which may gradually disappear after an interval of repose.

Fisher holds the view that in concussion of the brain, just as in shock, a reflex paralysis takes place of the vasomotor centre in the medulla, producing an arterial anæmia and venous stasis. In this concussion there is a condition closely resembling shock of the medulla and cord. The main differential feature is that the patient has lost more or less completely and forever all recollections of what occurred immediately prior to the injury, and this period of time is wiped out, as it were, from the memory of the patient.

Syncope, exhaustion, and fatigue, and their recovery, present an epitome of the phenomena of shock. Syncope presents one unmistakable characteristic feature which is seldom encountered in shock, and that is the suspension of that function of the brain which we entitle intelligence. The cause of syncope is rather more frequently mental than physical, and the cerebral symptoms are the most apparent. The pathological condition underlying the symptoms of syncope is a deficient supply of blood to the brain. In shock the loss of consciousness is rarely complete. In syncope we have a diminished blood pressure and blood supply within the cranial cavity, while in shock we have a decided lowering of the splanchnic blood pressure.

Crile has lately published his experimental research on one hundred and forty-eight animals of the canine tribe, and it may not be amiss to consider some of the most striking of his experimental evidence. All his observations tended to show that the more specialized and abundant the nerve supply to a part, the more will it contribute to the production of shock when subjected to injury. Simple skin incision in the hip-joint amputation had as much effect upon the circulation and the respiration as severing the entire muscular mass of the thigh. Opening the thorax was attended by the greatest irregularity of breathing—the blood pressure underwent sweeping changes in height, and the heart strokes usually became short and very irregular. The diaphragmatic peritonæum produced the most marked respiratory changes, and the pelvic peritonæum contributed less to the production of shock than the abdominal. The omentum is exactly the antithesis of the foregoing. Traction on the nerve trunks caused decided effects upon both respiration and circulation. Shock is in direct proportion to the amount of excitable tissue injured and the time occupied by an operation.

Ætiology.—The most important causes are as follows: Electricity and lightning, burns and scalds, poisons, psychic states, pain, injuries, operations, and hæmorrhage. In the present emulation of scientific advancement may be mentioned the dispatching of criminals by a powerful voltage, producing a profound electrical shock, and familiar to us as electrocution. The application of electrical force in our various industries has greatly augmented the mortality from this source. Incautiously coming in contact with live wires is likewise a frequent cause of death. Death from lightning is usually instantaneous. Burns and scalds involving an extensive area are more prone to produce a severe degree of shock than one of limited area and deep extent. The swallowing of corrosive poisons has the same effects.

Death from shock through psychic disturbances is a rare occurrence. Many years ago a remarkable case of this nature occurred in the writer's alma mater, when an obnoxious janitor was literally frightened to death.

On a certain dark night he was seized and made to believe that he was about to be executed. He was blindfolded and forced to kneel before a block. A wet towel, instead of the axe, was then brought smartly down on the back of the culprit's neck. This is all the students intended to do, but, alas! to their horror and mortification, on removing the bandage they observed that the man was dead.

Severe and long-continued pain has been known to prove fatal. Extreme muscular exhaustion has also caused death in protracted parturition. There are many other conditions where the patient passes from a transition stage of intense agony to perfect ease, and finally dies in complete composure.

Accidents involving the extremities are followed by shock in proportion to their proximity to the trunk. Few have passed through school life without having experienced the effect of intense prostration following a smart blow over the pit of the stomach. Contusion and penetrating wounds of the abdomen are especially prone to be followed by serious collapse. Crushing a limb of the lower extremity is more serious than one of the upper. Injuries to the head are proverbially dangerous.

Prolonged surgical operations are apt to be attended by severe hæmorrhage and followed by more or less prostration. A febrile attack or acute inflammation will invariably protect the system for a certain length of time, so that a major operation may be undertaken with a favorable prospect. This is explained by the counter-irritation theory of Goltz, of which we shall speak further on. The degree of shock does not entirely depend upon the severity of the operation or idiosyncrasy of the patient, but weightily upon the length of time in its performance and the duration and degree of the anæsthesia.

Nerve irritation sufficiently profound to produce shock is painless. Hyperirritation destroys function, and consequently wounds received during battle are often not felt by the victim. Stromyer has said, "Perfect quiet reigns in the hospital ward the first night after battle."

Able clinicians have said that hæmorrhage is another name for shock. Hæmorrhage from the large venous trunks causes a decided fall in the blood pressure, because the quantity of blood supplied to the heart is directly diminished, while if the hæmorrhage is arterial, the income of blood is gradually diminished, the equilibrium of the vasomotor mechanism being suddenly deranged.

The degree of shock is influenced by age and by the physical and mental condition. Bonaparte's army in their outward march to Russia, when they were in a jubilant spirit and certain of victory, experienced the hardships and eager weather far more than on their vanquished return in the midst of a frigid winter. In this wintry and demoralized homeward march the army was less keenly susceptible to the physical suffering purely through the mental anguish, and at the same time had a larger mortality than on their outward campaign. The very young and the very old bear a peculiar susceptibility to shock. The symptoms are more profound and of briefer duration in children, but milder, although more lasting and dangerous, in the aged. Women bear pain with more patience and fortitude than men, but they can not endure pain of a severer nature or for a more prolonged time than men. A man seldom dies from exhaustion of a fractured hip, but old women frequently succumb to this accident.

Debilitated people with a lax fibre and victims of alcoholism withstand shock poorly. They frequently suffer from complications, such as delirium tremens and mania, their rallying powers are diminished, convalescence is prolonged, prognosis is unfavorable, and all sorts of treatment are anything but satisfactory.

In aspirating for hydroperitonæum we are always on our guard lest we may be dealing with a patient whose sudden removal of pressure from the abdominal vessels will cause a local hyperæmia, which is erroneously regarded by some as shock. The delivery of twins or premature delivery is in some instances followed by alarming symptoms resembling those of shock, but which are in reality brain anæmia or intravascular hæmorrhage of the abdomen.

Strangulation of a portion of the small intestine is accompanied immediately by symptoms of serious prostration, and this may be sufficiently profound to terminate fatally without even a complication of peritonitis. The writer seven years ago saw a case in consultation that presented typical symptoms of "dead drunk," and had been casually diagnosticated as such by a practitioner of medicine. The patient's inclination to be left alone so that he could sleep undisturbedly had been encouraged to get him over his supposed drunk. This state of mental hebetude was interrupted by hiccough, gnashing of the teeth, and occasional vomiting, as we often see in alcoholism. On thorough examination a small knuckle of intestine was detected in the inguinal canal. Kelotomy was immediately performed, but the patient never rallied, and died three hours afterward of typical shock. The knuckle of intestine had not lost its lustre or presented that steel-gray appearance which the surgeon regards as fatal to return into the abdominal cavity. No peritonitis.

Symptomatology.—No condition resembles death more closely than the appearance of a patient suffering from severe shock. He lies indifferently quiet, with limbs prostrate and placed nonchalantly as the chance of the moment may dictate. A clammy sweat exudes from the pores of the skin. There is noticeable a striking pallor of the skin and visible mucous membranes. The lips are bloodless, the finger nails are blue, and the skin on the palmar aspect hangs in folds. All the features are smaller and shriveled. The eyes, lustreless and staring, are rolled upward in deeply sunken sockets. The pupils are dilated and react slowly to the stimulus of light. The pulse is almost imperceptible, intermittent, and very rapid. The arteries are small and tension low. Respiration is irregular, with long and deep breaths alternating with superficial ones, which are scarcely audible. The intellect is clouded and the patient answers only slowly or reluctantly in a monosyllabic voice after being repeatedly interrogated. He hears none but loud questions and seems to see through a mist. The temperature falls in proportion to the severity of the shock, sometimes two degrees. After the graver symptoms have passed off reaction is ushered in by vomiting, with occasional hiccoughing. Retention of urine occurs more often than incontinence.

There may be from the very first an erethistic form, which Travers has termed, in his valuable work on *Constitutional Irritation*, prostration with excitement, and is marked by extreme restlessness. The patient in a frantic state rolls the head in the pillow from side to side, gasps for breath, and complains of fearful oppression. The countenance is expressive of death agony. The patient shouts again and again for help, perhaps utterly meaningless; no question is answered and no encouragement is heeded. He has a presentiment of death, with the feeling of annihilation. The mind seems unclouded, but appears entirely preoccupied by the frightful agony of being on the brink of impending dissolution. Burning thirst is always felt, and fluids are swallowed with the greatest avidity, and vomited as rapidly. There are paroxysmal slumbers which afford no relief, and finally incoherence approaches wild delirium. The pulse becomes feebler, respiration more paroxysmal and superficial, profuse and clammy perspiration appears, exhaustion supervenes, and ultimately, with a long respiratory movement, the facial expression relaxes and the patient has passed to that "undiscovered country from whose bourne no traveler returns."

Traumatic fever and shock following cœliotomy have heretofore received not even a passing remark from abdominal surgeons. It is our firm conviction that we observe the symptoms of prostration with excitement more in operations involving the peritonæum than in any other conditions. These are cases where we have concomitantly a severe degree of shock and an overwhelming absorption of septic material. The septic matter coming in contact with the peritonæum, which is supplied by the very delicately sensitive solar plexus, produces both a profound shock through irritation of the solar plexus and an initiative acute septic peritonitis; but the patient succumbs to shock before the active symptoms of acute sepsis predominate. These patients generally die from twelve to eighteen hours after operation, and the autopsy shows negative signs of such a degree of peritonitis as could prove fatal.

The railway spine of the English is known as traumatic neurosis by the Germans, and occurs after concussion of the brain and spinal cord, due to a fall in consequence of a railway accident. Patients are wrongly accused of simulation and present manifestations which are known as "litigation symptoms." Albeit, since the adoption of legislation for accident insurance traumatic neurosis has manifestly increased. It is truly in the majority of cases a form of psychosis and neurosis which is not dependent upon a material alteration in the nervous system, and has been classified by Strümpell and Charcot as a form of hysteria. Whether these symptoms are simulated or actual, the patient, notwithstanding, presents manifestations of true shock. For instance, a person in a collision receives a severe jarring as the body is violently projected into space or jerked to and fro with all the muscles unprepared. Apparently unhurt, although depressed, he crawls out of the wreck and assists fellow passengers. Some hours or days after the accident there comes an inability to sleep; he has a quick pulse, eyes bright, and a tendency to become feverish. In the further course one observes decided disturbances, such as hypersensitiveness of all the senses, pain, defective muscular movements, loss of memory, some anæsthesia, and in others hyperæsthesia, convulsions, paralysis, etc. Chronic invalidism develops and prognosis is very unfavorable, and finally involves a suit at law for personal damages.

Prognosis.—Shock may be fatal within a few minutes, depending upon the severity of the injury, or the patient may pass away so gradually that the process is almost imperceptible. The longer the delay for reaction to set in the greater the danger. According to Cheever, if reaction does not set in within eighteen hours after the injury it never comes. The temperature is a very accurate guide, and a fall to 96° F. contraindicates any surgical operation. An increased restlessness, with jactitation and præcordial anxiety, feebleness of the pulse, persistence of the pallor, with haggard and livid aspect, profuse and clammy perspiration, insensibility of the conjunctivæ and the pupils, inability to swallow, persistent vomiting, and relaxation of the sphincters, all prognosticate an unfavorable issue.

On the contrary, the pulse is the best criterion by which to judge the patient's condition, and an increase in the strength of the heart's action is the most satisfactory sign. Taking an increasing interest in the surroundings, deeper and more regular respirations, returning color of the skin and visible mucous membrane, natural expression of the countenance, a limpid eye, and moving the limbs to more comfortable positions, betoken a healthy reaction for a favorable termination.

(*To be concluded.*)

The Columbus Medical Journal.—It is announced that the journal has been changed from a semimonthly to a monthly, and its size somewhat increased. It is the official organ of the Columbus Academy of Medicine. We wish it success in its new and improved form.

RESULTS OF HOT-AIR TREATMENT IN RHEUMATISM AND GOUT.*

By LEWIS A. COFFIN, M. D.

ALTHOUGH heat has been for ages and among all peoples probably the most universally used therapeutic agent in rheumatic and gouty affections, especially of the joints, the use of such high-temperature treatment as we wish to consider in this discussion has been of recent time.

By whom and where dry hot air of a temperature above 200° F. was first used I am not certain. I believe the practice began in England. The apparatus first used in this country was imported. Betz, of Chicago, devised and patented the apparatus now most generally used in this country. It consists of a truncated oven, a cross section of which, or its open ends, is of about the shape of a longitudinal section of an egg, with a third of the smaller end cut off to give a flat bottom. Heat enters at the closed end through a funnel-shaped apparatus over the inner aperture of which is an iron box with perforated sides, turned bottom upward, which arrangement distributes the heat uniformly through the oven. The oven and top of the overturned box are lined with asbestos. Above this is a hammock arrangement for support when a part is to be treated which necessitates the placing of a whole limb in the oven. A thermometer hangs in the oven and it has a slide-covered opening for ventilation, letting off vapor, and controlling temperature. Of course, such a high temperature as 200° to 400° F. can be borne only when the air is dry. In order to accomplish this the part treated must be well wrapped in some good absorbent material, such as Turkish toweling, and great care must be exercised that this is evenly and snugly applied or one is likely to get severe burns.

The patient made ready, the limb is placed on the hammock and a canvas sleeve is so adjusted that one end fits closely about the limb and the other closes the end of the oven. Each treatment lasts for an hour, and should be repeated every day or every other day.

That this measure is of great therapeutical value all agree who have tried it, but great difference of opinion exists as to the diseased conditions in which it may be expected to prove beneficial. The diseases in which it has seemed applicable and for the cure of which it has been tried by various men are as follows: Arthritic disease, such as rheumatism and gout, rheumatoid arthritis, gonorrhœal rheumatism, tuberculous inflammation of the joints, also sprains, synovitis, tendosynovitis, neuralgias, clubfoot, etc.

All agree that in all cases of sprains, synovitis, tendo-synovitis due to trauma, and all simple inflammations of the joints, with or without effusion, we have in superheated air a wonderful therapeutic agent—Dr. H. C. Wood, of Philadelphia, describing the effects as marvelous. But in such cases as come properly under discussion to-night, chronic rheumatic or gouty arthritis, arthritis deformans, etc., there exists the greatest difference of opinion.

Dr. Rosenbaum, of Berlin, says that the treatment of this class of diseases is a matter of temperature, and, discussing the subject, says: "The immediate local effects on the joints are at once obvious, especially in chronic rheumatism and gout; they often become less painful and more movable after the first sitting and continue to improve with subsequent treatment."

Dr. Frank E. Peckham, of Providence, Rhode Island, after speaking of the wonderful action of hot air in the first class of diseases, said he did not find it so good in chronic joint disease, and cites such a case treated, saying that when the patient began treatment he had been unable to sleep for more than two or three hours at night. After the first treatment he slept well all night and continued to do so for some time; decided improvement followed the first two weeks' treatment, from four to five sittings being given a week. After that the patient seemed to be weakened, and finally, although seeming better immediately after each treatment, pain and soreness would return, worse apparently than before the treatment. He has had excellent results in acute rheumatism, citing a case of acute rheumatism following typhoid fever. All antirrheumatic treatment had been tried without effect, when it was decided to try the hot air. The patient fell asleep at the end of five minutes, so great was the relief from pain. He was entirely well after seven treatments. He finds that stiff and contracted joints, where bony ankylosis had not taken place, were much improved, adhesions softening and breaking down, etc.

Dr. Victor F. Müller, of Milwaukee, after reading of the brilliant results of hot-air treatment obtained by Dr. Black, of Chicago, obtained a Betz apparatus and treated fourteen cases, including gouty or rheumatic polyarthritis, traumatic monarthritis, etc. All were cured except one gouty man, who went on a spree and did not return. He finds the number of treatments necessary depends on the chronicity, varying from ten days to eight weeks. On the other hand, Dr. H. C. Wood says: "If the results claimed could be obtained, one could fill his office daily and be busy from morning till night relieving joints chronically affected with rheumatism and gout." He finds no benefit in treating cases with hot air; but, as said before, speaks of the marvelous results in traumatic cases or simple inflammation affecting tendons and tissues outside the joint. He cites a case of a baseball pitcher whose hand had been swollen and drawn out of shape for some years and rendered useless, who was relieved and cured after a very few treatments, stating, what is the interesting thing in this history, that in this case a diagnosis of gout had been made by a distinguished physician. We should like the distinguished physician's opinion of the value of hot air in the treatment of chronic gout.

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* Read before the Society of the Alumni of the City (Charity) Hospital, November 8, 1899.

Dr. Gaunt, of this city, who has treated upward of fifty patients variously affected, says "Dr. Wood's experience is my experience," stating, however, that he feels that in any particular case it must be tried to know what good may be obtained.

In my own experience with the hot-air treatment I feel that I have produced decided benefit in several cases of undoubted chronic arthritis of a rheumatic nature. I have said arthritis of a rheumatic nature, because so little is really known of the true nature of many of the chronic joint affections, especially those cases classed as rheumatoid arthritis and arthritis deformans. I shall cite but two interestingly related cases. The first case is that of a lady forty-three years of age who for two or three years previous to coming to me had been treated for chronic rheumatic arthritis of both knees, both of which had lost their normal contour, the left one being so enlarged on its inner aspect as to make the leg look crooked like a knock-knee leg. On motion there was a most sickening crepitation and much pain. She had taken alkalies, salicylate, colchicum, and potassium iodide. The knees had been lotioned, soaked, poulticed, and blistered, and all to no effect. They were getting worse. I repeated some of the above-mentioned procedures with such variations as I thought might hold the patient and possibly give some benefit—among other things, applying what I called Denver mud antiphlogistine.

The patient continued to grow worse instead of better, until she was actually unable to go on the street. Just at this time I received one of the Betz advertising circulars, and I determined to try the hot air on Mrs. F. She came to my office with a cane and supported on the arm of a maid. Either leg was placed in the hot-air chamber on alternate days and when taken out a dressing of antiphlogistine applied to be worn forty-eight hours. These dressings had been used previous to the use of hot air, and they always became more or less moist, but after beginning the hot air they became positively wet, so the patient said that to pat the dressing with her hand was like patting cloth which had been soaking in water. After a week she came without the maid. She soon discarded the cane, and in the course of six or eight weeks would walk from twenty to thirty blocks without trouble.

The apparent local effects of each treatment were an intense reddening and profuse perspiration of the parts treated. Besides the local effect, there was always a more or less copious perspiration of the entire body, and toward the end of any sitting the patient complained of feeling very nervous, and once or twice there were feelings of nausea, which I felt were probably psychic.

At the end of about eight weeks' treatment the patient felt that she was losing general strength and asked to be relieved from further treatment for a time. It is now about a year since treatment was suspended. She still walks without trouble, and, in fact, has not mentioned her knees for six months, though I see her frequently.

The second case is that of Mrs. V., forty years old, whose father and mother were rheumatic. She has never been seriously sick. She began having trouble in her knees about seven years ago. The first symptoms were more or less pain in the knees, and when she started to walk after having been quiet for a time something would seem to give way in her knee. The symptoms gradually grew worse, progressing more rapidly in the left knee, until, from constantly favoring that leg, she found that it had gradually shortened by contracture. She was unable to straighten it. It was quite painful at night, causing great loss of sleep. On inspection, both knees were seen to be quite deformed. Instead of the bursa on either side of the ligamentum patellæ there were two almost hemispherical bony-feeling bodies, larger in the left leg, which, as I have said, was slightly flexed. The reason of this lady's coming to me is rather interesting. Her husband is a salesman in a large department store, and had frequently waited upon Mrs. F., the first patient, when she came to the store, supported by cane and maid, and things had to be brought to her for inspection. This summer she presented herself at the store in her more fit condition, and so surprised her salesman in the manner of getting about that he asked her what had brought about the change. The recital of her troubles so tallied with that of his wife's that he asked for the physician's name and address, and I am now treating his wife, Mrs. V. She has been under treatment about three weeks, sitting every other day, as she lives in Brooklyn. From inspection I can not tell whether the leg is greatly improved or not. She says she can get it out of the way better in street cars and can get it more nearly straight at night. She is sleeping much better and says she walks better, and now wants to come daily so as to be able to treat either leg on alternate days, the left only having so far been treated. In both these cases antiphlogistine has been used after each treatment and kept on until the patient was ready for the oven at the next sitting, and I feel that it has greatly augmented the benefits derived from the hot air. Now these two cases seemed to me to be most unpromising. Just what part rheumatism or gout plays in the production of such chronic joint disease I am, like many another, unable to say, but they are such as I think we all associate with those diseases.

The patients I have mentioned are not well, nor probably can they be ever made so, but much has been done for them. They walk better, are more comfortable, and can be kept so by an occasional course of treatment if necessary. Hot air, I think, will do more than any other plan of treatment, and it seems reasonable, as by it we certainly stimulate the circulation most actively about the part as well as throughout the entire system. We produce a profuse sweating of the part, thus probably carrying off immediately many waste products resulting from the increased activity about the part at the time of treatment. And, possibly, we increase beneficent cell activity, besides whatever good may result from the direct action of the heat on the diseased tissues.

I have felt sorry for the entire lack of scientific data showing the amount of improvement obtained by different men. Could we have an apparatus which would measure exactly any joint, and any changes produced in that joint, we could demonstrate beyond doubt the value of this or any other line of treatment.

I have devised such an instrument, and, Mr. President, I should like criticism of the model which I shall ask you to have passed.

145 WEST TWELFTH STREET.

THE
VALUE OF INORGANIC IRON IN ANÆMIA.

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IT is needless to enter into the details of the various symptoms and conditions which are presented in cases of anæmia, for every one is perfectly familiar with a disease which is so prevalent and common in every walk of life; found almost as often in the palace as in the hovel.

I shall therefore not attempt to deal at all with the symptoms, nor with the pathology of anæmia, other than to show the prime importance of some form of iron in its treatment. The relation of cause and effect in anæmia is clearly shown by the microscope, for with a normal number of four to five million of red corpuscles and a normal amount of hæmoglobin there is no evidence of the anæmic signs; but, as we find a departure in the blood from this standard, in the line of a deficiency of these factors, so proportionately does the diseased condition, anæmia, present itself, passing on into chlorosis, with deficient hæmoglobin, and into pernicious anæmia, with the least possible number of red corpuscles to carry out life's functions. Thus it is evident that anæmia is a condition dependent upon the number of *normal* red corpuscles in the blood; and I think we can certainly conclude that the essential element in the red blood-corpuscles is the hæmoglobin, since ninety per cent. of the solid matter is this pigment, and of this compound 0.47 per cent. is iron—the only element present which has great affinity for combining with oxygen to form an oxide; so it seems more than a reasonable conclusion that iron is the *sine qua non* in the make-up of blood normally, and an essential in the treatment of the disease anæmia. Aside from these physiological truths, the immense amount of clinical evidence as to the value of iron in anæmia which has accumulated in the years of treatment in the practice of medicine is overwhelmingly in its favor. It was even used as a household remedy in the form of a tonic obtained by rusting (oxidizing) nails in water and using the supernatant fluid, which is certainly a great contrast to the elegant preparations of to-day—I am afraid, often more elegant than efficient.

The absorption of inorganic iron has been a much-discussed question, and recently an article by Dr. Porter repeated the views of Bunge that iron was not absorbed into the system, but merely combined with the hydrogen sulphide in the intestines and formed the insoluble sulphide of iron, thereby sheltering and leaving the vegetable irons of the foods for absorption into the system.

Woltering clearly demonstrated the fallacy of this argument by giving the sulphate of iron to rabbits, in which cases there were large accumulations of iron in the liver, and then by administering salts of manganese, which unite equally well with hydrogen sulphide, and would thereby shelter the vegetable irons; but in these there were no accumulations of iron in the liver, proving conclusively that the accumulated liver iron was obtained not from the vegetable but from the inorganic iron sulphate.

Gaule and Macallum separately demonstrated the absorption of inorganic iron into the system by chemical tests and the microscope, watching every stage, as it passed into the villi of the duodenum, into the liver and spleen, where it was accumulated.

"The lowered amount of hæmoglobin and the histological changes of the blood depend not upon the condition of the *food*, but simply upon want of iron, since with this one can not only avoid but also improve such conditions. Iron given in a form uncombined with organic material is taken up and assimilated by the animal organism" (Capolla).

These investigations certainly prove beyond any question in my mind that inorganic iron is absorbed by the intestinal villi when administered as such, and is accumulated for the metabolism of the needs of the system.

From the numerous preparations of so-called organic irons, for which, by the statement of their organic nature a greater degree of assimilability is alleged, a word of comment is necessary. In the first place, they are not true organic compounds of iron and organic matter, but are mere mechanical mixtures, of which Herschell says, the worst preparations of iron are the peptonates, albuminates, and colloids, which are acted upon by the hydrochloric acid of the stomach, forming an insoluble precipitate of ferric carbonate; and the alleged fact that these preparations are better borne in disease is evidently due to being almost inert."

In regard to the value of manganese as a hæmatinic, there is a wide diversity of opinion. Personally I can see no sound basis for its use other than as an alternative in combination with the administration of iron; for not even a trace of it can be detected as a normal constituent of the blood; nor can any trace of it be discovered in any of the absorbing channels, or in the storehouses of the system when it is administered.

I think it is an indisputable fact that iron in some forms is the essential and the specific in the treatment and cure of anæmia; and it remains no longer a question in my mind as to the absorbability of inorganic iron, but to give it in the form which is most readily absorbable; and there are several requirements which, if fulfilled, certainly add materially to the value of the preparation and approach more nearly an ideal hæmatinic. Preferably the form of iron should be insoluble when administered, for by being so it is harmless to the teeth, a most important consideration in children, whose teeth are just forming and are so susceptible to the least injuries. The preparation should not nauseate nor disturb digestion; for at the very best in anæmias we have a most sensitive stomach, the vitality of which is at a low ebb, and if we destroy the aid of the digestive organs in our treatment we have done a far greater wrong than our tonic can overbalance, as the proper food nutrition is the first and most important consideration.

As anæmia is not infrequently a concomitant and a result of constipation, due to the self-infection, and blood destruction from the toxic agents locked up in the bowel, it is a self-evident fact that the preparation should not be astringent, but rather a laxative. Indeed, Sir Andrew Clark emphasized this point decidedly when he said that if limited to the choice of one drug in the treatment of chlorosis he would prefer a purgative.

Finally, it should be a preparation which can be absorbed with the least possible effort on the part of the tissues, for their vitality in anæmia is low.

When we read the various pamphlets and the different literature it appears that no difficulty would be experienced in finding hosts of preparations that promise to answer all these conditions.

A preparation which theoretically complied with essential requirements laid down above was brought to my attention some time since. I can not say I am heartily in favor of proprietary preparations, but my prejudice is very much removed if the owners give me the entire quantitative formula. This preparation is made from a German formula and has recently been introduced here under the trade name of "aromatin" (Dolle).

The formula is phosphated iron, which is insoluble in water as well as in hydrochloric acid of the stomach, suspended as the finest pulverized powder in a menstruum, with glycerin preservatives, slightly aromatized to render it agreeable to the taste, forming a milk-white liquid. The dissolving agent is a tablet containing sufficient sodium phosphate to dissolve the iron in a half-ounce dose of the fluid, together with tartaric acid and sodium bicarbonate, which effervesces when dropped into a wineglassful of water, a not unpleasant draught. The milklike liquid is taken, followed by the effervescing tablet solution, so that in the stomach the iron phosphate is gradually acted upon by the sodium phosphate, forming the soluble bibasic sodium and iron phosphate, which in its nascent state is more readily absorbed. Thus this preparation can not act upon the teeth in its insoluble state. It is non-astringent and neutral, thus not interfering with the gastric juices in the stomach nor the pancreatic juice in the duodenum, where iron absorption is most active. The carbon dioxide settles the stomach; the phosphate is a laxative and cholagogue, preventing constipation; indeed, this laxative effect is so decided, I found that great care must be taken in its use with tubercular cases with a tendency to diarrhœa. As a hæmatinic I tested its value in a series of six cases of anæmia treated for forty-seven days; three of these were poor patients surrounded by the worst hygienic conditions and with the usual coarse diet of the poor. The other three were all in good, comfortable homes, but were not amenable to regulation of diet. The preparation was palatable and nauseated none, nor did they feel any uncomfortable effects, as bloating and belching of wind from the stomach after taking.

There was a decided improvement in every case with an average of relative increase of twenty-eight and two thirds per cent. red corpuscles and eight and a half per cent. hæmoglobin.

Case I.—S. H., aged twenty-two years, mother of two children. A seamstress doing work on heavy, coarse shirts—a most laborious task. Her surroundings were unhygienic, as she lived in a room in a tenement house.

She was very poor, consequently her food was scant and coarse; she rarely took any exercise. She was anæmic, pale, and weak, poor appetite, and had a stubborn case of stomatitis. The stomatitis was treated locally, and "aromatin" given for forty-seven days, at the end of which she reported feeling greatly improved and in a far better physical condition.

Microscopic report showed a relative increase: Red corpuscles, 26.5 per cent.; hæmoglobin, eight per cent. —bringing the blood practically up to the standard in corpuscles and hæmoglobin, with all surrounding conditions working directly antagonistic to success.

Microscopic Report.—Treatment begun October 19, 1899.

First examination, October 19th. Red corpuscles, 3,400,000; hæmoglobin, eighty-four per cent.

Second examination, October 30th. Red corpuscles, 3,400,000; hæmoglobin, eighty-four per cent.

Third examination, November 9th. Red corpuscles, 3,500,000; hæmoglobin, eighty-five per cent.

Fourth examination, November 18th. Red corpuscles, 4,000,000; hæmoglobin, eighty-six per cent.

Fifth examination, November 28th. Red corpuscles, 4,300,000; hæmoglobin, ninety-two per cent.

Increase absolute: Red corpuscles, 900,000; hæmoglobin, eight per cent.

Case II.—Mr. C. F. H., aged twenty-eight years; married; occupation, paper-hanger; indoor life, a typical case of anæmia, similar to those usually found in general practice. Gave usual symptoms of lassitude, loss of appetite, and malaise. Tendency to constipation. He was placed on "aromatin," and no other treatment, and felt perfectly well after the forty-eight days' treatment, with no digestive disturbances in any way during the treatment.

Microscopic report showed a relative gain of red corpuscles, twenty-eight and a half per cent.; hæmoglobin, fourteen per cent.

Microscopic Report.—Treatment begun October 19, 1899.

First examination, October 19, 1899. Red corpuscles, 3,500,000; hæmoglobin, eighty-four per cent.

Second examination, October 30th. Red corpuscles, 3,800,000; hæmoglobin, eighty-four per cent.

Third examination, November 9th. Red corpuscles, 3,800,000; hæmoglobin, ninety per cent.

Fourth examination, November 18th. Red corpuscles, 4,000,000; hæmoglobin, ninety-two per cent.

Fifth examination, November 28th. Red corpuscles, 4,500,000; hæmoglobin, ninety-eight per cent.

Increase absolute: Red corpuscles, 1,000,000; hæmoglobin, fourteen per cent.

Case III.—E. L., single; female, aged twenty-four; a demiblonde; occupation, chocolate dipper in a candy factory. Home, tenement house, with unfit sanitary arrangements; family poor.

History of chronic dyspepsia lasting for a number of months, which was treated at the dispensary of another college, by specialists, with lavage of stomach; no improvement resulted.

She was discouraged and came to the dispensary of the Maryland Medical College, where her history of pain, vomiting, and nausea after meals, with constipation, malaise, and weakness was given. Along with this, her pale, waxen appearance indicated a chlorotic condition. She was given "aromatin" exclusively, except a mixture of fluid extract of cascara and tincture of nux vomica with bismuth for a short time. At the end of the seven weeks' treatment her general appearance had improved, she had color, and her conjunctiva showed its normal appearance. She stated she was almost herself again, rarely ever vomited, and had no pain after eating; her constipation was improved, and she was working twelve hours a day. This girl had made no change in her manner of living, she had only her usual diet, and had to work in a factory with a number of other girls and rarely had an opportunity to get fresh air.

Microscopic report showed relative increase of red corpuscles, thirty-one and a quarter per cent.; hæmoglobin, ten per cent.

The former diagnosis and treatment for gastritis were certainly wrong, and the deep-seated trouble would have been recognized had a blood count been made.

Microscopic Report.—Treatment begun October 19, 1899.

First examination, October 19, 1899. Red corpuscles, 3,200,000; hæmoglobin, eighty-six per cent.

Second examination, October 30th. Red corpuscles, 3,650,000; hæmoglobin, eighty-eight per cent.

Third examination, November 9th. Red corpuscles, 3,900,000; hæmoglobin, eighty-eight per cent.

Fourth examination, November 18th. Red corpuscles, 3,900,000; hæmoglobin, ninety per cent.

Fifth examination, November 28th. Red corpuscles, 4,200,000; hæmoglobin, ninety-six per cent.

Increase absolute: Red corpuscles, 1,000,000; hæmoglobin, ten per cent.

Case IV.—G. C., aged twenty-five years; medical student; tall, slender, blond; hours of confinement long, with extra amount of work imposed, owing to back work.

Anæmia, with lassitude, fatigue on exertion, inability to concentrate the mind in study. Anæmia due to overwork and lack of exercise.

Placed on "aromatin," under which he improved in every way.

Microscopic report showed relative gain: Red corpuscles, thirty-one and a half per cent.; hæmoglobin, eight per cent.

Microscopic Report.—Treatment begun October 30, 1899.

First examination, October 30, 1899. Red corpuscles, 3,200,000; hæmoglobin, eighty-four per cent.

Second examination, November 9th.* Red corpuscles, 3,800,000; hæmoglobin, eighty-five per cent.

Third examination, November 18th. Red corpuscles, 4,000,000; hæmoglobin, ninety per cent.

Fourth examination, November 28th. Red corpuscles, 4,300,000; hæmoglobin, ninety-two per cent.

Increase absolute: Red corpuscles, 1,100,000; hæmoglobin, eight per cent.

Case V.—R. L., aged fourteen, a schoolboy; suffering with anæmia secondary to malaria. Listless, inactive, disposition to lie around and sleep; no appetite; loss of flesh. His condition was overcome after the treatment of "aromatin." His weight was increasing, and he began to get back his animal spirits of activity. Appetite much improved.

Microscopic report showed relative increase: Red corpuscles, twenty-seven and a quarter per cent.; hæmoglobin, seven per cent.

Microscopic Report.—Treatment begun October 19, 1899.

First examination, October 19, 1899. Red corpuscles, 3,300,000; hæmoglobin, eighty-three per cent.

Second examination, October 30th. Red corpuscles, 3,300,000; hæmoglobin, eighty-five per cent.

Third examination, November 9th. Red corpus- 3,500,000; hæmoglobin, eighty-six per cent.

Fourth examination, November 18th. Red corpuscles, 3,800,000; hæmoglobin, eighty-four per cent.*

Fifth examination, November 28th. Red corpuscles, 4,200,000; hæmoglobin, ninety per cent.

Increase absolute: Red corpuscles, 900,000; hæmoglobin, seven per cent.

Case VI.—P. G. M., a little girl, aged thirteen years; blonde; small for her age, with slight spinal curvature. Home comfortable and good, but being an only child she is pampered and her mode of life not regulated; eats largely of sweetmeats, which it seemed impossible to stop. Her only symptoms were the general appearances of anæmia and a feeling of coldness in extremities. She would not take proper exercise, and would eat little or no meat. Her treatment was exclusively that of "aromatin," under which she improved greatly in appearance, and particularly in overcoming languor.

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* Just why there is a drop in percentage of hæmoglobin I am unable to say, as no history of chill or hæmorrhage could be obtained.

Microscopic report showed relative increase of red corpuscles, twenty-five per cent.; hæmoglobin, seven per cent.

Microscopical Report.—Treatment begun October 19, 1899.

First examination, October 19, 1899. Red corpuscles, 3,200,000; hæmoglobin, eighty-two per cent.

Second examination, October 30th. Red corpuscles, 3,500,000; hæmoglobin, eighty-three per cent.

Third examination, November 9th. Red corpuscles, 3,600,000; hæmoglobin, eighty-three per cent.

Fourth examination, November 18th. Red corpuscles, 3,800,000; hæmoglobin, eighty-eight per cent.

Fifth examination, November 28th. Red corpuscles, 4,000,000; hæmoglobin, eighty-nine per cent.

Increase absolute: Red corpuscles, 800,000; hæmoglobin, seven per cent.

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REPORT OF
A CASE OF DOUBLE, OR TWIN, UVULA.

By LEWIS S. SOMERS, M. D.,
PHILADELPHIA.

Developmental anomalies of the upper respiratory tract, especially when involving osseous structures, are so often associated with defective functionation of the part involved that it suggests such should be the case in defects of the curtain of the palate. Yet in defective uvulas that have come under my observation no perceptible alteration in phonation or deglutition has been observed so long as the bony structures were normal. This is also true in cases of elongated uvula removed by surgical measures, and seems to indicate that this portion of the soft palate does not possess all the physiological functions attributed to it.

Defective asymmetry, contour, and position of the uvula may be the result of local disease, or a consequence of defective innervation from peripheral or central lesions; but separation of the lateral segments, to whatever extent, is always a developmental error, and may be studied as a step in the condition of cleft palate. When the uvula alone is involved, the approximation of the two halves of fœtal life is deficient to a minor degree, an extension of this lack of approximation constituting the former anomaly. The *rationale* of cleft or double uvula becomes most striking when it is recalled that the oropharynx is in embryo a part of what will later become the anterior section of the alimentary canal, this segment being formed by epiblastic invagination. The anterior pillars, uvula, and palate are formed from the second visceral arches, and each lateral half is the result of the superior maxillary processes meeting in the rhapheal line and forming the oronasal sæptum or palate. The development of osseous tissue at a later stage constitutes the hard palate, this being limited at its posterior extremity to soft tissue, without the development of bone cells, and constituting the dependent portion or uvula. It can readily be seen, therefore, that any interference with the intrauterine approximation of these lateral halves will produce the condition under discussion, the extent of interference, especially if it is from behind forward, such as unusual and early development of pharyngeal lymphoid tissue projecting into the median line, depending upon the amount of the disturbing element, whatever may be its nature.

The separation of the coalescing halves may vary from a fraction of the most dependent portion to the entire absence of any attempts at median approximation, the latter constituting the double uvula. When the separate segments are complete to the palate line, but lie in approximation, although not connected except at the base, I believe the term bifid is most appropriate, the term twin or double uvula being limited to those more rare cases containing muscle fibres, and being widely divergent from the median line—in fact, the two complete uvulæ usually are in contact, each with its corresponding tonsil. Besides being bifurcated, the uvula may be asymmetrical in regard to position and contour, the split uvula being the most frequent aberration of the soft palate. As a result of disease, and not as a consequence of antenatal development, these conditions may be simulated; but when such is the case the history of the patient and the presence of scar tissue will readily demonstrate the cause of the aberration.

The following case is typical of the twin or congenital double uvula, and presents several points of interest bearing on the anomalies of this region:

A. W., a woman, aged twenty-five years, was seen September 30, 1899, complaining of gradual impairment of hearing for one year. The ears presented the appearance of chronic tympanic sclerosis. She had never been ill, even escaping the diseases of childhood, and had not had any trouble with her nose and throat. During the usual routine examination of the upper respiratory tract it was found that she possessed two distinct uvulæ, both being approximated from the mucosa on their surface to the respective tonsils. Each uvula had its base at the right and left side of the median line, which left a large triangular gap extending to the hard palate but not involving it, through which the posterior pharyngeal wall and a portion of the Eustachian openings could be seen.

The uvulæ were each complete, with normal contour and a centrally situated rhaphe, and possessed independent muscular movements, one from the other. When one was irritated, it would respond to the stimulus without a corresponding movement of the other, and showed that the innervation of each was also independent. The palate was developed in the proper plane, the nasal interior was symmetrical, and the sæptum straight. On questioning—and she was as intelligent as the normal mill hand of her class—she stated that she was born with the anomaly, but had not considered it other than normal, as it had never produced any symptoms, deglutition, respiration, and vocalization being perfectly natural. What factor it played in the ætiology of the aural affection I am unable to state.

The question of hereditary influence naturally arises in the study of developmental anomalies wherever situated, and irregular development of the soft palate in immediate or distant blood relatives may be present to a slight extent, but not sufficient to call their attention to it, or there may be other minor anomalies of the upper respiratory tract unknown until an examination is made for other reasons and the abnormity discovered. Under such circumstances, which I believe to be the rule rather than the exception, the question of anomalies in other relatives will be answered by the patient in the negative, as was the case with my patient, she stating that, so far as she knew, all her people were normal. That these anomalies of the uvula may and often do exist without the knowledge of the individual I have frequently noticed, great surprise being manifested when his attention is first directed to the condition. I believe, therefore, so far as one can go into the question of heredity, that similar or related anomalies are not limited to one member of the family, but in near or distant relatives like developmental errors, possibly of less extent, will be found if carefully sought after, my experience being that, although the patient gives a negative family history, yet personal observation of other members of the family will supply an affirmative answer in the majority of instances.

The association of other malformations of the respiratory tract or elsewhere in the same individual is not usually present, the uvula alone being concerned in the formative error.

Whether the uvula is separated to a greater or less extent, these cases, in my experience, present an associated hyperplasia of the lymphoid tissue of the pharyngeal vault, but the frequency of adenoids in early life renders any supposed relation that may exist between the two a mere matter of conjecture. Yet I practically always find adenoid tissue in excess, and in adults the characteristic facies and other consequences of such are a matter of comment, so frequently does this occur. Other than this, and I am not prepared to advocate the prenatal influence of this hyperplasia in the ætiology of the uvular aberration, no decided asymmetry of the upper respiratory tract has been noted.

Judging by the literature, similar conditions are comparatively rare, Berens * having found, in an examination of three thousand throats, but two cases, while Ohmann-Dumesnil † reports a case, and Lennox Browne ‡ illustrates a case in a man of twenty-two years, and states he has also observed one individual with a triple uvula. Bishop # also illustrates a complete double uvula in a boy of fourteen.

In all these cases, as in my own, two factors of importance were noted, the first being that the condition in itself causes no symptoms or inconvenience other than those due to any affection which may involve the normal tissues, the mere presence of the cleft not being of itself of any pathological import; while in the second place it bears no relation to the mental state of the individual, the intelligence being that possessed by any normal person.

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PERINEAL LACERATIONS IN COUNTRY PRACTICE.

By H. H. WILSON, M. D.,
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IN behalf of the younger members of the profession, particularly in country practice, I should like to say a few words in regard to perineal lacerations following childbirth.

No matter how skillful we may be or how carefully we may guard against it, there are cases in which we are bound to have lacerations; generally slight, but sometimes deep, and occasionally complete and involving the rectal wall.

In ordinary normal labors the perinæum can generally be preserved intact by holding back the presenting head, thus relieving the tension somewhat until dilatation has become great enough to allow it safely to pass. This can be better accomplished with the patient in the lateral position.

When the perinæum has dilated as far as possible, and yet not sufficiently to allow the head to pass and laceration seems inevitable, a double episeiotomy will give sufficient room and the integrity of the perinæum be preserved. The operation, when properly performed, does not result in injury to surrounding parts. An incision is made on each side of the vulvar opening through the tense ring, which can be felt half an inch above the border of the vulva. Great care should be taken that the incisions are made parallel with the axis of the vulvar opening. They should be a quarter of an inch deep and an inch long, and can be made with a pair of blunt-pointed scissors or a blunt-pointed bistoury.

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* *Medical Bulletin*, Philadelphia, May, 1893.

† *Laryngoscope*, vol. iii, 1897.

‡ *Diseases of the Nose and Throat*, fifth edition.

# *Diseases of the Nose, Throat, and Ear.*

Where we have a moderate laceration, or when episeiotomy incisions have been made, as soon after delivery as possible a few sutures should be inserted and the raw surfaces drawn closely together. The sooner this is done the better will be the result.

Deep, complete perineal lacerations, involving or passing through the rectal wall, are probably most frequently the result of forcible instrumental deliveries. This can often be obviated by allowing the head to rest on the perinæum long enough to admit of dilatation. Sometimes, in the interest of child or mother, or both, we can not wait; then, as frequently happens, we have a deep, complete laceration.

My experience in cases of this kind has been that it is far better not to try to do any kind of a repair operation at this time. To be well done the operation is tedious, your patient is exhausted before you begin, you can not have the asepsis necessary, your stitches may slough out, or there will be only partial union, with the resulting prolapsed uterus, rectocele, or cystocele later on.

Far better to keep your patient quiet for three or four weeks and insist upon perfect cleanliness; this can be obtained by a carbolic douche morning and night (carbolic acid, a drachm, to warm water, a pint). Cleanse the vulva frequently with creolin solution; use vulvar pads of gauze and absorbent cotton, and change them whenever soiled; build up your patient's health by good, nourishing food, tonics if necessary, and have the bowels move every day; then, at the end of three weeks or a month, take her to the nearest hospital and have a repair operation performed by a good surgeon. In this way you will save your patient years of discomfort and poor health, for a woman's health depends in great part upon the integrity of her reproductive organs.

Therapeutical Notes.

Izaac's Paste for Acne.—The *Journal de médecine de Paris* for November 12th gives the following formula:

℞ Resorcin		30 grains;
Oxide of zinc, Powdered starch,	of each	75 "
Vaseline		150 "

M. To be applied in the evening, and removed in the morning with a little tar water.

Ichthyol as a Laxative.—The *Northwestern Lancet* for February 15th quotes the following from the *Bulletin générale de thérapeutique*: Gunsburg has reported the use of this treatment in fifty women suffering from various inflammatory affections of the genitalia, accompanied by constipation and dyspepsia. The ichthyol was given in pills of three grains once, twice, or thrice a day. The result was that the constipation was overcome without any colicky pain or diarrhœa, the appetite improved, and the pain in the abdomen decreased. As the taste of the ichthyol is disagreeable, Gunsburg suggests that it be given in keratin-coated or enteric pills.

Von Graefe's Diaphoretic Powder.—The following formula is given in the *Gazzetta degli ospedali e delle cliniche* for December 10, 1899:

℞ Powdered camphor	0.30 of a grain;
Powdered opium	0.45 " "
Potassium nitrate	3.75 grains;
Sugar	1.12 grain.

M. To be taken at bedtime in a cup of tea.

Calcium Phosphate in the Treatment of Pulmonary Consumption.—In a recent pamphlet entitled *Nouvelle contribution au traitement de la phthisie pulmonaire*, published in Naples, Dr. Gustave Angiulli advocates the subcutaneous employment of a soluble calcium phosphate the formula of which he gives as $CaH_4(PO_4)_2.H_2O$ in the treatment of tuberculous pulmonary disease, to promote calcification of the deposits. He gives notes of two cases. One of them proved fatal, and in the other recovery is reported as in progress.

Arsenic in Anæmia and Incipient Tuberculous Disease.—The following formula is given in the *Riforma medica* for December 23, 1899:

℞ Arsenous acid		0.06 of a grain;
Extract of nux vomica		0.6 " "
Hæmogallol		3 drachms;
Gum arabic, Sugar,	each	a sufficiency.

M. Divide into sixty pills. One or two to be taken daily.

The Treatment of Hiccough.—M. J. Noir (*Progrès médical*, January 6th; *Lyon médical*, February 4th) records the case of a girl, six years and a half of age, who suffered from persistent attacks of hiccough. M. Noir, on seeing her in one access, which had continued for six hours and a half, drew out the tongue and held it protruded for the space of a minute and a half, which calmed the spasms as if by enchantment. They did not reappear. This procedure is not altogether new, but is not, we think, sufficiently appreciated.

A Lotion for Eczema and Urticaria.—The following formula (*Bulletin général de thérapeutique; Progrès médical*, December 30, 1899) is attributed to Wolff:

℞ Prepared calamine, Zinc oxide,	each	6 parts;
Carbolic acid		2 "
Limewater		60 "
Rose water		130 "

M. For children, the proportion of carbolic acid is to be reduced.

The Treatment of Biliary Colic. — Sir Thomas Lauder Brunton (*Clinical Journal*, January 10th) says that during the passage of a gallstone the only thing that really is of much good is the subcutaneous injection of morphine, but he has sometimes found in cases where the pain was not so very great that a mixture containing ten minims of Hoffmann's drops (spiritus ætheris compositus), ten minims of spirit of ether, ten minims of spirit of chloroform, and about a teaspoonful (that is to say, a drachm) of compound tincture of camphor, with some peppermint water, very often seems to give relief.

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GENIUS AND DEGENERATION.

It has become quite a fashion of late to try to prove that every one who has hitherto been regarded as, in some particular, one of the world's ornaments was in truth only a "degenerate," and to show that genius itself is only another name for degeneracy taking a peculiar trend. Byron, Napoleon, Milton, Dante, Goethe, and scores of others have come under the ban of the degeneration-mongers. The *Lancet* for February 10th cites from a contribution of Dr. W. W. Ireland's, in the *Journal of Mental Science* for January, the latest addition to the ranks of illustrious degenerates, Auguste Comte. In the *Forum* for July, 1899, Professor Lombroso placed Christopher Columbus among the paranoiacs. The various psychical offenses attributed to Columbus by the professor, such, for instance, as bad Latin, inaccurate and possibly unveracious statements in matters geographical, the "searching the Scriptures" to find arguments in favor of undiscovered islands, and even the partial practice of scriptural philosophy by an attempt to make reparation to a discarded mistress, really make one quail before the idea of any self-examination. We may, it would seem, all of us discard a qualitative analysis of ourselves and our friends for degeneracy, and proceed without waste of time to a quantitative analysis.

Comte, according to Dr. Ireland, was deceived by his unfaithful wife, who made his home life "hard and jangling" and his existence generally miserable, till the poor man became for a while melancholic and even "conceived thoughts of suicide." That was bad enough. But he even overcame these temptations, though he admits that he would probably have yielded to them had the bitterness of his domestic life not been neutralized by the consciousness of his social mission. What awful degeneracy is here! First, in a bad period of the blues, occasioned by causes terrible enough to drive an archangel crazy, he conceived thoughts of suicide. Then, to make things worse, his inordinate vanity, leading him to regard his social mission as a duty of some import to the race, gave him strength enough to overcome his temptations. And, finally, some two years after he had separated from his wife he still retained sufficient affection in his nature to become deeply attached to another woman, who, however, died from consumption during his brief courtship.

We are beginning to see light on the evolution of the future perfect race. The recipe would run somewhat as follows: Take a human being; eliminate every trace of emotion; abolish all passion; kill all his intellectual individuality, so that he can work mechanically like an automaton; construct, in short, a human marionette, and then at last we shall have arrived at the "normal" human being without a trace of the "degenerate" about him.

The newspaper press is full of catchpenny uses of the word till it positively stinks in the nostrils of most people "degenerate" enough to have any affectional and emotional elements left wherewith to temper the mechanical cast of their intellects. Surely all this effort to prove every genius, because by virtue of his genius he is necessarily unusual, a paranoiac resolves itself into an apotheosis of the commonplace, exalting the dead level and deifying mediocrity.

THE SCHOOL OF PRACTICAL HYGIENE AND SANITARY SCIENCE OF CORNELL UNIVERSITY MEDICAL COLLEGE.

A notable indication of the advance of medical education is to be found in a recent announcement by the Cornell University Medical College of the establishment of a School of Hygiene and Sanitary Science. Reference to the circular of information just issued shows not only that its aim is to teach undergraduates, but that it is specially planned to meet the needs of health officers throughout the cities, towns, and villages of the country. It is commonly taken for granted that the ordinary physician understands all about such matters as pertain to the health of large collections of people, but as a matter of fact the endless details which have arisen from the increase of population and the crowding in great centres have far outstripped the knowledge of the inexperienced health officer, and too often he has to acquire this knowledge at the expense of the public. In the primitive community it was a simple enough matter, though too often neglected, to protect the water supply and to see that the drains emptied below the reservoir, and that the public school had room enough for the pupils who attended it, but with the changes which have taken place in the last few years vastly more complex questions have arisen. A health officer has to consider not only his own township and its care, but all the questions of inter-State and international sanitation and quarantine in both their legal and their scientific aspects. The subdivisions of the work which come under the care of the presiding officer of a board of health are multitudinous, and an efficient officer must at least understand the principles of them all.

A *résumé* of the subjects in which the new school is to give instruction will give an idea of the utility of such a school to the general public as well as to its sanitary officers. In the matter of water supply, a health board must understand the uses to which it is allowable to put the water in order not to waste it and to get the greatest benefit from the quantity obtained. The board must also understand the dangers of the contamination which may arise, and be fully conversant with the means of avoiding them and with measures of protection when they do occur. The individual officer must be able to tell pure from impure water, and when the water is impure must be able to propose to the city or community a scheme by which the water can be made perfectly safe. It taxes the best-informed officials of the country to devise proper methods to accomplish the purification of water, all of which must be understood, and to decide as to which is most suitable and most economical in actual practice in a given community.

Then, in great cities the impurities in the air are a matter for very serious consideration, also the sources of these impurities and how to avoid them. The importance of these things is shown by the reports of our board of health following the work of the Street Cleaning Department under the late Colonel Waring, showing that the death-rate fell decidedly as the mere result of removing the dirt from the streets and so keeping the atmosphere measurably free from contamination. Tenements, hotels, club-houses, prisons, and all other buildings in which human beings congregate have to be under intelligent supervision, and, while the average individual may, in a general way, understand that space and ventilation are to be allowed for each occupant of a factory or house or tenement, it is necessary for the health officer to know exactly when such a building is properly constructed and when it is not, and he must also know how to make the improvements called for in this respect.

The work of superintending the food supply of great centres of population is another duty which devolves upon the health officer, and he must know the methods of testing the various food stuffs employed, like vegetables, meats, milk, etc.; he must understand the laws which cover all these things, and must know how far he can go in testing suspected articles. Adulterations are engrossing a great deal of public attention at present, and, while many of them are harmless and some perhaps necessary, others are abominable. It may even be possible that adulteration is beneficial in certain instances in supplying an article of food of equal nutritive value with a pure article, but furnished for a smaller price. These matters must be thoroughly understood, also the laws covering them.

The dead are usually disposed of by burial or cremation. In the country each farmer may perhaps have a burial plot on his own property, and it would be a matter of small moment to the community at large to know what had become of the deceased members of his family. In large towns, however, the matter is growing to be more and more of a problem, and much can be done in the way of public education toward the best methods of attending to these things.

Infectious diseases are intimately connected with the welfare of large towns and cities, and the laws pertaining to them should be fully understood. It may often be possible for an efficient health officer to improve upon those already existing. Some infectious diseases are exceedingly rare, and many men who live in healthful communities have never seen them; hence, if the local health officer is lacking in experimental knowledge of them, great dangers may be thrust upon an unsuspecting public. In a large city like New York almost every known disease can be seen at one time or another, and a thorough knowledge obtained of its clinical aspect and how to verify its diagnosis. It is a self-evident fact that a mistake, even on the right side, may become a very serious matter by alarming a whole community, and it is exceedingly important that errors should not be made in this respect. In New York, with its endless opportunities for practical research, the necessary practical education can be acquired in a comparatively short time.

Methods of disinfection are transcendently important, but some of those which are popularly used are absolutely of no value, and a wide, thorough knowledge of disinfection should be disseminated, as considerable loss may easily arise and incredible damage result from a lack of it. The preservation of various articles of food is of course to be considered in this connection. Those of great value may be readily destroyed by one method or satisfactorily preserved by another.

Great damage can result to a city from its being built in an improper situation, and the selection of proper sites for valuable buildings and attention to surface drainage and the character of the ground are matters which a health officer must be familiar with. He must understand heating, lighting, plumbing, and drainage, and must be thoroughly familiar with how to dispose of factory waste and deal with nuisances like smoke, noise, noxious vapors, etc. In the country the disposal of the sewage as the town increases in size becomes a matter of vital importance, and a thorough engineer may save much to the village by indicating the least expensive and most serviceable methods. In large cities the disposal of the refuse which accumulates in the streets, and its cost and relation to public health, are all to be thought of. New York, the largest city in the country, has become somewhat famous by its excellent treatment of these matters and in furnishing a valuable demonstration to less fortunate communities. In this department, we understand, the school is to have the assistance of some of the men who signally aided the late Colonel Waring in his estimable work.

The laws which govern health boards and the duties of these boards and their relation to others are matters concerning which a teacher who is thoroughly familiar with all their legal aspects will greatly assist an inexperienced health officer in acquiring the knowledge he could not otherwise obtain except by costly experience. The duties of a health officer call for much that is beyond the average physician's knowledge. It is of great importance to have for health officers men who thoroughly understand their duties, and we are glad to learn that it is the design of Cornell to have this course thoroughly taught, as much as possible by practical demonstrators in laboratory work, not only in the microscopical and chemical work, but by actually demonstrating what is done in New York.

THE BRITISH CONSULTING SURGEONS AT THE SEAT OF WAR.

The *Army and Navy Journal* speaks somewhat disparagingly of the eminent civil surgeons at the seat of war. Our contemporary, in its issue for March 3d, says: "It appears that the distinguished British surgeons, whose patriotism in going to the front has been so much commended, are in receipt of salaries of $25,000 a year each in place of the small salaries paid to the regular medical men."

It is probable that most, if not all, of the eminent surgeons referred to make a considerable pecuniary sacrifice in accepting a salary of $25,000 a year in recompense for their loss of practice. Further, it must be remembered that medical practice, far more in England perhaps than here, is a matter of personal *clientèle,* and it is not only the actual fees lost that prevent many a man from taking a much-needed and well-earned holiday, but the inevitable replacement by some other surgeon, and the loss of new connections which might otherwise have been obtained. In London particularly it is a very easy matter even for an eminent man to get "out of the swim," while, as more than one man of almost world-wide reputation could testify, having once temporarily dropped out of the running, one requires almost superhuman power to take it up again. From the surgeon's point of view, therefore, we do not think these salaries at all excessive.

Looking at the appointment from another standpoint, we find it probable that never again will any great nation allow its armies to go into the field without the highest available technical skill, which is necessarily civil, as well as the best-trained organizing and administrative capacity, which is the essential function of the military medical officer, as distinguished from the civilian practitioner. And this is as it should be. Further, it is well that there should be good independent testimony to assure anxious friends non-officially that the best possible is being done. We as a nation have surely learned that.

A MALE PSEUDOCYETIC.

It seems that the fair sex has no monopoly of pseudocyesis. There is a French story (*Chromique médicale,* February 1st; *Lyon médical,* February 11th) about a certain Dr. Campbell, who, although British, practised in France and made a specialty of obstetrics. He kept only one of his former British patients, and that one, strange to say, was a man, a crazy lord who at intervals imagined himself to be pregnant. He would procure the proper outfit, in due time he would take to his bed, and he would send for Campbell, who found him apparently in the throes of childbirth, and they would not cease till some newborn baby was procured and palmed off on the sufferer as his own offspring. On one of these occasions no baby was to be found, but a collegian in uniform happened along, and the daring makeshift was tried of seizing upon him and passing him off as a neonatus. The trick proved successful. "Ah!" cried Lord D. with a sigh and patting the young man on the cheek, "this explains why I suffered so much; it was the buttons!"

DAMAGES FOR ANTENATAL INJURIES.

A peculiar action was recently decided, according to the *New York Times* for February 21st, by the State supreme court at Springfield, Illinois. It seems that while a pregnant woman was in St. Luke's Hospital her left leg was caught in the elevator and crushed. The woman compromised her claim against the hospital; but when her child was subsequently born it had the left foot, left side, and left leg paralyzed and deformed. The mother thereupon brought suit as her infant's guardian for fifty thousand dollars damages for it. According to the *Times,* "a general demurrer to the declaration was sustained by the supreme court on the ground that at the time of the accident the child could not be credited as a separate being, capable of sustaining an action independent of the mother. 'If an action can be maintained,' the court says, 'it necessarily follows that an infant may maintain an action against its own mother for prenatal injuries.'"

A DIETETIC ADJUNCT TO THE BROMIDE TREATMENT OF EPILEPSY.

Every physician recognizes and deplores the danger of pushing the bromide treatment of epilepsy to the point of its full efficiency, and it is to be hoped that further experience will confirm the observations of M. Richet and M. Toulouse, who, at a recent meeting of the French Academy of Sciences (*Gazette hebdomadaire de médecine et de chirurgie*, December 7, 1899), reported that in a number of instances they had been able to avert bromism by restricting the amount of chlorides in the diet, chiefly by reducing the allowance of common salt, and that such a change in the diet had been in every way innocuous.

ECHINACEA ANGUSTIFOLIA.

Dr. Coplin Stinson, of San Francisco, whose article on this plant appeared in our issue for January 13th, has sent us the following additional information on points concerning which he has been inundated with correspondence since the appearance of his article. He advises the routine use internally of twenty minims of the preparation of echinacea, in a little water, three times daily, and its topical application in full strength also three times a day, with a special application before any attempt at intercourse. The author, in conjunction with several of his colleagues, has noted that in persons who have been a long time circumcised, and in certain other instances, the mucous membrane of the glans and corona loses the sensitiveness of ordinary mucous membrane, and presents no greater sensation or absorptive power than ordinary integument. In such cases good results, he says, have followed the instillation of several drops of echinacea into the meatus urinarius, thus bringing it in contact with the mucous membrane of the urethra.

THE SUPERIOR BOARD OF HEALTH OF PUERTO RICO.

We are indebted to the surgeon-general of the army for a copy of a pamphlet on tropical anæmia, a disease very prevalent and destructive of life in Puerto Rico. It is a circular of information designed to enable the physicians of the island to recognize the disease more readily and to prevent or cure it. It is printed in parallel columns of English and Spanish. Among the board's other publications are one entitled *Typhoid Fever and its Prevention* and one on *Dysentery and its Prevention*. It is apparent that the board is doing excellent work.

THE VOLUNTARY DETERMINATION OF SEX.

As we supposed would be the case, Dr. Davis's article published in the *Journal* for February 24th has excited considerable attention. In this issue, in a letter to the editor, Dr. Herrman presents a graphic representation of the periods in each menstrual cycle to which Dr. Davis assigns significance as regards the sex of offspring conceived during their continuance. From the preponderance of the time in which, according to Dr. Davis's theory, girls only are conceived he argues that, if the theory is correct, more girls than boys should be born, whereas the reverse is known to be the case. It would be strange if this point had escaped Dr. Davis's consideration, and doubtless she will be able to clear it up. In the mean time, we may suggest that several of the days assigned to the production of girls, those immediately before and especially those directly after the menstrual flow, are days of abstinence from coitus with the vast majority of people, we believe.

"THE EIGHTH COMMANDMENT IN MEDICAL JOURNALISM."

Under this heading in the February number of the *Canada Lancet* we find an editorial article written in the most manly spirit, explaining that the present staff of the journal is not responsible for certain shortcomings in the matter of giving credit to its contemporaries. We think the *Lancet* should be entirely absolved of any suspicion of intentional offending, and we admire the attitude taken in the article whose heading we have quoted.

BORDER PHYSICIANS AND THE NOTIFICATION OF DISEASE.

According to the *Peoria Medical Journal* for February, the secretary of the Board of Health of Allen County, Indiana, has been compelled to forbid physicians from over the Ohio border from practising in that county, owing to their neglect of the duty of reporting contagious disease. It is easy to comprehend that in places on the border line of two States the possibility of calling in a physician from over the border might be welcomed by people who in their ignorance object to the sanitary principles involved in compulsory notification of infectious disease, but physicians should know better than to aid and abet them in this course.

FAITH HEALING AND THE LAW.

According to the *New York Tribune* for March 5th, the aid of the law is to be invoked to rescue a young woman in Chicago from the criminal folly of the faith-healing community. The young woman is said to be suffering from "brain fever," which from the reference to her screams of agony we take to be tuberculous meningitis, and these wiseacres, led by a former regular physician, "are attempting to cure her by casting out devils, anointing the head with oil, and other methods." The Humane Society and the health department having no legal ground to interfere, a judge has been appealed to for an order to commit her to the Detention Hospital for treatment. The absurd blasphemy of these people is exemplified in the following statement, which purports to have emanated from one of the before-mentioned physician's disciples: "Miss Bettison's illness is due to the rapidity of her spiritual experience. It is due to the struggle between the Holy Ghost and whatever of evil there is in her for mastery. The Holy Ghost seems to have come to her all at once and it is more than her body can stand. We feel sure she will be well in a few days if we are only left alone and allowed to care for her, as Dr. Gentry says." We are no advocates for any undue interference with the personal liberty of the individual adult in full possession of his faculties to get his treatment in disease done for him as he gets his laundry, anywhere and by any method that pleases him. But children, who are incompetent to take care of themselves, and adults who are mentally incapacitated, either permanently or temporarily, have a right to protection from the vagaries of fanatics.

WOMEN PHYSICIANS IN OFFICIAL POSITIONS.

It is gratifying to learn that, as stated in the *Medical News* for February 10th, two women physicians of California have been placed in official positions within a week. Dr. Beatrice M. Hinkle has been appointed by the board of health of San Francisco assistant city physician, and Dr. Agnes Walker has been appointed from Washington quarantine inspector and federal quarantine officer at Kinyoun. Dr. Walker's duties will be to examine the women and children arriving on vessels from infected ports and to take charge of them while they are in quarantine.

A BELIEF IN FAITH CURE AS A GROUND FOR DIVORCE.

According to the *New York Tribune* for March 5th, a divorce was recently granted in the circuit court at Chicago to an ex-congressman, the specified cause being the wife's belief in the efficacy of faith-healing. We presume that the cause of contention arose out of an impossibility of agreement as to the treatment of the children in disease.

THE MOSQUITO AND MALARIAL DISEASE.

In spite of the rapidly accumulating circumstantial evidence connecting malarial disease with the mosquito, there are still many disbelievers. These largely support their case by citing places which abound with mosquitoes, yet from which malaria seems altogether absent. Further investigation, however, usually makes it clear that the *Anopheles* is not present. The *Journal of Tropical Medicine* for February cites an excellent specimen in Acqua Albule, a hamlet on the road between Rome and Tivoli, where there is a thermal sulphurous spring. The stream flowing through the locality is said to be white with sulphur, while the neighborhood is redolent of sulphurous-acid gas. The region has long been regarded as a non-malarial oasis. It is probable in this instance, the journal thinks, that the suphurous gas is too strong for the larva of the delicate *Anopheles*, though the hardier *Culex* abounds, and this explanation seems to us well warranted. An investigation should easily settle the presence or absence of the *Anopheles*.

ITEMS.

The St. Louis Medical Society of Missouri.—At the last regular meeting, on Saturday evening, the 3d inst., the following papers were presented for discussion: Postfebrile Insanities, relating particularly to *La Grippe* and Typhoid Fever, by Dr. J. K. Baudy; and An Unusually Interesting Case of Extra-uterine Pregnancy, by Dr. G. Wiley Broome.

Small-pox and Measles at Yale University.—A member of the freshman class of the Sheffield Scientific School is at present ill with small-pox, and a number of the students of the university are said to have been attacked with measles.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported for the two weeks ending March 3, 1900.

DISEASES.	Week ending Feb. 24.		Week ending Mar. 3.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	25	10	7	3
Scarlet fever	195	17	160	23
Cerebro-spinal meningitis	0	5	0	7
Measles	896	60	818	33
Diphtheria	285	50	262	54
Laryngeal diphtheria (croup)	17	14	21	13
Tuberculosis	207	176	193	171
Chicken-pox	24	0	17	0
Small-pox	2	0	0	0

Marine-Hospital Service Health Reports.—The following cases of small-pox, yellow fever, cholera, and plague were reported to the surgeon-general during the week ending March 2, 1900:

Small-pox—United States.

Mobile Ala	Feb. 17–24	3 cases.	
Jacksonville, Fla	Feb. 17–24	2 "	
Rockford, Ill	Feb. 16–17	2 "	
Evansville, Ind	Feb. 17–24	3 "	
Indianapolis, Ind	Feb. 17–24	2 "	
Louisville, Ky	Feb. 15–22	4 "	
New Orleans, La	Feb. 17–24	55 "	23 deaths.
Greenwood, Miss	Feb. 10–17	87 "	
New York, N. Y	Feb. 17–24	2 "	
Cincinnati, Ohio	Feb. 17–23	1 case.	
Cleveland, Ohio	Feb. 17–24	20 cases.	
Youngstown, Ohio	Feb. 17–24	1 case.	
Salt Lake City, Utah	Feb. 17–24	1 "	
Portsmouth, Va	Feb. 17–24	6 cases,	2 "
Spokane, Wash	Feb. 17–24	9 "	
Tacoma, Wash	Feb. 10–17	9 "	

Small-pox—Foreign.

Rio de Janeiro, Brazil	Jan. 12–19		29 deaths.
Restigouche County, New Brunswick, Canada	Jan. 16–Feb. 3	73 cases.	
Gloucester County, New Brunswick, Canada	Jan. 25–Feb. 8	39 "	
Northumberland County, New Brunswick, Canada	Feb. 1	1 case.	
Westmoreland County, New Brunswick, Canada	Jan. 18–Feb. 3	3 cases.	
Amherstburg, Canada	Feb. 2–24	1 case.	
Gaspé Basin, Canada	Feb. 6–15	4 cases.	
Lyons, France	Jan. 27–Feb. 3		2 deaths.
Paris, France	Feb. 3–10		4 "
Königsberg, Germany	Jan. 27–Feb. 3	1 case.	
Gibraltar	Feb. 11–18	3 cases.	
Mexico, Mexico	Jan. 28–Feb. 11	24 "	19 "
Corunua, Spain	Feb. 3–10	3 "	1 death.
Madrid, Spain	Jan. 20–Feb. 3		21 deaths.
Straits Settlements, Singapore	Jan. 6–13		1 death.

Yellow Fever—Foreign.

Rio de Janeiro, Brazil	Jan. 12–19	16 cases,	6 deaths.

Cholera.

Oman, Arabia	Jan. 11	Generally prevalent and spreading.

Plague—Insular Possessions United States.

Honolulu, Hawaii	Jan. 23–Feb. 2		5 deaths.
Honolulu, Hawaii	Feb. 6	3 cases.	
Honolulu, Hawaii	Feb. 19	3 "	

Plague—Foreign.

Tamatave, Madagascar	Dec. 16–23	1 case,	1 death.

The Buffalo Academy of Medicine.—At the last regular meeting of the Section in Surgery, on Tuesday evening, the 6th inst., Dr. Edward S. Meyer was to read a paper on Goître.

Changes of Address.—Dr. Adolph William Dunbar, from Brooklyn to No. 159 Lexington Avenue, New York; Dr. Joseph B. Kenney, from the Degraff Building to No. 202 North Cascade Avenue, Colorado Springs, Colorado; Dr. Albert G. Pohly, to the Hotel Richelieu, One Hundred and Fourteenth Street and Fifth Avenue, New York; Dr. L. W. Zwisohn, to No. 1085 Lexington Avenue, New York.

The Plague in Honolulu.—The further expenditure of $300,000 in the work of fighting the plague in Honolulu appears about to be authorized.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from February 24 to March 3, 1900:*

ALDEN, WILLIAM, Acting Assistant Surgeon, United States Army, will proceed to his proper station, Pinar del Rio Barracks, Cuba.

DAVIDSON, W. F., Acting Assistant Surgeon, United States Army, will accompany Company C, Fifth Infantry, from Songo to Morro Castle.

DELGADO, JOSÉ M., Acting Assistant Surgeon, United States Army, will report on board the transport *Sedgwick* during the voyage of that vessel to New York and return to Havana.

FLAGG, CHARLES E. B., Captain and Assistant Surgeon, United States Army, is relieved from duty in this department and will proceed by transport to San Francisco, where, upon arrival, he will report to the adjutant general of the army for orders.

KELLY, JOHN P., Acting Assistant Surgeon, United States Army, is assigned to temporary duty at the United States General Hospital, Presidio of San Francisco, awaiting assignment to a government transport.

MCHENRY, G. A., Acting Assistant Surgeon, United States Army, will proceed to Mayari, relieving DE YBARRA, A. M. F., Acting Assistant Surgeon, United States Army, who will proceed to Santiago.

MELDRUM, GORDON B., Acting Assistant Surgeon, United States Army, will report for temporary duty at the United States General Hospital, Presidio of San Francisco, awaiting transportation to the Philippine Islands.

NOBLE, CHARLES D., Acting Assistant Surgeon, United States Army, is assigned to temporary duty with troops on the United States transport *Sherman*, to sail for the Philippine Islands.

STEPHENSON, WILLIAM, Captain and Assistant Surgeon, United States Army, is detailed as a member of the examining board at the Army Building, New York city, *vice* WOODRUFF, EZRA, Major and Surgeon, United States Army, relieved.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending March 3, 1900:*

ARNOLD, W. F., Passed Assistant Surgeon. Detached from the Pensacola Navy Yard and ordered to the Naval Hospital, Norfolk, Virginia, for treatment.

MORGAN, D. H., Assistant Surgeon. Ordered home from the Asiatic Station, and to await orders.

MURPHY, J. A., Assistant Surgeon. Ordered to the Pensacola Navy Yard.

OLCOTT, F. W., Passed Assistant Surgeon. Detached from the Naval Recruiting Rendezvous, Detroit, and ordered home, and to await orders.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the United States Marine-Hospital Service for the Seven Days ending March 1, 1900:*

BROOKS, S. D., Surgeon. To proceed to Bar Harbor, Maine, as inspector.

COBB, J. O., Passed Assistant Surgeon. To proceed to Folsom and Catskill, New Mexico, for special temporary duty.

PERRY, T. B., Passed Assistant Surgeon. To proceed to Buckhannon, West Virginia, for special temporary duty.

TABB, S. R., Assistant Surgeon. To proceed to Fernandina, Florida, as inspector.

VON EZDORF, R. H., Assistant Surgeon. To proceed to Atlanta and report to the Governor of Georgia for temporary duty.

WOODWARD, R. M., Passed Assistant Surgeon. Granted leave of absence for thirteen days from April 16th.

YOUNG, G. B., Passed Assistant Surgeon. Granted leave of absence for one day.

Society Meetings for the Coming Week:

MONDAY, *March 12th:* New York Academy of Medicine (Section in General Surgery); New York Academy of Sciences (Section in Chemistry and Technology); New York Medico-historical Society (private); New York Ophthalmological Society (private); Lenox Medical and Surgical Society, New York (private); Harlem Medical Association of the City of New York; Gynæcological Society of Boston; Burlington, Vermont, Medical and Surgical Club; Norwalk, Connecticut, Medical Society (private).

TUESDAY, *March 13th:* New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private); New York Obstetrical Society (private); Buffalo Academy of Medicine (Section in Medicine); Kings County, New York, Medical Association; Rome, New York, Medical Society; Medical Societies of the Counties of Rensselaer and Ulster (quarterly), New York; Newark (private) and Trenton, New Jersey, Medical Associations; Clinical Society of the Elizabeth, New Jersey, General Hospital and Dispensary; Northwestern Medical Society of Philadelphia; Practitioners' Club, Richmond, Kentucky; Richmond, Virginia, Academy of Medicine and Surgery.

WEDNESDAY, *March 14th:* New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Society of the Alumni of the City (Charity) Hospital; Society for Medical Progress, New York; Medical Societies of the Counties of Albany and Montgomery (quarterly), New York; Pittsfield, Massachusetts, Medical Association (private); Worcester, Massachusetts, District Medical Society (Worcester); Philadelphia County Medical Society.

THURSDAY, *March 15th:* New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Massachusetts, Society for Medical Improvement (private); Medical Society of City Hospital Alumni, St. Louis; Atlanta Society of Medicine.

FRIDAY, *March 16th:* New York Academy of Medicine (Section in Orthopædic Surgery); Clinical Society of the New York Post-graduate Medical School and Hospital; Baltimore Clinical Society; Chicago Gynæcological Society.

Births, Marriages, and Deaths.

Married.

DONOHOE—WINANTS.—In Bergen Point, New Jersey, on Monday, February 26th, Dr. Lucius F. Donohoe and Miss Frances W. A. Winants.

DOWNEY—THOMAS.—In New York, on Wednesday, February 21st, Dr. Martin Downey and Miss Amelia F. C. Thomas.

GENELLA—DE MONTANARI.—In New Orleans, on Saturday, February 24th, Dr. Alphonse J. K. Genella and Miss Rosey P. De Montanari.

HOLLOWAY—RHODES.—In Bunkie, Louisiana, on Monday, February 26th, Dr. William A. Holloway and Miss Nannie Rhodes.

LOWNDES—BAKER.—In Leavenworth, Kansas, on Wednesday, February 21st, Dr. Charles H. T. Lowndes, United States Navy, and Miss Mary Baker.

MIDDLETON—CHILTON.—In Madison, Mississippi, on Sunday, February 25th, Dr. Caleb S. Middleton, Jr., of Providence, Rhode Island, and Miss Maude D. Chilton.

SHERWOOD—PERKINS.—In Tarrytown, New York, on Thursday, February 22d, Dr. Milton S. Sherwood and Miss Bessie V. Perkins.

TYNBERG—FREEDMAN.—In New York, on Thursday, February 22d, Dr. Sigmund Tynberg and Miss Pauline Freedman.

TULLOCH—BAIRD.—In Boston, on Wednesday, February 21st, Dr. George L. Tulloch and Miss Edith L. Baird.

Died.

BEEBE.—In New York, on Thursday, March 1st, Dr. Clarence Edwin Beebe, in the fifty-first year of his age.

GREENE.—In Roxbury, Massachusetts, on Saturday, February 24th, Dr. Reuben Greene, aged eighty-three years.

KENNEDY.—In New York, on Sunday, February 25th, Dr. Samuel Kennedy.

MUIR.—In Bardstown, Kentucky, on Friday, February 23d, Dr. James Muir, in the eighty-first year of his age.

PORTER.—In Tuscanola, Mississippi, on Wednesday, February 28th, Mrs. Emma S. Porter, wife of Dr. J. R. Porter.

PRINCE.—In Irvington-on-the-Hudson, New York, on Sunday, March 4th, Dr. Christopher Prince, in the seventy-sixth year of his age.

WRIGHT.—In Chicago, on Sunday, February 25th, Dr. Andrew R. Wright, of Buffalo.

Pith of Current Literature.

The Pathogenesis of Yellow Fever.—Dr. Aristides Agramonte, acting assistant surgeon, United States army (*Medical News*, February 10th), in a Report on Bacteriological Investigations upon Yellow Fever, embracing research work undertaken in the city of Havana by order of the surgeon-general of the United States army, while confessing that the *cause* of yellow fever has escaped him, adds that the series of disappointments to which this research has subjected him are certainly amply repaid by the promising results derived from his attempts at serum therapy.

He arrives at the following conclusions:

"1. The specific pathogenic micro-organism of yellow fever is as yet an unknown entity in spite of the work reported by various observers; apparently, new methods of cultivation must be initiated or new culture media devised in future research.

"2. The *Bacillus icteroides* of Sanarelli, lately (1897) asserted to be the causative agent of yellow fever, is no more concerned in the production of this disease than the common colon bacilli which are constantly found in the blood and viscera of individuals suffering or dead from yellow fever.

"3. When approved bacteriological methods are employed, the bacillus of Sanarelli does not, as a rule, appear in cultures from the blood of yellow-fever patients.

"4. *Bacillus icteroides* may be and has been found present in the tissues of cadavers dead from other diseases, neither allied nor similar to yellow fever.

"5. The bacillus of Sanarelli, when subjected to agglutination tests, is not affected by the serum of yellow-fever patients or convalescents.

"6. The serum of convalescent yellow-fever cases affords absolutely no protection against infection by the bacillus of Sanarelli.

"7. None of the organisms thus far isolated from yellow-fever cases can be considered as the pathogenic agent of the disease.

"8. Experimental evidence has demonstrated that the serum of individuals convalescing from yellow fever, or who lately suffered an attack of this disease, will very materially and favorably affect those actually under the influence of the infection if injected under the skin, on or before the fourth day after the invasion; but that it requires further study to determine the protective power of different sera and the dosage.

"9. From the experimental evidence above referred to, we are led to believe that the subcutaneous injection of convalescent's serum will convey immunity to individuals whom we to-day consider as susceptible to the disease."

The Saline Treatment of Dysentery.—Major W. J. Buchanan, Indian Medical Staff (*British Medical Journal*, February 10th), supplements a previous article (*Indian Medical Gazette*, vol. xxxiii, No. 12, December, 1898) with a further account of 453 additional cases of dysentery treated with salines with only five deaths, making a total of 555 cases treated, with only six deaths in all. The stay in hospital was decidedly diminished, while relapses were very infrequent.

Major Buchanan thus describes his method:

The 102 cases reported over a year ago were all treated with magnesium sulphate, which was found to act admirably, promptly, and efficiently. It happened that the author ran short of that drug and took to sodium sulphate, and has continued its use ever since. The following mixture he finds satisfactory for general use:

℞	Sulphate of sodium	1 ounce;
	Fennel water	2 ounces.

M.

Of this mixture half an ounce is given three or four times a day. Purgation should be free but gentle, and when bright yellow stools without a trace of blood or mucus are passed, then the drug should be stopped, but resumed at once if blood or mucus reappears in the stools. It is usually found that after five or six stools all blood and mucus have disappeared from the stools, but in many cases they reappear in a day or so; in such cases sodium sulphate must again be given. This highly yellow "bilious" stool is characteristic of this drug.

The Distinction between Malaria-breeding and Other Mosquitoes.—The *International Medical Magazine* for January quotes from the *British Medical Journal* of unspecified date some practical points to aid in distinguishing the two forms of mosquitoes, the anopheles and the culex. While resting on a wall, the axis of the body of the anopheles is almost vertical to the wall, while the body of the culex is parallel to the wall. In the anopheles the wings show dark spots along their anterior margins, but in the culex the wings are usually plain. The proboscis in the anopheles is long and thick, and is directed toward the surface on which the insect is; in the culex it is directed parallel to that surface. Wherever the anopheles is found there is danger of malaria, while the culex is supposed to be harmless. Prophylaxis consists in the destruction of the anopheles and the protection of sufferers from malaria, since it is from biting this class of persons that the anopheles receives its store of inoculable material.

Excision of Joints for Rheumatoid Arthritis.—F. A. Southam (*Lancet*, December 9, 1899; *Medical Review of Reviews*, January) records three cases in which he excised joints with excellent results for rheumatoid arthritis. In the first case a woman, aged twenty-nine, completely bedridden previously, had both knee joints and the right ankle joint excised in 1893, with the result that she was soon able to walk several miles, and continued well up to the time of writing. In the second, a woman, aged thirty, had both ankylosed knee joints excised in 1894 with excellent results, locomotion being restored. In the third, a woman, aged thirty, the left elbow, previously ankylosed at an obtuse angle, was excised, with the result of obtaining a movable joint.

Peroxide of Hydrogen in Uterine Hæmorrhage.—Platon (*Marseille médicale*, January 1st; *British Medical Journal*, February 10th), after referring to the well-known antiseptic and disinfectant properties of peroxide of hydrogen, points out that it is also possessed of marked hæmostatic powers. It was employed for hæmostatic purposes by him in two cases of uterine hæmorrhage, and with distinct success. In the first there was profuse bleeding from an anteverted and infantile uterus in a married woman, aged twenty-four, who had suffered from genital infection soon after marriage. There was also cellulitis and parametric effusion. Under pelvic massage the swelling round the uterus disappeared but the hæmorrhagic metritis remained, and, as the patient refused operative interference, such as curettage, it was determined to give an intra-uterine injection of peroxide of hydrogen. Accordingly, on two occasions four cubic centimetres were injected after dilatation with a laminaria tent, a vaginal douche was given, and the vagina packed with antiseptic gauze. The cure was almost complete, only a little dysmenorrhœa being left. The second case was one of abundant metrorrhagia in a very stout patient near the menopause. Examination revealed no organic lesion to account for the hæmorrhage. After ergot, ergotinine, hot douches, and perchloride of iron had all been tried without success, and as the patient objected to curettage, it was resolved to inject the peroxide. This was done, and the woman, who had become markedly anæmic, is now well, and no longer suffers from uterine hæmorrhage.

Sun Baths in the Treatment of Tuberculous Joints.—Millioz (*Thèse de Lyon*, 1899; *British Medical Journal*, February 10th), unlike Finsen, of Copenhagen, who used the ultraviolet rays of the spectrum in the treatment of lupus, has employed all the rays of sunlight to act on tuberculous joints. He disapproves of the systematic fixation of the limb in which the tuberculous lesion is situated. The patient is placed on a suitable couch in the sunniest part of a garden or other open place, with the affected joint fully exposed to the rays of sunshine. To protect the head of the patient, some sort of sunshade may be improvised. If the upper limb is the seat of the disease the patient may preferably be allowed to walk about in the garden. The duration of the sun bath should be several hours a day. During the intervals the joint is covered with wool, and rather firmly bandaged. Sometimes after the first or second bath the joint becomes more painful, but this soon passes away in most cases, but if it should continue it may be necessary to intermit the treatment for several days. Rapid pigmentation of the skin by the sun's rays has been noticed to coincide with comparatively quick recovery. The joints are said to become smaller, the skin healthier-looking, the discharges, if such are present, less purulent, and the fistulæ close. Such results, however, may require months of treatment.

Syphilitic Œdema.—M. Fusier (*Gazette hebdomadaire de médecine et de chirurgie*, October 5, 1899), in a Lyons thesis, classes under the name of syphilitic œdema the serous infiltration of cellular tissue supervening in a syphilitic free from cardiac, renal, or hepatic lesion, and yielding rapidly to specific treatment. He has been able to collect several sufficiently clear examples of this condition.

It may be early or late in appearing, and takes two different clinical forms: one generalized, which develops either in a rapid fashion, when it is accompanied by extensive effusion in the serous membranes, or in a chronic manner; the other localized. Its pathogenesis, like that of œdema in general, is very complex. It seems, however, always possible to connect the generalized form with a dyscrasia, while the localized form is attributable to a lymphatic cause, preferably of mechanical origin.

Recovery in a Case of Acute Poliomyelitis.—Crocq (*Journal de neurologie*, November 20, 1899; *Medical Review of Reviews*, December, 1899) records a case of spontaneous recovery from this disease, which is very unusual. The patient was a female cook, aged forty-two years. Upon admission to the clinic she presented a marked paresis of the lower limbs, with slight diminution of sensibility, reflexes totally abolished. No fever or trouble with sphincters at time of admission. Two weeks later incontinence of both urine and fæces. Bedsores forming over sacrum and trochanters. Fever present. The general state became worse, violent vomiting, cyanosis, coma, etc., appearing to herald a fatal termination. However, a turn for the better set in at this point, all the symptoms seeming to undergo improvement. At the time of writing there was still some paresis of the limbs and the reflexes were still absent. By the method of exclusion the diagnosis of acute poliomyelitis was made. The progress of improvement was most rapid at the start. No plan of treatment is mentioned.

The Pathological-anatomical Changes in the Automatic Heart Ganglions in Congenital Syphilis.—Winogradow (*Medizinskoe Obosrenje,* September, 1899; *St. Petersburger medicinische Wochenschrift,* No. 44, 1899; *International Medical Magazine,* January) records the results of a long series of studies of the greatest interest and importance on the hearts of children. He concludes: 1. Congenital syphilis produces structural changes not only in the different organs and skeleton, but in the peripheral ganglion system of the heart. 2. These changes are manifested in the interstitial stroma of the ganglion, either as a round-cell infiltration or as an increase in connective tissue. At the same time, the blood-vessels and the ganglionar capsule are affected by the tendency to proliferation of the connective tissue. The intensity of the process depends upon the virulence of the infection and age of the child. The ganglion cells later show degenerative changes, atrophy and vacuolization. These changes are found only in the larger ganglia. The changes in the walls of the arteries in the ganglia and in the surrounding tissue often weaken them so that hæmorrhage takes place, which is often the cause of death in syphilitic children. Syphilis may often cause changes in the myocardium itself with the production of areas of infiltration of the intermuscular connective tissue with round cells and degenerative changes in the muscle itself.

Acetanilide in Suppuration of the Middle Ear.—Dr. George F. Libby (*Medical News,* October 14, 1899), in a paper read before the American Laryngological, Rhinological, and Otological Society, records three acute and ten chronic cases of suppuration of the middle ear treated with excellent and prompt results as follows: All discharge is removed by absorbent cotton. Cotton saturated in peroxide of hydrogen is then applied to the auditory canal and tympanum, and after a minute or two all *débris* and moisture are wiped out. Sometimes the peroxide is poured into the patient's ear, the head being held atilt, and then allowed to run out. The gas generated by this means is often sufficient to remove inspissated mucus, etc.

The most finely powdered acetanilide is then insufflated into the tympanum. Care should be taken to avoid too thick a coating, lest discharges should be retained—but in some obstinate cases of chronic suppuration the middle ear and inner fourth of the canal may be packed with the drug; but this should only be done when the patient can be seen daily.

The Influence of the Derivatives of Morphine upon Cough.—Fraenkel (*Münchener medicinische Wochenschrift,* 1899, No. 46, p. 1535; *Presse médicale,* December 30, 1899) arrives, as a consequence of his researches at the Pharmacological Institute of Heidelberg, at the following conclusions: 1. Morphine and codeine exercise upon the respiration the same influence as heroine; that is to say, in a small dose they diminish the number of the respiratory movements while increasing their depth. This influence, which can be rendered serviceable in the treatment of cough, is common to all the derivatives of morphine. 2. Of these derivatives, the preference in the treatment of cough should be given to those which, while acting in a special manner upon the respiration, do not exert any proper narcotic action. From this point of view codeine must be placed in the first rank and be preferred to heroine, which is not devoid of toxic properties.

An Early Sign of Tuberculosis.—Dr. Thomas F. Harrington (*Journal of Tuberculosis,* January) says: The glistening eye of the consumptive has often been commented upon, as well as the pupil state in many diseases, but there is a condition of the eyes which is quite constant in patients who make no mention of any symptom suggestive of tuberculous trouble, and in whom there are no evidences, either to physical or microscopical examination, of tuberculosis. This condition is a widely dilated state of both pupils; not a paralyzed pupil, but rather one which seems to be in a more or less constant state of dilatation, due to some irritation along the tract of the nerve fibres in the cilio-spinal region, or perhaps an irritation of the sympathetic brought about by some blood change associated with very early tuberculous infection and not yet fully recognized. The author has so frequently observed this condition in persons apparently well or exhibiting manifestations only of liver, stomach, or intestinal disturbance, in whom, nevertheless, tuberculosis has followed at a later day, that he has come to associate widely dilated pupils without other ascertainable cause as being suggestive of incipient tuberculosis.

The Delirium Tremens of Chloral.—M. G. Ballet (*Gazette hebdomadaire de médecine et de chirurgie,* December 21, 1899), who in 1893 reported to the Société médicale des hôpitaux the first clear and circumstantial case of delirium tremens from chloral, recently communicated a second case to the Société de neurologie. M. Ballet laid stress on the striking resemblance between the acute chloral delirium and delirium tremens; the same elevation of temperature, the same tremor of the limbs, lips, and tongue, the same subsultus tendinum, the same sweats, the same reveries, with hallucinations and illusions, which are, however, less realistic in chloral than in alcoholic delirium. In the first case recorded by M. Ballet the symptoms supervened upon increasing doses of chloral; in the second, upon the abrupt discontinuance of the drug. Should chloral be abruptly discontinued? In his first case M. Ballet ordered radical and complete abstinence, and the patient died; in the second, he counseled a progressive diminution of the dose and the patient recovered—from which premises M. Ballet inclines toward the latter method.

Letters to the Editor.

THE VOLUNTARY DETERMINATION OF SEX.

27 WEST ONE HUNDRED AND FIFTEENTH STREET,
NEW YORK, *February 25, 1900.*

To the Editor of the New York Medical Journal:

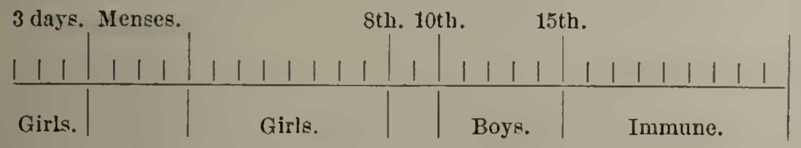
SIR: In the *New York Medical Journal* of February 24th Dr. J. Griffith Davis, in the course of an article on The Determination of Sex at Will, makes the following statements:

"Where male issue was desired, I advised continence for from eight to ten days after the cessation of the menses, and have never known that to fail in producing male children."

"Eight days is a pivotal point, so to speak, and I advise ten days' wait where male issue is desired. I have observed another fact—namely, that a guest invited within three days of an expected period will prove to be a female."

"The majority of women are really immune from danger of conception from fifteen days after the cessation of the menses till three days before an expected period."

These statements may be graphically represented thus:



Here we have ten to eleven days for girls, and five days for boys. We also know that the period during which impregnation is most likely to occur is just preceding and just following menstruation. This period is here given entirely to the girls. We should therefore expect, according to this theory, that there would be more girls than boys born. As a matter of fact, the reverse is the case. More boys are born than girls, in the proportion of 104–106 to 100. C. Herrman, M. D.

Kingston, N. Y., *February 26, 1900.*

To the Editor of the New York Medical Journal:

Sir: Like the proverbial "bad penny" or the no less familiar cat that "came back," the question of control of the sex of forthcoming offspring is one that perennially crops out in the columns of our medical press. Nor is this at all strange regarding a thing of such paramount interest. In your last issue Dr. Davis well says that children should not come into the family "haphazard, but . . . under the most favorable conditions of both parents"; now, if, in addition to the determination at will of the time of the arrival of these "guests," there is a like possibility of controlling the sex, surely we have attained the ideal physical exhibition of the procreative function, thus raised infinitely above the brute plane.

But I must confess my surprise at Dr. Davis's intimation of her attention being first drawn to the theory she notes by personal knowledge of the experiments of a dog-fancier of her acquaintance; and still greater surprise at the editorial admission of the novelty of her views. In 1869 Dr. Napheys wrote that, under date of 1867, he had in his possession the certificate of a Swiss stock-grower of the Canton de Vaud, son of the president of the Swiss Agricultural Society, who therein states that in twenty-nine successive cases, with heifers, he had proved the truth of this law, which, at a yet previous date, M. Thury, professor in the academy at Geneva, had formulated for stock-raisers—viz.: "If you wish to produce females, give the male at the first signs of heat; if you wish males, give him at the end of the heat." Here we note a decided advance upon previous unscientific and fanciful speculations.

In addition, let us examine what data we have today worthy of consideration owing to the painstaking character of the investigations responsible for the same. Dr. Davenport's theory of cross heredity, recently noted in your journal, is clearly entitled to a place, and I think it also, with Dr. Davis's, admits the commendable "condition of uncertainty" which you refer to; for, says Dr. Davenport, when the parents are of equally robust health, the result may be either a boy or girl; or, we may say, in the case of twins, boy and girl. Now, keeping in mind the plain analogy between Dr. Davenport's and Dr. Schenk's theories, to which the former refers, where do we find ourselves in this matter, viewing together all those ideas which have been noted? Right here it seems to me Thury's law is one of direct heredity; the Keefe-Davenport-Schenk theory, one of cross heredity. To complete our information on these bases, it now but remains for us to have a consensus of results in a sufficiently large number of experimental cases in which these facts have been carefully observed: *a, the period in the menstrual cycle when the critical coitus occurred, b, the parent who was in manifestly the superior health* (it is known that superior sexual vigor or, rather, the ascendency of sexual desire, is not necessarily coincident with elevation of bodily health, but, on the other hand, often the contrary obtains), *c, the sex of the resultant child.*

Conclusions.—If female progeny generally result from "guarded coitus" near the menstrual crisis, despite the physical condition of either parent, then Thury and direct heredity have triumphed; if, in the presence of manifest superiority of the parent, the sex of the child is the opposite to that of the vigorous parent, independent of the time of coitus, we must pin our faith to cross heredity and Keefe, *et al.*

George Parker Holden, M. D.

⁂ Dr. Davis did not intimate that her dog-fancier was the originator of the theory on which she had relied, and we did not make any "admission" to that effect.

TRANSPOSITION OF ORGANS.

Cortlandt, N. Y., *February 26, 1900.*

To the Editor of the New York Medical Journal:

Sir: The following case may be of interest to your readers: On February 5th, Mr. W., aged twenty-three years, came to my office to be examined for life insurance. I found the heart with its base situated about in the normal position, but with its apex inclined toward the right side, the apex-beat being at about the same point on the right side as we usually find it on the left. Liver dullness was absent on the right side and its place was occupied by normal lung tissue. In the nipple line the lung extended down to about the costal border. The liver dullness was found on the left of the median line and slightly lower than the usual position. The right testis hung lower than the left.

This seems to be a case of complete transposition of organs. The man appears in perfect health.

S. J. Somberger, M. D.

A PECULIAR CONDITION OF THE HEART.

250 Fifty-eighth Street, Brooklyn, New York,
February 20, 1900.

To the Editor of the New York Medical Journal:

Sir: I am reporting this case to get help in a difficult case.

On May 25, 1899, Mr. A. O., aged forty-five, a stone mason residing in South Brooklyn, called upon me and gave the following history:

When he was about fourteen years old, one day, while doing some work which required a stooping posture, he had suddenly found everything turning black before his eyes and experienced a strange feeling in his chest, his heart beating fast and irregularly. He visited a physician at that time and was told that he had nothing wrong with his heart. From that period on he noticed that at times his heart's action was irregular, especially if he ran for a train or took any violent exercise; it would beat rapidly for a time and then slow down, the action growing slower and slower until it would get away down to 30.

Up to his first visit to me he had never suffered from any illness; in fact, had been exceptionally well so far as real sickness went, only he had that sleepy, half-dead feeling. After his day's work was done he felt as if nothing would suit him so well as to go immediately to bed and to sleep. He told me that his mother had been afflicted in a similar manner. I now examined him and, taking the pulse at the wrist, I found that it was only 54. Thinking that possibly every beat of the heart was not felt at the wrist, I put my stethoscope to his heart with the same result. I found the valvular sounds practically normal, the heart not enlarged, and the force good.

I treated him at different times until November, when he was attacked with a severe chill followed by fever, which resembled in every way an ordinary malarial paroxysm and responded promptly to antimalarial treatment.

From this time his heart began to beat faster and faster until the pulse reached 120, without fever or other disturbance, except the unpleasant sensation of having his heart running away with him. This condition of rapidity continued about two months, and now the rate has been gradually coming down until it is about 60 at the present time. In addition, the action is irregular and intermittent, skipping every third or fourth beat.

When he first felt his pulse beginning to go faster he felt like a changed man, felt as if new life was coming into him, that he was growing younger, and that he would like to romp and skip like a child again, so pleasant a sensation was it to be rid of that half-alive feeling.

Now, given a man with no general symptoms, no noticeable heart lesion, no sign of aneurysm or other abnormity, with a heart beat ranging from 30 to 120, which medication does not seem to control: what is it which is causing the disturbance? If any one with a similar case can enlighten me as to the cause of the trouble he will do me a great favor and perhaps others who may come across like cases in the future.

J. P. McQuillin, M. D.

THE SKIN MANIFESTATIONS OF INFLUENZA.

Littleton, N. C., *February 20, 1900.*

To the Editor of the New York Medical Journal:

Sir: In your issue of February 17th there is an article by Dr. J. Edward Herman on the skin manifestations of influenza observed during the present epidemic in Brooklyn. This article calls to mind very vividly a similar case occurring in my practice last winter. On the afternoon of January 20th I was called to see R. J., aged nineteen, who had had a severe chill on the evening of the 19th. His temperature was 103.5° F. There was a moderate inflammation of the pharynx and tonsils, with a rash simulating that of measles. There were no cases of eruptive disease in the neighborhood, so that he had not been exposed. As he had already had measles and parotiditis, these were not considered to any great extent. The history and subsequent behavior of the attack did not indicate the presence of either of them. I was somewhat puzzled to account for the rash, as I had not observed similar cases before, and in reporting the case in the *Medical Summary* I concluded that it was a case of influenza with unusual nervous symptoms. There was no desquamation and the case ended in recovery in about a week's time.

B. Ray Browning, M. D.

THE TUBERCULOSIS CONGRESS.

February 16, 1900.

To the Editor of the New York Medical Journal:

Sir: We, the undersigned, beg to state that our names and influence have been withdrawn from the Tuberculosis Congress to be held in this city February 21st next under the auspices of the Medico-legal Society.

Our reasons for declining to participate in said congress are due to recent developments relating thereto which we can not countenance.

Our attention has been directed to a publication in the New York *World* of January 21, 1900, also to the issue of a circular of a somewhat similar character by a prospective delegate to said congress from Chicago.

We beg, therefore, that you will not publish our names in connection with this congress.

J. Blake White,
S. A. Knopf,
Egbert Le Fevre,
Charles E. Quimby.

*_** We at first construed the foregoing communication simply as a request. We learn now, after the congress has been held, that the gentlemen who signed it wished us to publish it.

BOOKS, ETC., RECEIVED.

International Clinics: A Quarterly of Clinical Lectures on Medicine, Neurology, Surgery, Gynæcology, Obstetrics, Ophthalmology, Laryngology, Pharyngology, Rhinology, Otology, and Dermatology, and Specially Prepared Articles on Treatment and Drugs. By Professors and Lecturers in the Leading Medical Colleges of the United States, Germany, Austria, France, Great Britain, and Canada. Edited by Judson Daland, M. D. (Univ. of Penna.), Philadelphia, Instructor in Clinical Medicine in the University of Pennsylvania, etc. Volume IV. Ninth Series. 1900. Philadelphia: J. B. Lippincott Company, 1900. Pp. ix–337.

Outlines of the Comparative Physiology and Morphology of Animals. By Joseph Le Conte. New York: D. Appleton and Company, 1900. Pp. xviii–499. [Price, $2.]

The Empire of the South. An Exposition of the Present Resources and Development of the South. By Frank Presbery. Published by the Southern Railway Company. Pp. 181.

Proceedings of the American Medico-Psychological Association at the Fifty-fifth Annual Meeting, held in New York, May 23 to 26, 1899.

Thirty-fourth Annual Report of the St. Francis Hospital, New York, for the Year ending December 31, 1899.

First and Second Annual Reports of the McDonough Memorial Hospital, in the City of New York.

Third Annual Report of the Loomis Sanitarium for Consumptives, Liberty, New York. 1898–1899.

Reports of the Trustees and Superintendent of the Butler Hospital for the Insane, Providence, Rhode Island. Fifty-sixth Annual Meeting, January 24, 1900.

Alcoholic Gastritis. By J. A. Hofheimer, M. D. [Reprinted from the *Medical Mirror.*]

The Pathogenesis of Functional Nervous Diseases and their Prophylactic Indication. By John Punton, M. D., of Kansas City, Missouri. [Reprinted from the *Medical Record.*]

A Preliminary Investigation of the Theory of the Inoculation of Malarial Fever through the Agency of Mosquitoes. By Albert Woldert, M. D., of Philadelphia. [Reprinted from the *Journal of the American Medical Association.*]

The X Rays as a Diagnostic Agent in Pulmonary Diseases. By J. Edward Stubbert, M. D., of Liberty, New York. [Reprinted from the Special X-ray Number of the *Philadelphia Medical Journal.*]

Albuminuria and its Relation to Diseases of the Eye. By Alexander W. Stirling, M. D., of Atlanta. [Reprinted from the *Ophthalmic Record.*]

Sanatoria for Consumptives. By Beverley Robinson, M. D. [Reprinted from the *St. Louis Courier of Medicine.*]

Sterility and Pelvic Deformity. By Joseph Brown Cooke, M. D. [Reprinted from the *Medical and Surgical Monitor.*]

Bad-Nauheim, seine Kurmittel, Indicationen und Erfolge. Verfasst vom Verein der Aerzte zu Bad-Nauheim. 1. Auflage. 1899. Bad-Nauheim: Heinrich Burk. Pp. 100.

A Case of Blastomycetic Dermatitis—Clinically and Histologically, and Epithelioma. By W. E. Coates, M. D., of Chicago. [Reprinted from *Medicine.*]

Miscellany.

The Thirteenth International Medical Congress.—The secretary-general gives notice that every member of the congress has the absolute right of joining as many sections as he pleases, and of taking part in the proceedings of them all, without any additional fee, but that it will be impossible to furnish each member with all the twenty-four volumes of *Transactions* of the sections gratuitously. Every member will, however, be furnished with a volume giving a general account of all the proceedings, with another volume containing the proceedings of the general meetings in detail, and with a third volume giving the proceedings of his own section. If he joins more than one section, the one in which he joins first will be the one whose *Transactions* he will receive. Members who wish to obtain more of the volumes should communicate with M. Masson, the publisher, No. 120 boulevard St.-Germain, as to the conditions to be settled upon ultimately. The more volumes a member orders, the less he will have to pay for each one. The general meetings will be held on the 2d, 5th, and 9th of August, in the great amphitheatre of the Sorbonne. The sections will meet in various quarters of that institution, the Collège de France, the École pratique, the Faculté de médecine, the École de pharmacie, the St.-Louis, the Hôpital Necker, the Hôtel-Dieu, the Faculté de droit, the Val-de-Grâce, and in the great amphitheatre of the avenue Victoria.

The Unauthorized Publication of Medical Writings.—Over the pseudonym of Franciscum [an accusative?], somebody has written from New York a letter to the editor of the *Journal of the American Medical Association* which was published in that journal for February 17th. It seems to have been called forth by an editorial in which it was stated that an "enterprising drug firm" had made "120,000 reprints of a paper by a well-known author and sent them broadcast to the profession." The writer seems to us to deal in a catholic spirit with some matters concerning which certain censorious persons have sought to inculcate views savoring more of cant than of ethics. We therefore reproduce here the greater part of the letter, as follows:

"Your editorial states that 'the enterprising drug firm' was interested in the sale of the drug written about. The firm's motive was, therefore, just what the author's would have been had he written his paper for sale to the medical journal. Is there anything wrong in this? Possibly the firm in question had received a grant from the government permitting said firm to exclude other drug houses from manufacturing the same article for seventeen years. If so, was there anything wrong in that? The author might have copyrighted his paper and thus prevented any other writer from copying it for thirty years. Where does the difference come in? Is there any difference in principle between the author copyrighting his paper and the inventor patenting his invention? Why should authors be rewarded by governmental grants and inventors go unrewarded?

"The position of the medical profession on this subject of medical monopolies seems to me to be very inconsistent. Monopolies of knowledge should never be indorsed by physicians, and yet members of the medical profession extensively prescribe medicinal preparations whose method of manufacture is entirely unknown to science. While guilty of this direct violation of the code of ethics, they condemn the patenting of medicinal inventions, forgetting that *a thing patented is a thing divulged.* The patent law requires that the invention shall be 'new and useful,' and that 'before any inventor or discoverer shall receive a patent for his invention or discovery, he shall make application therefor, in writing, to the Commissioner of Patents, and shall file in the Patent Office a written description of the same, and of the manner and process of making, constructing, compounding, and using it, in such full, clear, concise, and exact terms, as to enable any person skilled in the art or science to which it appertains, or with which it is most nearly connected, to make, construct, compound, and use the same.' What is there any more ethical than that? If physicians should insist that every medicinal agent or preparation must come up to that standard of requirement, and refuse to prescribe those which do not, what a therapeutical and pharmaceutical millennium we should have!

"I admit that there has been a great deal of error sown broadcast by commercialism. In this case, however, I take it that truth was sown, not error. It is the sowing of the truth in regard to every agent of the materia medica that we want, and the patent law, aided by the enterprising drug firms cooperating with the profession, can do much in diffusing a correct knowledge of drugs to the medical profession at large. But this enterprise should be controlled and guided by the profession itself, and not left to work evil as well as good, as it is now.

"Certain publishing houses have been known to sow error in regard to their books. They have been known to publish medical journals for the purpose of advertising their books in the advertising columns and in the book review columns. They have reprinted what medical men said about their books, and have sent these reprints broadcast to the medical profession. The books have been copyrighted, and therefore monopolized. Authors have joined with publishers in bringing these monopolized works to the attention of the profession throughout the world. So long as truth is told about the books, and not error, it is considered perfectly ethical for physicians and publishers to cooperate in conducting the commercial business of writing and publishing books and profiting in their sale by advertisements in medical journals, reprints, circulars, etc. Why should publishers have such privileges extended to them and 'enterprising drug firms' be denied them?

"What we really need very much is a national or international therapeutical society to take up this question of materia medica and place it under professional censorship and control. 'Enterprising drug firms' would then be placed in a position where they could cooperate with the profession, and the profession could cooperate with them, without having the motives of either misunderstood. A great force is here going to waste which might be utilized with much benefit by the medical profession. The beneficent results which would accrue to the profession, to the medical press, to science, to humanity, if the great force of honest commercialism could be employed in this way, can readily be imagined. Commercialism has been exceedingly useful to the profession in the publication of medical books and medical journals. Can this force also not be of equal service to the medical profession if placed under proper control and in the department of drug and chemical manufacture?"

We do not wish to be understood as criticising the editorial that gave rise to "Franciscum's" letter; indeed, we quite agree to what the editor of the *Journal of the American Medical Association* adds by way of comment. It is as follows:

"Our correspondent apparently ignores the fact that a person contributing scientific material may sometimes object to having his name used for a purely mercenary purpose, by outsiders who place him in a position of a paid 'hack writer' for a commercial firm. What we claim is that an author ought to have a right to choose what use shall be made of his production, and the copyrighting of medical journals is done to secure this."

The Samuel D. Gross Prize.—The trustees of the Philadelphia Academy of Surgery, Dr. W. W. Keen, Dr. J. Ewing Mears, and Dr. J. Chalmers Da Costa, announce that, as no essay deemed worthy of the prize had been received on January 1, 1900, the prize will be awarded on October 1, 1901. The prize amounts to $1,000.

The conditions annexed by the testator are that the prize "shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in surgical pathology or surgical practice, founded upon original investigations, the candidates for the prize to be American citizens."

It is expressly stipulated that the competitor who receives the prize shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery, and that on the title-page it shall be stated that to the essay was awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery.

The essays, which must be written by a single author in the English language, should be sent to the Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 219 South Thirteenth Street, Philadelphia, on or before October 1, 1901.

Each essay must be distinguished by a motto and accompanied by a sealed envelope bearing the same motto and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The committee will return the unsuccessful essays if claimed by their respective writers, or their agents, within one year. The committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

Tuberculous Myelitis.—At a meeting of the New York Neurological Society, held on February 6th, Dr. Joseph Collins read a paper entitled Myelitis, with Special Reference to the Tuberculous Variety. He stated that acute myelitis was relatively uncommon. The case reported was that of a woman, twenty years of age, who had been admitted into the City Hospital in 1898. Her illness had begun about three months before its fatal termination, and the first thing noticed was a redness with painful swelling of the second metacarpo-phalangeal articulation. The question arose whether these symptoms were really due to rheumatism or to vasomotor changes. A few days later the right elbow became painful and swollen, and in a few days more the other elbow, one ankle, and one knee were successively involved. According to the history, she had been treated in Bellevue Hospital for rheumatism. On reaching the City Hospital she had a number of large bedsores of long standing. She was pregnant at the time, and was soon after delivered of a child, which was now living. It was noted shortly afterward that the limbs were absolutely fixed and that there was urinary incontinence, but there were no sensory disturbances. The cranial nerves were not affected. About two weeks before her death there were rigors and elevations of temperature, indicative of septicæmia. The autopsy was made twelve hours after death. The spinal canal contained pus up to the second lumbar vertebra, and from this point upward there was a layer of greenish exudate which reached up to the brain and forward to the optic chiasm. The spinal cord was very much softened between the sixth and ninth segments. The lungs were free from tuberculosis. Microscopical examination of the spinal cord showed the changes to be most marked in the eighth and ninth segments, and least marked in the cervical portion. From one end of the cord to the other the dura was the seat of a productive inflammation, and this was true to a lesser extent of the pia. The sections made from the eighth dorsal segments showed the central area of necrotic tissue limited in front by the commissure. One of the sections from this segment showed a few tubercle bacilli. No bacilli were found in the meningeal exudate. The changes in the ganglion cells were those of advanced diffused chromatolysis. In many of the cells there was a complete disappearance of the achromatic granules. The cells most affected at these levels were those of the internal groups of the anterior horns. Sections from the first lumbar segment showed the thickening of the meninges and the inflammatory exudate, and also congestion of the blood-vessels of the anterior horns. The changes in the chromatic granules and the achromatic substance were apparently secondary to the extensive changes in the blood-vessels, and not dependent upon rheumatism or tuberculosis. Sections from the various lumbar segments, stained by Nissl's method, showed variable disintegration and degeneration of the cells of the anterior horns. The processes of the cells showed a degeneration similar to that of the bodies. The so-called dislocation of the nucleus of the cell did not seem to Dr. Collins to indicate to any extent the pathological state to which the cell had been reduced. The changes in the cells of the cervical cord were similar to those in the lumbar region, though less pronounced. Many of the cells were large and stained deeply, while the achromatic substance in the cells was in good condition. The enormous thickening of the pia at this level was well shown in sections stained with hæmatoxylin. The cells of the anterior horns showed slight disintegration of the chromatic substance only. As the dorsal region was approached, the cells of the anterior horns showed more marked degeneration changes. Here the remarkable feature was the relative preservation of the cells of Clarke's column. In conclusion, the speaker said he did not believe that the pain in the extremities had been the result of rheumatism, but of tuberculosis.

Pictures in Medical Literature.—Dr. George Thomas Palmer, of Chicago, has sent us an article entitled A Glaring Fault in Medical Literature: A Protest. With some slight verbal changes, Dr. Palmer's complaint is as follows:

"At the opening of the medical school the learned lecturer talks of the 'wonderful strides of medicine'; the president's address at our society meetings is bursting with the 'glorious achievements of surgery'; the lay press is gorged with 'startling discoveries in modern medicine,' and even the medical student prides himself that he was not raised in the 'old fogy' days of his preceptor.

"'No science or art has shown such advancement,' cries one; and we wonder that all infants did not die within a week of their birth in those benighted days when anæsthetics, antiseptics, alkaloids, electro-therapies, hydrotherapies, serum therapies, and all such things, to which we now pin our faith, lay undiscovered and unknown.

"I have spent many hours with old volumes, reading with a smile the vagaries once so seriously considered, and laughing outright when some worthy 'authority' discoursed upon his mystical therapy. And then, after amusing myself with this pastime, I would turn with pride to the great volumes of my own day, crammed with matter of scientific import and simple and unquestioned truth.

"So we have progressed and our literature has progressed. We have left the day of medical mysticism and have become realists; we have discarded rank empiricism and have adopted logical practice, and we rate ourselves as pretty wise fellows. But once more we turn to the medical books of years ago and it dawns upon us that 'all good things are not new'; turning to our modern volumes, we learn that 'all new things are not good.' Turn with me to Ramsbotham's *Process of Parturition* (Lea and Blanchard, Philadelphia, 1845), a book of fifty-five years ago, and I want you to tell me what is the most striking feature in it. The text is quaint and so antiquated that the modern physician would find difficulty in fathoming the author's ideas unless aided by a medical dictionary; it is of no value as a text-book to-day and is only treasured by the bookworm and antiquarian; and, yet, the illustrations in this old book would serve well as a model for the medical illustrator of to-day. The drawings are clear and accurate and well produced; a fœtus looks like a fœtus; the accoucheur's hand looks like a hand; the pelvis looks like a pelvis—a state of affairs quite rare in this day of what we choose to call 'scientific advancement.' The text of 1845 is worthless to-day; the illustrations of 1845 would greatly improve many of our text-books of to-day.

"I was recently compelled to plead guilty to the charge, from a publisher of a mechanical trade journal, that medicine was the most miserably illustrated subject of all the arts or sciences of the world. He convinced me of the fact by showing me plates from all manner of books and periodicals. Can we believe that this is true?

"I have taken a text-book from my shelf, the first one my hand comes upon, a pretentious *American System of Practical Medicine*, published very recently. I take it, not as an example of the worst, but as an average of the best. It is written by men high in the profession, published by liberal and famous publishers, and should be at least a fair average. Allowing the book to fall open, I find before me a colored plate entitled Addison's Disease, showing bronzing of the skin and white areas of atrophy (personal observation). The man who 'personally observed' this case had a sight the gods would marvel at; he deserves our congratulations on such rare good fortune. Yet it seems to me that he should not have neglected in his text to call attention to the wonderful characteristics of the patient, aside from the comparatively trivial condition of Addison's disease. I trust he will pardon my giving to the profession the details of this wonderful case. The scrotum is shown to hang from the anus, while the penis is attached well back on the perinæum, and both organs are covered with a bright red, discrete, papular eruption which extends up into the inguinal region and stands out on top of the hair over the pubes. With wonderful regularity this eruption follows the patient's outline, is particularly marked in the axilla and between the fingers, and upon the face has followed such fanciful tracery of curves, triangles, 'dove wings,' Cupid bows,' etc., as to make one think at first that the man had been tattooed. The eruption is also noticeable on the hair of his head and in his imperial. This may all seem strange enough, but 'the worst is yet to come.' This eruption demonstrates its contagiousness not only by covering the body of the patient, but by having spread on to the otherwise clear background. The ears are peculiar, yet so simple as to look more like clam shells than the unnecessarily complicated human organ. This is a hint which Nature should adopt. The head is markedly hydrocephalic, the nose very broad and very flat, obviously void of nasal bones or cartilage, while an area of absolute baldness is seen following a clear-cut line over the vault from ear to ear, doubtless the result of alopecia areata.

"But enough! The plate is so miserably drawn, so poorly colored, so generally absurd, so carelessly printed, that it has made a laughing stock of a piece of medical writing otherwise strong and masterly. The remark of 'personal observation' seems like a mere joke which is out of place in an earnest medical text. There is no proportion, nothing shown, and an obvious cheapness is indicated by the fact that a human figure has been attempted with but two colors, red specks and yellow ochre. It is worse than useless, giving the entire volume a cheap, inaccurate, and shoddy appearance.

"In the same volume I find a photograph of melanotic sarcoma of the liver which could much more clearly live up to the title of 'a life-sized portrait of a dried prune.' There is no picture there, merely a smirch of ink. And so I might go on citing these instances of absurd illustrations for hours, but it seems hardly necessary. We have all had our ideas of art shocked, our sense of humor touched, by the crude cartoons which fill our literature. Thank Fortune, in the photograph we have some relief when the subject is amply large; but the photograph is not a success when minute detail is to be brought out. We must have good drawings; the question is, where to get them.

"Fortunately, there are a few rare exceptions to the miserable attempts which end so dismally. Once in a while a good man comes to the front and does work which is a credit to the subject, and such a one I have recently seen. Max Brodel's drawings in Dr. Kelly's *Operative Gynæcology* will live longer than Dr. Kelly's able book; and I feel safe in saying that Brodel has given as much to medicine as any single writer or investigator. He has shown us that crudeness and inaccuracy are not essential to medical drawings, and that is a much-needed lesson. And we could find other hard-working, capable medical and surgical artists, but many would be called and few would be chosen.

"And now, what is to be done to make this important feature of our literature creditable? What can we do to make our medical journals equal to the average periodical on market gardening, horse raising, or pork packing? Like all reforms, the initiative must be taken by the people. The physician must demand a change from the publisher, the publisher must decline to accept crude work from the contributor, and then we must begin the education of some artist-physicians. Neither a good artist with no medical knowledge nor a good physician with no artistic ability can succeed as a medical and surgical artist; so learning in both lines must be acquired and combined to improve our literature. So far we have never demanded good work; naturally we have not got it. We do not get much more in this world than we demand or expect."

The Importance of the Disinfection of the Urine of Typhoid-fever Patients.—The city board of health has issued the following circular:

It is the earnest desire of the department of health to direct the attention of physicians to the great importance of the disinfection of the urine of individuals suffering from typhoid fever. It has been known for a long time that the *Bacillus typhosus* is occasionally to be found in the urine in this disease. Recent observations, however, have shown that the bacilli are present in the urine in a large percentage of all cases. In fact, it is probable that in fifty per cent. of the cases the typhoid bacilli are present in the urine at some stage of the disease, and at some times in almost incredible numbers, estimated at many millions to the cubic centimetre. In the majority of cases the bacilli appear in the urine rather late in the course of the disease and soon disappear, but in probably ten per cent. they persist throughout convalescence, and exceptionally for months and even years afterward.

The presence of typhoid bacilli in the urine is frequently not attended by any change in its appearance or composition, nor do they necessarily produce any appreciable lesions in the kidneys or any portion of the urinary tract. The urine may be perfectly clear and limpid, absolutely normal in appearance, and yet contain large numbers of typhoid bacilli. In other instances there are evidences in the urine of changes in the kidney or of inflammation in the pelvis of the kidney or bladder. The urine under certain conditions appears to constitute a good culture medium for the bacilli, and they may multiply in it after it is passed. From its fluid nature it is readily splashed about and may thus infect the hands and persons of the patients and attendants, and more especially the bedding, bedclothing, etc., so that in cases of typhoid fever the greatest care should be taken to disinfect it as well as the stools. In fact, the former often contains the bacilli in larger numbers than the latter, and may be a greater source of danger, as the bacilli are not only present in larger numbers, but persist for a longer time after recovery.

Epidemics of typhoid fever can usually be traced to contamination of the water or food supply, and any single case may prove the starting point or focus of an epidemic. The recent observations in regard to the infectious character of the urine readily explain the occurrence of some of the isolated cases and outbreaks which it is sometimes difficult to trace to their source.

The urine from cases of typhoid fever may be readily disinfected by almost any of the various chemical disinfectants, as it is fluid and there are no solid masses to be penetrated, as in the case of fæces. The disinfection of the urine should be continued until the restoration of health is complete. The best disinfectant for this purpose is carbolic acid; it is effectual, cheap, and easily obtained. Urine to which has been added one third of its volume of a one-to-twenty solution of carbolic acid is thoroughly disinfected in a few minutes. The best method is to keep the urinal or bedpan partly filled with the disinfecting solution at all times. In this way any germs present in the urine are almost instantly destroyed.

It is believed that careful disinfection of the urine and fæces in typhoid fever would eventually produce a sensible diminution in the number of cases of this disease occurring in New York city, and a corresponding reduction in the death-rate from it.

A New Scheme for Clinical Instruction.—Dr. A. H. Wentworth (*Boston Medical and Surgical Journal*, February 15th) has devised a new scheme for the clinical instruction of students, the object being to so utilize material as to give the greatest possible individual clinical instruction to students. For this purpose the body of students is to be divided into small sections, each of which starts on a different subject with a clinical teacher at one or other of the different institutions and goes on in succession day after day, until at the end of a certain period each section has completed the prescribed course without overcrowding, and without undue fatigue to the patients examined. The scheme is worked out for Boston and takes in the Boston City Hospital, the Massachusetts General Hospital, and the Children's Hospital, but it is obviously applicable with the necessary modifications, to any teaching centre. Dr. Wentworth concludes his paper with the following suggestions:

"1. The section teaching should be under the control of the professor. This would not require a great expenditure of time if the clerical details were performed for him by an assistant or by a secretary.

"2. A list of the diseases which the professor wished to have shown to the students could be prepared, and the instructors could arrange to show these diseases during the year.

"3. The instructors could keep a record of the diseases which had been shown and the sections that had seen them. These reports could be sent to the professor every week and would enable him to arrange the teaching so that all of the students could see the same diseases in the course of the year.

"4. An effort should be made to show the students different stages and complications of the same disease.

"5. The professor could arrange a series of lectures to supplement the section teaching. These lectures would be delivered before the entire class in the amphitheatre of the hospital and the students would be expected to take careful notes for future study. In a large hospital it would often be possible to find a number of cases in different stages of a given disease. These cases would serve as illustrations and would help to impress a distinct picture of the disease upon the students' minds.

"6. Patients with chronic diseases often remain in a hospital for several weeks. If a given case were shown to each section in turn it would be possible for the entire class to see the same patient in the course of one rotation.

"7. I believe that the students should be required to pass both a practical and a written examination in auscultation and percussion at the end of the second year in order to show that they are competent to begin section work."

The American Academy of Medicine.—The twenty-fifth annual meeting will be held in Atlantic City on Saturday, June 2d, and Monday, June 4th. The preliminary programme gives the following titles: The president's address, by Dr. G. Hudson Makuen, of Philadelphia, entitled Contributions to the Annual Symposium—The Medical Aspects of the Home; What are the Essential Conditions for a Habitation to Develop and Maintain a Healthful Family Existence? by Dr. Rosa Engelmann, of Chicago; The Influence of Early Training of Manly and Womanly Qualities to Avoid Degeneracy, by Dr. J. Cheston Morris, of Philadelphia; Artificial Lighting of the Home, by Mr. S. D. Risley, of Philadelphia; The Influence of Medical Supervision of Children in their Homes, by Dr. J. Madison Taylor, of Philadelphia; The Physicians' Influence *in re* Vacation Schools, by Dr. Helen C. Putnam, of Providence; Defectives and Delinquents Inside and Outside the Family Circle, by Dr. James W. Walk, of Philadelphia; Is Cooperation between Colleges of Arts and Sciences and Schools of Medicine Desirable? by Dr. A. L. Benedict, of Buffalo; Physiological Psychology as a Necessary Element in Medicine, by Dr. W. J. Herdman, of Ann Arbor; Medical Education of To-day, by Dr. Bayard Holmes, of Chicago; Neglected Clinical Opportunities in American Medical Centres, by Dr. S. A. Knopf, of New York; The Physician *vs.* Medical Proprietors and Medical Patentees, by Dr. A. Ravogli, of Cincinnati, and Medicine in the Philippines, by Dr. Harry Park Ritchie, of St. Paul, on medical duty with the United States Volunteers in Luzon.

Why Bile is Bitter.—Sir Thomas Lauder Brunton (*Clinical Journal*, January 10th), in an address on Bile, Biliousness, and Gallstones, recently delivered before the Northwest London Clinical Society, says:

"Some years ago an investigation was made into the physiological action of certain substances that are formed by splitting up albuminous articles of food during the process of digestion, and it was found that the foods that we eat are capable of yielding poisons that will destroy us if they pass directly into the circulation. But, as a rule, they can not do this; they have to pass through the liver on their way, and there some of them are caught, and passed back by the liver into the intestine with the bile, while others are actually destroyed. This is true not only of the poisons formed from food, but of actual poisons formed in other ways, such as the Indian poison, curara, and others of like kind. Now, we usually say 'as bitter as gall,' and we are accustomed to associate bitterness with bile. But fresh bile is not bitter. I was once making some experiments on myself regarding the action of digitalin, and I took a big dose, so big that I nearly, but not quite, killed myself. It made me very ill, however, and I vomited violently. I brought up something which appeared to be undoubtedly bile, because it was like yolk of egg, and it could not be anything else, but it lacked the characteristic bitterness. Now this bile was probably freshly formed In the ordinary course of things it would not have been vomited, but under the influence of the poison it was brought up. Some time afterward I had a letter from a doctor who had under his care a patient with a permanent biliary fistula, and he discovered in his patient also that fresh bile is not bitter. Whence comes the bitterness, then, that is associated with the name of gall? In all probability it comes from the absorption from the intestine of bitter substances formed during digestion. These are absorbed by the portal system, carried to the liver, and stopped there on their way into the general circulation, so that, instead of being allowed to proceed on to the heart, to the brain, and to the various organs of the body, these bitter substances are turned back and are excreted again in the bile. You can see, then, that if bitter substances are constantly being formed in the intestine by the process of digestion, and constantly being absorbed and turned back in the bile, the bile itself will become very bitter after a certain length of time, varying with the amount of these bitter substances. And this, I believe, is the cause of the bitterness of bile and what we call biliousness. I believe that after a while the power of the liver to arrest these substances is exceeded, and that it can not pass them all back. Consequently, some go on and give rise to symptoms of poisoning."

Small-pox in Illinois.—The Illinois State Board of Health has issued the following circular:

To the Local Health Authorities of Illinois:

Small-pox, of the existence of which in Illinois this board has issued repeated warning, continues to increase in frequency throughout the State, and at the present time prevails to a somewhat alarming extent. It is believed that during the past three months over one thousand cases of this disease have occurred in the State, causing much sickness and suffering, some deaths, interruption to travel, interference with business, the closing of schools, churches, and other places of assemblage, and an inestimable financial loss. The disease prevalent is happily of a modified type, causing but few fatalities. It may, however, assume the most virulent form within a month, and through the influence of the wide dissemination of the germs of small-pox create an epidemic involving the loss of thousands of lives. There is no excuse for the spread of small-pox. It is a preventable disease, and one easily subject to control. Vaccination properly performed and duly repeated is a safe and positive protection against small-pox. This disease will not and can not spread in a well-vaccinated community. Vaccinal protection lasts often for years, but revaccination, whenever small-pox is prevalent in a community, will continue this protection indefinitely. No danger can result from vaccination properly performed under aseptic conditions with pure virus. This board advises the exclusive use of glycerinated lymph. All available statistics on the subject prove beyond controversy or doubt the efficacy of proper vaccination. Through its beneficent influence, small-pox has been almost entirely eradicated in countries in which vaccination is compulsory. In localities in which vaccination is generally observed, the disease, although appearing at intervals, rarely gains headway. A municipality infected with small-pox can limit the spread of the disease to the patients affected and to persons already exposed. The contagion will necessarily become extinct if the remainder of the inhabitants are vaccinated. This fact was proved recently in a city of Illinois in which, during the past three months, there have been over six hundred cases of small-pox. The disease continued to increase until a system of vaccination was instituted by the State Board of Health. Within a short time after the vaccination was well under way there was a marked decline in the epidemic, which continued until the disease almost entirely died out for want of unvaccinated individuals on whom to prey. There is no small-pox in the island of Puerto Rico. In January, 1899, there were several thousand cases. As a result of an order of the governor-general promulgated on January 21, 1899, seven hundred and ninety thousand persons have since been vaccinated, and the disease has been entirely stamped out. Physicians, nurses, and attendants in small-pox hospitals rarely contract the disease. Their sole protection is vaccination. The Illinois State Board of Health desires to secure this protection for the commonwealth now, before the disease becomes epidemic in every county, and therefore enjoins upon you the adoption of measures best calculated to this end. In addition to warning those over whom you exercise jurisdiction, of the danger existing, and pointing out the measures whereby the occurrence of the disease may be obviated, every effort should be made to induce owners or managers of factories and business establishments and all employers of labor to demand of those in their service, as a condition of further employment, an evidence of proper and successful vaccination. Especially should efforts be made to procure the vaccination of children, who are particularly susceptible to the contagion of small-pox. This is necessary, not only for the protection of the lives and health of your people, but also of your business interests. One case of small-pox may cost your municipality thousands of dollars.

Chicken-pox in the Adult.—The board has also issued a circular of information to the physicians of Illinois, a portion of which is as follows: Notwithstanding the well-demonstrated incontestable fact that chicken-pox is preeminently a disease of childhood, it is known that during the present widespread epidemic of modified small-pox in the State of Illinois and elsewhere, many cases of this disease, occurring in both early and late adult life, have been pronounced chicken-pox. This diagnosis in the majority of instances seemed to have been occasioned by the mild nature of the present outbreak, which tended to confuse physicians who were conversant only—in many cases, through the medium of their text-books alone—with the typical form of small-pox, which has usually prevailed heretofore. The occurrence of chicken-pox in adults is so rare as to have escaped the observation of many of those who have devoted years to the study of exanthematous diseases. That it does occasionally exist during adult life is not denied, but its appearance at this period is so uncommon as to excite comment. All cases of so-called chicken-pox in adults, seen by this board during the present epidemic, presented a well-defined variolous eruption.

. . . .

In support of the assertion that chicken-pox rarely attacks other than children, and that an epidemic eruptive disease affecting adults and children alike is not chicken-pox, the circular gives quotations from various standard authors, and continues as follows: In conclusion, the State Board of Health desires to emphasize the necessity for the observation of the most stringent precautions in every case of eruptive disease, particularly one resembling chicken-pox or small-pox. The failure of a physician to readily recognize small-pox, or a neglect to recommend the adoption of extraordinary care in all cases of a suspicious nature, may at any time cause the beginning of an outbreak in a community, entailing much sickness and loss of life, panic, interruption to travel and depression of business, and a financial loss impossible to estimate. The most rigid quarantine and isolation is recommended in every case concerning which there is the slightest uncertainty, and the maintenance of such until all doubts are set aside. Especially should a varicellalike eruption in an adult be regarded with great suspicion. It may not be small-pox; it is extremely unlikely to be chicken-pox.

Of "Puerto Rican chicken-pox," so many cases of which have been reported in Illinois and other States recently, little need be said. No sanitary authority has knowledge of any type of varicella which is peculiar to the island of Puerto Rico. Every case of "Puerto Rican chicken-pox," "Cuban itch," "elephant itch," and "elephant chicken-pox" seen by the officials of this board during the past three months was found to be small-pox.

The New Orleans Polyclinic.—The report has been circulated that the work of this institution has been suspended on account of small-pox in New Orleans. The secretary informs us that this statement is absolutely false. The polyclinic, he says, has had a continuous course since November 20th, and it will continue until May 12th. He adds that the small-pox situation in New Orleans has at no time justified any apprehension on the part of students attending the polyclinic or on the part of those who might wish to do so.

A New St. Louis Journal.—We have received the first number of a new monthly medical journal entitled the *Stylus*, edited by Dr. William Porter and published in St. Louis. It contains forty-eight large octavo pages of reading matter of a varied and valuable character.

Original Communications.

THE SHELDON MURDER TRIAL:
RÉSUMÉ OF
THE EXPERT TESTIMONY FOR THE STATE.

By WILLIAM S. CHEESMAN, A. M., M. D.,
AND
ALBERT H. HAMILTON, Ph. G.,
AUBURN, N. Y.

An expert, on reading a stenographic report of testimony given by himself on the witness stand, will often be struck by its inadequacy and the incorrectness of the minutes taken. The questions asked by counsel sometimes fail also to elicit a full and comprehensible statement of the expert's opinion. This is true of the court records, though they were unusually well taken, in the case of the People of the State of New York *vs.* Frank N. Sheldon; and it is not surprising that Dr. Charles Phelps, in his recent criticisms based on stenographer's reports,* has been in some respects misled, and has failed to obtain a correct notion of just what the experts for the State really thought and testified.

For these reasons, and in view of the medico-legal interest and importance attaching to the case, the writers offer the following statement of the work done by them, and of the reasoning on which their conclusions were based.

We shall not enter upon all the circumstances attending the crime. They have been given satisfactorily in Dr. Phelps's article. Suffice it to say for the benefit of such as are not familiar with the facts that Mrs. Sheldon was found dead in her house with a bullet wound through her head, and beside her a five-chambered revolver containing two whole cartridges and one that had been fired. The coroner's jury gave a verdict of death "by means of a leaden bullet fired from a pistol in the hands of some unknown person." (Dr. Phelps errs when he states that they found suicide.) The question was thus unsettled whether she killed herself or some other person killed her. The possibility of accident was excluded by her husband's early testimony and the admission of his counsel that "the case was either murder or suicide." If she did not kill herself, circumstances pointed unequivocally to her husband as her murderer.

The district attorney's commission to us was to determine whether, under the circumstances, Mrs. Sheldon could have killed herself. If this was possible, he would not prosecute.

The fulfillment of this grave commission demanded a study of the weapon and the ammunition used, of the wound in all its details, and experiments to ascertain whether such a wound could have been produced by this weapon and ammunition at any range within the ability of Mrs. Sheldon to hold and discharge it.

1. *The Weapon.*—This was a Colt's revolver of five chambers, 0.30 calibre. The barrel was two inches and a quarter, the chamber an inch long, and the distance between the rear of the barrel and the chambers was a sixty-fourth of an inch.

We go into somewhat minute details, because we believe even small variations in length of barrel or chamber, or of the space between these, may be productive of difference of result. Therefore, when Dr. Phelps speaks of the weapon with which the defense experimented as "similar in all respects to that in the hands of the prosecution," he is in error, because it was admitted by the defense that they were unlike. And when he asserts that the pistol used in his own experiments was "in all respects of the same character as those employed by the prosecution and defense," he asserts that a thing may equal two things that are not equal to each other.

Much stress is justly laid by Dr. Phelps throughout his critique on the vital importance of similarity of conditions in order that inference from experiments may be fairly drawn. Judged by his own high and exacting standard, both the experiments made by himself and those made by the defense were in strictness irrelevant, since they were not made with the identical weapon with which the crime was committed. This point may seem trivial and hypercritical, but we emphasize it for the reason that results obtained by us with the Sheldon pistol were in some respects, later to be dwelt upon, so unlike those obtained by Dr. Phelps that he terms ours "difficult of comprehension."

Greatest Muzzle Distance at which Mrs. Sheldon Could have Held and Discharged the Pistol.—In settling this most important point, it was necessary, of course, that the pistol should be so held by the person experimenting that the ball would take the precise course followed by that which killed Mrs. Sheldon. This ball ranged inward, forward, and a little downward, from a point just above the tip of the right ear,

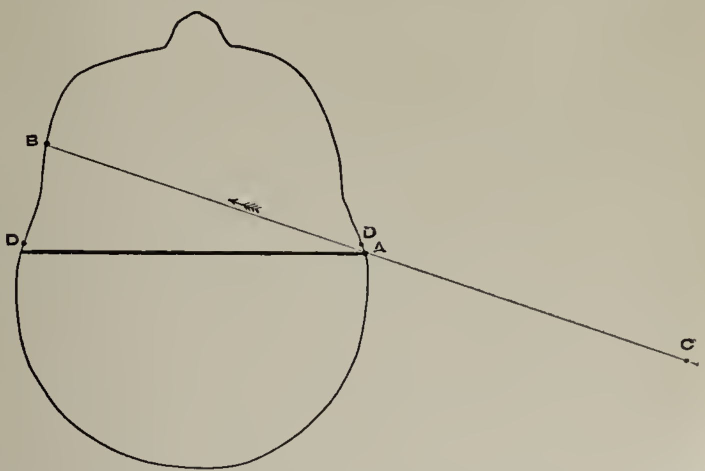


Fig. 1.—*A.* Point of bullet entrance. *B.* Point of bullet lodgment. *C* to *B.* Direction taken by bullet. *D D.* External auditory canals.

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* The Sheldon Murder Trial: A Review of the Medical Evidence relating to Pistol-shot Wounds of the Head. *New York Medical Journal*, November 4 and 18, 1899.

through the brain, to the temporal bone on the opposite side, an inch and three quarters in advance of its point of entry (illustration, Fig. 1). In order to be certain that the pistol was held in precisely this direction, whatever position was given to the head, one of us (Hamilton) constructed the instrument shown in Fig. 2. One point of a pair of large calipers, like a pelvimeter, was placed upon the point of entry of the ball, and the other on its point of lodgment on the opposite side; to this caliper attaches a bar on which the pistol slides in a holder that can be raised or lowered; the greatest muzzle distance at which the trigger could be pulled being noted on the bar. The photograph shows the constrained position of head and hand necessary in discharging the pistol at six inches and a half, the ball taking the direction described.

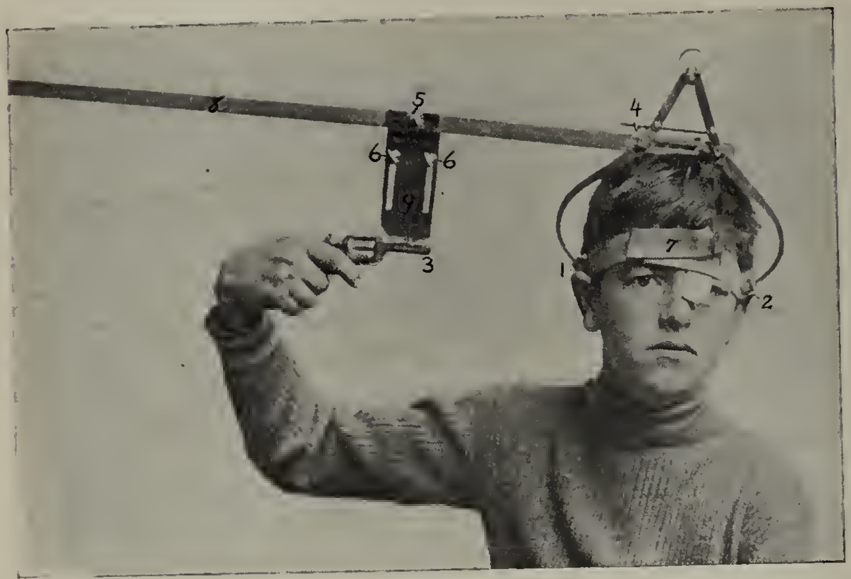

FIG. 2.—Hamilton's instrument for determining the greatest range at which a suicide can discharge a pistol at the head. Explanations: 1, point of bullet entrance; 2, point of bullet lodgment; 3, muzzle of revolver; 4, screws for regulating 1 and 2; 5, screw for setting revolver carriage on bar when revolver has reached the greatest distance at which the finger can snap the trigger; 6, screws for adjusting the aim of revolver after 1 and 2 are in position; 7, elastic bands to prevent displacement of 1 and 2; 8, bar supporting the carriage and parallel with path of the bullet; 9, revolver carriage. When a test shot is made the revolver should be supported by the hand unaided by the carriage.

This instrument was subsequently used in the Sackett's Harbor (1897) and Rome (1898) murder cases.

Various results were obtained from different individuals, depending on length of neck, arm, and finger, on flexibility of joints, and on size of head. It becomes necessary, therefore, to know exactly the length of Mrs. Sheldon's arm, etc., and to find some person giving precisely these measurements with whom to experiment. A second disinterment was made to secure the needed information, the importance of which had not been perceived at the first disinterment. The measurements obtained were as follow: Head, five inches and three quarters in diameter. From wound to shoulder, seven inches and three eighths. From base of neck to point of shoulder, five inches and a half. Arm, twenty-eight inches from shoulder to end of finger.

A young woman, a member of the Sheldon family, was found to present precisely these measurements. Holding the pistol in the instrument described, the greatest muzzle distance at which she could pull the trigger with the forefinger was six inches and a half, in over one hundred experiments. Dr. Phelps remarks: "This estimate, if not exact, may be assumed to be sufficiently so for the purpose of this inquiry."

The inherent improbability of any one attempting suicide at ranges other than contact, or nearly contact, will occur to every one. The obviously natural thing to do is to place the muzzle against the head and discharge it there, or but slightly removed. The supposition that this pistol was fired at any range as high as four inches, for instance, does violence to all probability and experience, and required a peculiarly constrained position of hand and head to accomplish it. But improbability was not impossibility.

The possibility of the trigger having been pulled by the thumb with the arm at full length received full attention. It was found that this young woman could pull the trigger thus at a muzzle distance of nineteen inches. These facts were not brought out during the trial, and so do not appear on the record. Perhaps it is sufficient to say of this theory (editorially suggested in the *New York Medical Journal*, vol. lxx, p. 680) that, in spite of the hopes of the district attorney, counsel for the defense, though driven to desperate straits, never had the hardihood to claim before the jury that a woman wishing to kill herself held a pistol at arm's length and pulled the trigger with the thumb. Had he done so, the claim could have been refuted, as will appear later.

The Ammunition.—The cartridge used was a No. 0.30 short, and was made by the United States Cartridge Manufacturing Company, of Lowell, Massachusetts, between 1874 and 1878.* The age of the cartridges explains the deterioration observed in the powder. It was found that in many the bullet was loose in the shell, permitting access of moisture, readily absorbed by the grains, as their plumbago polish was lost; many had broken down and subsequently recrystallized into a caked mass, and crystals of saltpetre observable by the naked eye had formed upon their surface.

The importance of these conditions lies in this: It is held by experts in firearms, in opposition to the views of Dr. Phelps, that old and deteriorated powder burns objects at greater distances than new powder. In the new, the space between grains not being filled with dust or saltpetre crystals, nor the grains caked, the flame of the detonating fulminate has access to all parts of the mass; whereas in old powder only a small part is ignited by the fulminate, much of it not burning till ignited by the flame after leaving the muzzle.[*] We understand Dr. Phelps virtually to admit this when he says: "If the powder was still damp,[†] the range at which burning occurred was slightly extended, and its severity was increased, and the burning of the skin under the same circumstances was similarly affected."[‡]

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* Each cartridge contained six and a half grains of black powder and seven tenths of a grain of fulminate, and the bullet weighed close to sixty grains. The ball that killed Mrs. Sheldon weighed fifty-nine grains, but a bullet loses some weight after firing, owing to particles of lead being stripped off by the crimped edge of the shell and the rifling of the barrel.

The Wound.—Three autopsies were made on the body of Mrs. Sheldon, the first at the instance of the coroner; the second, nineteen days later, by some of the experts for the State, at the instance of the district attorney; and a third, twenty days later still, for the purpose of taking measurements of the arm, neck, shoulder, etc. The writers quite share Dr. Phelps's regret that the first autopsy was not conducted with more care and exactitude; yet the observations were, perhaps, sufficiently full. They were made by two physicians of education and ability, the coroner and the gentleman deputed by him, and their testimony was in accord touching essential facts. Measurements to one one-hundredth of an inch were not made, but the gross phenomena, which, after all, are the important ones, were well observed and described. We can not, therefore, agree with Dr. Phelps that "the basis of the whole process of investigation was defective"; and that he himself does not regard it as entirely so may be inferred from the fact that he offers a theory of his own founded on this same basis.

The lesions observed were as follow:

A bullet hole about as large as a lead pencil in the head just above the right ear.

A contusion on the tip of the right ear directly opposite the bullet hole, and in the course taken by the ball.

Three powder stains—one on the tip and one on the rim of the right ear, and one on the temple. The coroner thought there were a few more when he first observed the body. All washed out, none being found at the second autopsy.

A few hairs singed over an area of about a fifth of a square inch just above the bullet hole.

Going deeper:

Some contusion of tissues about the bullet hole.

Bullet hole round, its diameter thirty-eight one hundredths of an inch.

Brain penetrated and skull fractured on the opposite side, where bullet was found an inch and three quarters in front of its point of entry.

Absence of smoke stains or powder stains within the skull, or on edge of osseous wound, and no burn on the skin or smoke stain about the wound of entrance.

Now, could the Sheldon pistol, fired with the muzzle anywhere from contact to six inches and a half, have produced this congeries of appearances? If so, suicide was possible.

To answer this crucial question a great number of experiments were made with this pistol to ascertain the effect of its fire at different ranges. We must here, again, emphasize the fact that our experiments were made with the identical weapon and ammunition with which the crime was committed. We do not know what other pistols will do, but we do claim to have established by hundreds of experiments what the Sheldon pistol will do; and where differences of results are noted by experimenters, using other weapons superficially similar, we claim acceptance for ours.

In making these experiments various substances were used as targets. To determine the spread of powder grains unburned by the discharge, the pistol was fired at sheets of blotting paper or cardboard at ranges from contact to several feet. It is an error, however, to suppose, as Dr. Phelps does, that any inference whatever was drawn—by the experts for the State, at least—from results thus obtained, as to penetrability of human skin by powder grains, or by smoke stain, or its liability to burn, or any other particular. Such facts were obtained by experiments on cadavers alone. We got from the blotting-paper and cardboard targets simply a map of the diffusion of unburned powder, and nothing else.

Experiments in hair burning at various ranges were made with the heads of cadavers, with live human hair identical in texture with Mrs. Sheldon's, and with Mrs. Sheldon's own hair affixed to cardboard. The hair of a cadaver which is brought from a cold into a warm room soon becomes slightly damp from precipitation of moisture, and burns with great difficulty. Mrs. Sheldon had been working in a warmed room and about a stove, and her hair at the time of her death was supposedly dry. These conditions are more closely imitated by a target of dry hair fastened to some backing.

Experiments were made with targets covered with cotton, which, being ignited by powder grains, proved that these grains were burning when they struck the target. Nothing was inferred from the experiments as to burning of skin or hair. The fact was established that at certain distances powder grains were burning—that was all.

After the fact had been established that in contact shots at the head of a cadaver the unburned powder grains follow the ball through the hole made by it, and do not appear on the skin, this was illustrated by means of wooden boxes. When the pistol was fired at contact with one of these boxes the ball passed through and through, while many of the powder grains which followed it were caught and retained by the opposite inner side of the box. This did not prove that the same would happen in the case of a human head, but it illustrated the fact after it had been proved on the head. It was merely a diagrammatic representation of what had been found to take place in contact shots at the head of a cadaver.

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[*] The amount of residue of unburned powder after firing an old 0.30 U. S. cartridge was one grain; that after firing a new 0.30 U. S. cartridge was half a grain.

[†] If we understand Dr. Phelps correctly, his experiments comparing damaged and new powders were conducted with powders artificially moistened and dried. This does not fully reproduce the disintegrating effects of age, above cited.

[‡] Dr. Phelps cites as a "remarkable negation of an established chemical fact," that "it was asserted by the State that carbon is one of the products of the combustion of gunpowder." This assertion was not made. It was asserted that after gunpowder is fired from cartridges a residue, or deposit, of the carbon in the unconsumed powder grains remains, which is surely a most familiar fact. Noble and Abel's experiments were made to determine what residue remains when powder grains are totally consumed, and were made in sealed retorts capable of resisting the expansion of the gases.

Effect of Firing the Sheldon Revolver at Different Ranges.—A *résumé* of the testimony on this point has been given by Dr. Phelps. We reproduce it here with necessary corrections. It should be understood that these results do not depend on a few experiments. For instance, in the case of contact shots, the results of only three on two cadavers were given at the trial, because more were not made at the precise point of Mrs. Sheldon's wound. But a great many more—at least twelve to fifteen—were made at other points upon heads of cadavers, so that the general characteristics of contact shots on the head by the Sheldon pistol were well established. And the same is true of shots at longer ranges. Dr. Phelps criticises the paucity of experiments on which the prosecution based their belief that the shot that killed Mrs. Sheldon was not fired at contact. Whether his criticism is just or not, it is interesting to note that "a much larger number of later experiments" made by himself lead him to precisely the same conclusion reached by us.

Range.—Contact: Hole in skull much larger than necessary for the ball to pass through; wound through the scalp much lacerated upon its edges and filled with powder smoke and grains; ring of heavy, dense powder smoke, from an inch to an inch and a quarter in diameter, surrounding the wound; hair blown about and radiating in every direction, a characteristic feature; skin immediately surrounding the wound more or less burned and, with the hair, thickly coated with a dense deposit of powder smoke.

At half an inch: Same subject; hair burned off and deposit of smoke in area of an inch and a half; hair violently blown away from the wound; hole through the skull * half an inch wide and three quarters of an inch long, irregular, and highly fractured; tissues burned and filled with powder smoke and grains.

At five eighths of an inch: Same conditions, only more marked as to burning of the hair; beginning of slight deposit of smoke on tip of the ear.

At three quarters of an inch: Same conditions as regards point of entrance, except area of smoke deposit greater; hair burned in larger area; two thirds of ear densely covered with smoke; tissues lacerated and filled with fired powder in larger area; skin burned.

At an inch: Same conditions, except that area of smoke was about two inches in diameter; hair burned in same area; entire ear covered with smoke deposit; imbedded grains in area of a fourth of an inch radius.

At two inches: Imbedded grains in area of an inch; other features the same, only intensified.

Imbedded grains can not be washed out at any range from five eighths of an inch to two inches.

At four inches: Hair burned to crisp in area of an inch and a half; smoke stain in area of two inches removed by washing so as not to be visible to the eye; imbedded grains, nearly whole, too numerous to count, not removed by washing.

At six inches and a half: No singeing of hair; powder marks and grains in area of four inches and a half * too numerous to count; top lobe of ear full of powder marks; † grains imbedded whole; not removable by washing.

At twenty inches: Penetration of skin with powder grains too numerous to count, covering an area of nine inches in diameter; did not rub off, and twenty grains could not be washed out. Second experiment, forty grains could not be washed out.

At twenty-four inches: Area of grains, one foot; twelve large grains penetrated the skin and did not rub off; four could not be washed out. Second shot at this range, seven grains were imbedded, leaving stains after rubbing off, and four left stains after washing.

At thirty inches: Grains too numerous to count, covered an area of one foot; not imbedded; left stains that would wash off but not rub off. Second experiment, the grains covered an area of fifteen ‡ inches; three were imbedded, and one of these two would not wash off.

At thirty-six inches: Grains scattered over an area of one foot; four penetrated the outer skin, of which one, at a distance of three inches and a quarter from the wound, burned a hole; stains washed off. Second experiment, the grains covered an area of fifteen inches, and two were imbedded, one at a distance of two inches and a quarter from the wound; three stains would not wash off.

At forty-two inches: Area of grains, one foot; none imbedded; over twelve that would brush off; no stains. Second experiment, practically same results.

(*To be concluded.*)

The Preservation of Rubber Articles.—According to the *Journal of the American Medical Association* for March 3d, Professor Krolikowski publishes, in a Polish paper, the results of extensive tests which show that the best method of keeping rubber articles is in a one-per-cent. solution of formol or zinc chloride or a concentrated solution of boric acid. Red rubber keeps better than black, he asserts, other conditions being equal. Rubber articles, he adds, should never be left exposed to the air or to the action of cold.

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* Typographical error in evidence—reads scalp.

* Typographical error in evidence—reads eight.

† Powder perforated the epidermis, causing stains which washed out, but perforation was permanent.

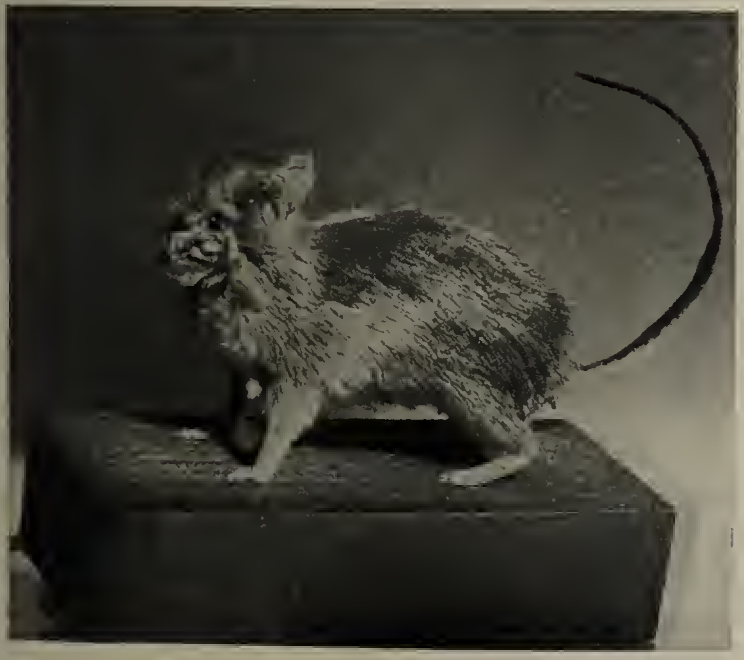
‡ Typographical error in evidence—reads eighteen.

TINEA FAVOSA.*

By CHARLES A. KINCH, M. D.

Two incidents in private practice within the last two years have directed my attention rather forcibly to the subject of favus. In the first, a prosperous Italian fruit merchant was endeavoring to assist the immigration of some of his wife's relatives—father, mother, and a brother of twelve years. He got them as far as the barge office, and, meeting with some difficulty there, asked me to go down and speak for him. I found that the principal objection, among others, was that the boy was the subject of favus—a contagious disease excluded by special statute. Again, in the family of a well-known lawyer in this city, two children were infected with favus. All the members of the family were native Americans, and had traveled but a few miles from the city. One of the children was very fond of animals. He was not satisfied to see them only, but must enclose them in his arms, and rub his face and head on them. It is supposed that he contracted the disease from a cat and conveyed it to his sister. In this connection it must be remembered that favus is exceedingly rare in American subjects. Cantrell, of Philadelphia (30), has seen only two cases in ten years.

Whether tinea favosa was at the first a disease of animals or of man, it is certain that its spread is now largely by means of the domestic animals. And in this malign work the rodents perform no inconsiderable part. I have here a stuffed mouse with beautiful scutula upon its snout and its left ear. This specimen I secured in 1881. Fleming (1*a*), late principal veterinary surgeon of the British army, reports that when he was in the corps of Royal Engineers in 1875 "mice appeared to suffer much from this disease in a certain part of the men's barracks, and many were found in a dying state in the men's rooms. Several of them were brought to me either dead or dying, and on these the favi had attained an extraordinary development, more especially on the head—ears and face being often destroyed by the fungus. An excellent example of the ravages of this affection in mice I forwarded to the museum of the Royal College of Surgeons in London, where it is now exhibited." In 1868, Dr. Mollière (14) presented a favic rat to the Lyons Society of Medical Sciences. The first description of this disease in mice was by Bennett (27) in 1850.



Cases of direct contagion from mice to men have been reported by Anderson (8), of Edinburgh, Tripier and Horand (15), of Lyons, and Ohman-Dumesnil (33), of St. Louis. The latter's case is as follows: "A clerk went to clean a drawer among others in a store. In it he found a mouse's nest, with young mice two or three days old. He scraped up the pieces of paper with his hand. In a few days the initial eruption appeared on the volar surface of his hand."

The next most potent malefactor is the family cat. The disease attacks first the toes at the base of the claws, and afterward the forehead, base of the ear, and dorsal line of the nose. Later, it spreads to the external surface of the thighs and various parts of the body. Pale, sulphur-yellow, cup-shaped crusts are formed, the same as in man. In them the hairs remain for some time erect, rigid, and lustreless, but subsequently are cast off. The animal does not seem to suffer much pruritus or manifest any impairment of health.

Cases of transmission of favus from cat to man have been noted by Draper (6), Saint-Cyr, Horaud, Anderson, and W. G. Smith (37). The reverse of this, the transmission of favus from children to their pet cats, has been detailed in the *Inaugural Thesis* of Jacquetant (4), who observed the cases in his service as house physician in the Antiquaille in Lyons in 1847.

Dogs are susceptible to this disease. Anderson (8) and Buchanan have observed it on the fore paws of rat-catching species. Trasbot (17) exhibited before the Central Society of Veterinary Medicine of Paris a nursing bitch with her litter—all of them covered with favus crusts. They exhaled a mawkish odor, which Trasbot compared to moldy cheese. This mother was a terrier and brought to her puppies the rats she caught. The young were first affected, the eruption beginning on the umbilical region. Saint-Cyr says (13): "All those animals which I have seen affected with favus were young; the cats—seven or eight in number—were no more than six weeks to two months old; the dog was about four months old, and was the oldest of my patients. I have tried twice to transmit the disease to adult cats, but could not succeed, while all the experiments—eight in number—made upon animals less than three months old, without an exception, had a positive result." The bitch of Trasbot, nine years old, and another case reported by Cadiot (21), a dog, eight years old, would seem to be exceptions to this rule.

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* Read before the West End Medical Society of the City of New York, November 4, 1899.

Saint-Cyr (12) and Megnin (18) have observed and described the favous disease in rabbits, and Saint-Cyr's animals infected one of his students who watched them.

There has been no authentic instance of the disease in the horse or the ox. Megnin's (2) statement, made in 1876, still holds true: "The animal species on which *tinea favosa* has been observed are five in number—viz., mice, rats, cats, dogs, and rabbits."

Favus affects the domestic fowl, and was the subject of extensive writings in 1858 by Gerlach (24), of Berlin, Müller (25), of Vienna, and Leisering (26), of Saxony. It usually commences on the comb, barbs, and wattles. From the nude portions of the head it advances to the feathered parts of the neck, the regions surrounding the cloaca, and under the wings. The eruption is of a whitish-gray (not yellow) color, in small round spots, which later become confluent. Favi form around the feathers, and have a small pit in the centre when these are shed. The cavities of the feathers are filled with nummular masses. The general health of the fowls is much impaired, and marasmus and death may supervene. Rivolta and Delprato (3) have described a similar affection of pigeons.

Neumann (1*c*) has been "able to infect the rabbit from the fowl, and the symptoms have been absolutely like those of favus in the rabbit when transferred from man. Reciprocally, we have obtained on the fowl a favus in every way similar to the natural favus of this species, by depositing on its crest the human favus mixed up with water. Success appears to have depended upon the crest being previously abraded—disintegration of the epidermis, so as to permit of the implantation of the parasite, being evidently an indispensable condition."

And this agrees with the experience of Aubert (19), as detailed in the following instance: "Two rats lived together peaceably in a cage in which favus spores had been sown, and neither contracted the disease. But one of them was accidentally killed, and another rat was introduced in its place. Disagreements between the fresh arrival and the other led to fighting and biting, and in four or five days after its entrance the new rat had a favus commencing at its ear, while its companion soon after showed favic cups on the head and nose."

Some predisposing conditions seem to be necessary to the implantation and growth of all the tineas, since they do not thrive on all skins exposed to them, and attempts at inoculation are often unsuccessful. Such predispositions have been thought to be found in youthfulness (1*b*), scrofula (29), lymphatic temperament (1*b*), impaired health (10), malnutrition (11), unsanitary environment (11), uncleanliness (11), and some peculiarity of skin (10). To these should be added the influence of slight traumatisms, often so trivial as to be overlooked. Bergeron (7) says that tinea favosa is prevalent in larger proportion in the country and tinea trichophytina in the city.

The cause of the favous eruption is the development of a mold, or schizomycete, in the epidermis, and in the bulb and shaft of the hair. The spores find a nidus in the opening of the hair follicle, and develop laterally in the corneal layers of the epidermis and vertically in the internal root sheaths. The fungus penetrates the cuticle of the hair and extends downward to the bulb with a luxuriant growth and upward through the shaft for a variable distance, not exceeding two inches. Or it may enter the hair bulb from its base. Since many of the hair roots are in the connective tissue beneath the level of the derma, an ulceration takes place which causes the destruction of the nutrient papillæ and surrounding tissues, and leaves pitted cicatrices. The hairs are loosened over the affected area, and many, but not all of them, are destroyed. The mycelium branches in a forked manner at acute angles and is intricately interwoven. These branches divide by fission into hyphæ, and some of these hyphæ become sporophores by the division of the protoplasm within them into spores. The fungus grows from its inferior or dermal side and at right angles to the plane of the skin (31). Being confined by the adherence of the external layer of the cuticle to the hair, it takes a cuplike form, like the cupule of the acorn, and there results the scutulum, favus, or godet. These cups are from two to seven millimetres in diameter, and of a pale yellow or sulphur color. When old, they fade to grayish-white—the color of old mortar—or, like the crusts of chronic eczema, they may become brownish or greenish from the admixture of blood, pus, and extraneous matters. In old cases, these cups are massed together in grayish or brownish crusts, from a millimetre and a half to two millimetres and a half in thickness, through which groups and chains of dry, wiry hair protrude. Such neglected patients have a penetrating, disagreeable odor, which has been likened to that of the habitations of mice, the urine of cats, or macerating animal matter.

The hollow surface and outer ring of these cups are composed of dead mycelia, empty sporophores, leucocytes, and adventitious dirt (32). Material for microscopical examination should be taken from the middle of the dermal or under surface. If the crust is removed carefully, there will often be seen, in the middle of the smooth red skin beneath, a yellow, dotlike depression, containing the favous growth in a pure culture (35). For diagnosis it is sufficient to soften the specimen with liquor potassæ and cover with glycerin. Permanent specimens may be mounted in glycerin or in balsam. By double staining with red and violet the living hyphæ can be distinguished from the dead mycelia and empty tubes. The former take a beautiful violet, but the latter take no stain, or, at best, but a dull crimson (32).

Our knowledge of the cause of the dermatomycoses extends back about sixty years. In 1837 Remak made the statement that favi had not the same elements as other pustules, and in 1839 Schönlein (22), of Berlin, announced the discovery of the parasite, which he supposed was an oidium. Subsequently, on evidence furnished by Link, Remak was convinced that this fungus should belong to a distinct species, and named it *Achorion Schönleinii.* The parasite of ringworm was discovered by Gruby (16) in 1844, and fully described by Mahnsten, of Sweden, in 1846, who named it *Trichophyton tonsurans.* And the parasite of tinea versicolor—*Microsporon furfur*—was discovered by Eichstedt, of Greifswald (23), in 1846. These fungi present different characteristics when viewed under the microscope. The achorion is distinguished by the forking branches, short hyphæ, and spores in tubes; the trichophyton, by long, straight mycelia, and very numerous spores, arranged singly or in chains; the microsporon, by mycelia branching at large, nearly right angles, short hyphæ, and spores grouped in grapelike clusters. The two latter grow in lines parallel to the plane of the derma.

The vegetation of the achorion upon the human skin produces a dermatitis which in the first two or three weeks, or until the cups appear, can not be distinguished from that of the trichophyton (9). Aubert (20) has called attention to the intense redness of newly affected areas. Ringworm makes a clean sweep, advances with a bold margin, dies out in the middle, and continues in circular and gyrate forms. On the scalp it disintegrates the shaft of the hair and presents a nibbled-off appearance. Favus is more chronic in its course, has the characteristic cups, goes down to the roots of the hairs, and leaves scars. It does not affect all of the hairs, but spreads in spots, so that newly attacked regions have the plucked-out appearance, similar to the alopecia of syphilis. Even after it has been allowed to do its worst, and has spontaneously healed, a few coarse, wiry hairs remain, scattered over the cicatrized surface.

Favus in its active state is attended with considerable itching, and the finger nails are sometimes infected. "The nails (34) have the appearance as if a foreign substance had penetrated from the front backward, lifting the nail in an irregular manner from its bed, and turning the horny layer upward. The latter showed no macroscopical changes except a slight change in color. . . . In cases of trichophytosis of the nails the disease first attacks the nail from the back or from the sides, and the horny layer is primarily affected, showing a furrowed, pitted, and brittle condition. These conditions are also occasionally met with in eczema and psoriasis."

It is believed by dermatologists that the number of cases of favus in this country is increasing. At a meeting of the New York Dermatological Society, in 1879, Professor Weisse (28) stated that he had seen but four cases in his clinic at the University Medical College in nine years (1870–'79). Bulkley (29), writing in 1881, said that six cases had presented themselves at his clinic at the New York Hospital in two years, and that a short time before he had reported six cases affecting the epidermis, which occurred during the space of twelve or fifteen months at the Demilt Dispensary and in private practice. There were other cases affecting the scalp, so that he may have seen fifteen or twenty cases in three or four years. While C. W. Allen (35), at the meeting of the American Dermatological Association in 1898, reported the unprecedented number of a hundred and thirty-nine cases seen in one year. It was at this time that favous patients were excluded from the public schools, and consequently a much larger number sought medical advice. The combined statistics of the American Dermatological Association of the decade 1877–'87 give a proportion of (0.0022) twenty-two in ten thousand of all skin diseases, and for the decade 1887–'97, not including Dr. Allen's cases, 0.0039. The highest percentage was in 1893—viz., 0.0052. Favous immigrants are not now permitted to enter this country. During the two years and four months from June 14, 1897, to October 18, 1899, a hundred and thirty-six such persons were excluded from landing at this port (36).

In the treatment of favus no better procedure has been found than that advocated and practised by Bazin (5) forty-five years ago—persistent and repeated epilation and brisk rubbing into the diseased surface of a watery solution of corrosive sublimate (0.005 to 0.008). This application produces some inflammatory reaction and makes the scalp red and tender for two or three days. It should not be intrusted to the patient, who will use it either meagrely and ineffectually or profusely and injuriously. In the intervals he may apply at home some parasiticide ointment or, if there is much itching, an antipruritic. In the former class may be mentioned dilutions of the various mercurial ointments and of sulphur ointment; in the latter, those containing tar, chloral camphor, or carbolic acid. The fungus is anaerobic, and we may not hope to smother it in grease. But oily preparations are beneficial to the growth of the hair, especially those of the paraffin series. Albolene and vaseline have been used with advantage, especially in the later stages of treatment. Chrysarobin and pyrogallol have been extensively used and highly recommended, but they are objectionable on account of staining; and if the former gets too near the eyes it will produce an acute conjunctivitis. A quasi-proprietary preparation, called campho-phenique, has also been recommended. The surface to which it is to be applied must first be carefully dried. Formalin is so destructive to bacterial growth that it would seem to be available in proper dilution for this purpose. Being the solution of a volatile gas, it should be confined in an ordinary wet dressing. Solution of sulphurous acid, pure or diluted, may be applied in the same manner. Both these preparations are irritating to the eyes and throat.

Favus in the human subject is often associated with adenopathy and an impairment of the general health, similar to that observed in mice and poultry. Reconstructive internal remedies, such as iron, arsenic, cod-liver oil, and bitter tonics, are therefore indicated. Fresh air, sunshine, and cleanliness are essential elements of successful treatment.

The cure of favus is perfectly feasible. When it affects the epidermis or the nails this is comparatively easy. But the treatment of chronic invasion of the scalp must be protracted, and relapses are very apt to occur. It is useless to undertake such a case unless the patient will promise to remain under observation a full year, and submit to active treatment for more than half that time. If a cure should seem to be accomplished in three or four months the use of parasiticides may be suspended; but the same rigid inspection should be kept up from seven to ten weeks longer. If, at the end of that time, there are no new manifestations of the disease the case may be dismissed. It is better to surprise the patient by a better result than has been anticipated than to let him drift away uncured—an opprobrium to the doctors and a menace to the community.

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SHOCK AND ITS SURGICAL SIGNIFICANCE.

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(Concluded from page 335.)

WHEN one is about to perform a major operation it is very discouraging to find one's self lacking in persuasive power sufficient to overcome the firm belief of the patient that he or she will not survive the operation. So much depends upon the psychic state of the patient that a buoyant and cheerful mental condition is a *sine qua non* of a favorable termination. Individuals who request an operation for the relief of a chronic surgical affection undergo the ordeal better than those who are suddenly struck down and compelled to submit to one.

The loss of power of deglutition is indicative of an inhibition of the glosso-pharyngeal centre in the medulla and is a very grave symptom. This centre is situated in close proximity to other vital centres which are indispensable to the maintenance of life. Insensibility of the conjunctiva discloses an implication of the fifth pair of nerves, and must be looked upon as a most serious complication.

When to operate after an accident while a person is in shock is a matter of vital import. The shock of the operation augments that of the injury, and thereby handicaps the chances for recovery. Chloroform is always more depressing and dangerous than ether. It is well known that the primary effect of ether is stimulating, but it does not counterbalance the operative depression. Then again, after the effect of a protracted etherization has passed off, the secondary effects are decidedly prostrating and frequently alarming. The operation should be delayed until reaction has set in and the mind has regained its self-possession. So long as the rallying powers are insufficient for healthy reaction from shock no regret need be entertained because the patient died without an operation, as the additional burden would inevitably prove disastrous. A decided subnormal temperature, a hardly perceptible and irregular pulse, superficial and irregular respiration, cold and anæmic extremities, and clammy perspiration certainly contraindicate any operative procedure.

The secondary opening of an abdomen after cœliotomy for undivined or accidental complications has, in our observation, almost universally proved fatal. The additional manipulation of the peritonæum at the moment "when a feather turns the scale" produces a secondary exhaustion of the vasomotor centre, and Paget says "there is perhaps no case in the management of which the courage to do little is more needed."

An unfortunate large mortality from shock is due directly to the unnecessary deliberation over the operative procedure and technique. The duration of an operation before the time of anæsthesia was a matter of minutes, and the highest surgical skill meant speed and dispatch in manipulating the knife. At present, through the free use of anæsthetics, the pendulum has swayed to the other extreme—deliberateness has supplanted speed, thus sacrificing precious time through a tedious and deliberate technique. Every detail should be carefully planned beforehand, and thereby reduce to a minimum the time consumed in its execution.

Fortunate is the patient who falls into the hands of a surgeon who neither manifests a tendency to insane haste nor has a chronic inclination for too much ado about trifles. Crile has experimentally demonstrated that the regions of the gall bladder and pylorus are specially sensitive to manipulation. Trendelenburg's posture is particularly bad when the patient is excessively obese, and the fatty abdominal contents are resting, through force of gravity, on the ever-active diaphragm.

Hæmorrhage and shock have distinctively different symptoms, yet the differential diagnosis is often very difficult. It sometimes happens that the abdomen is opened a second time for supposed hæmorrhage and none is found, while delaying opening in the supposition that the symptoms are due to shock may contrarily terminate fatally through hæmorrhage.

The diminished secretion of urine may be accounted for by the great fall in the arterial tension. The great lowering of the body temperature is explained by the superficial and irregular respiration and diminished blood pressure, consequently the tissues are sparingly provided with oxygen.

Prophylaxis. — The delineation of the preventive treatment of shock is a sphere vastly more important than the treatment of shock *per se.* Text-books generally dilate on the treatment, but seem to be entirely reticent on the prophylaxis. Many surgeons seem to be totally indifferent as to the judicious preparation of a patient previous to an operation. The hospital interne regards the cautious and minute preparation as superfluous and a waste of his precious time, consequently he delegates his duty to the nurse, and thereby the patient receives a happy-go-lucky and meagre preparation. Abdominal surgeons who are unusually fastidious in their preparation of patients are invariably rewarded in having a lower mortality than their less careful *confrères.*

We shall receive the most rational benefit in the prophylactic treatment of shock by any vigorous irritation of the sensory nerves of the extremities or by the administration of therapeutic agents which lower the blood pressure in the arterioles of the extremities and superficial parts of the body. We know that Goltz's beating experiment fails if counter-irritation is vigorously applied to the sensory nerves of the extremities. Why not then have recourse to this physiological fact in all our prophylaxis? Through this deduction we desire to point out some of the salient features which have proved to be of material virtue in the prevention of collapse after surgical operations.

Hypercatharsis is a frequent source of draining away vital energy and leaving the patient with a weak and fluttering pulse. A mild saline laxative would answer the purpose. The administration of half an ounce of good brandy *per os* half an hour before starting the anæsthetic is our invariable injunction. This is followed up by a hypodermic injection of sulphate of morphine, a quarter of a grain or a sixth of a grain, which is administered just prior to the starting of the anæsthetic. The strength is thereby sustained, less ether required, and the suffering mitigated. These are precautions which are methodically followed in every major or minor operation. A half pint of normal salt solution, with two ounces of whisky, is injected, just before operating, up into the sigmoid flexure in all cases tending toward a major operation or where the patient's vital resistance is in any degree below normal. Shock is minimized the closer the temperature of the operating room approaches that of the body. During the operation the patient should be kept warm with hot-water bags and wrapped in warmed woolen blankets, as the preservation of animal heat is of the greatest importance. Extreme caution must be taken that the hot-water bags do not touch the flesh and thus be the disagreeable means of producing an eschar—a not infrequent occurrence with indifferent nurses. In major operations, where shock is inevitable, the vigorous rubbing of first one extremity and then another is a marvelous means of combating initiatory shock. The application of a mustard plaster to the soles of the feet acts as one of the strongest counter-irritants we possess in inhibiting the dilator nerve fibres of the vasomotor mechanism. Beyond the field of operation no wet towels or moisture should come in contact with the patient. In cœliotomy the intestines should be covered by warm, moist towels wrung out from hot sterilized water. The air of the operating room should be moist and the temperature in all cases above 85° F. The cooling influence of the room over the exposed abdominal contents has a predisposing power in lowering the blood pressure in the peritoneal cavity.

The period of anæsthesia is frequently too much prolonged, and some surgeons have a strange indifference as regards the curtailment of time in completing an operation. Fastidious deliberation over trivial details in operating and needless elaboration of dressing the wound have frequently been the means of engendering an overwhelming degree of collapse. By paying due regard to the requisite temperature of the operating room, checking with dispatch all hæmorrhage as it occurs, minimizing time with expeditious discretion, and reducing the amount of anæsthesia just short of consciousness of suffering will invariably give the patient an incomparably good chance for a speedy recuperation. The bed should be warmed before the patient is placed into it by hot bricks or jugs or bottles of hot water. The foot of the bed should be raised so that the heart may the easier supply blood to the vital centres in the brain. The prophylactic treatment is mainly applicable in cases where the predisposing cause of shock is due to a surgical procedure.

Treatment.—From the foregoing remarks on the preventive treatment the writer desires not to be understood that shock can be entirely obviated. In a person suffering from a severe degree of shock due to injury, everything around the neck should be loosened and the body placed in a recumbent position without a pillow for the head. In mild cases the patient need only be kept warm and quiet. It is the author's unwavering conviction that many cases of shock are stimulated to death. Through want of cool discrimination the patient is subjected to a method of hypodermic medication which is appalling to anybody except to one who has temporarily lost common intelligence. First, stimulant No. 1 is tried, and, if that does not react immediately, recourse is had to No. 2, and so through the series of stimulants that are at command until the patient's vital apparatus ceases to operate and the body contains all the drugs found in the pharmacopœia. *Great energy of treatment may do great mischief.*

The main indication for treatment is the preservation of animal heat and the supply of artificial heat to the body, to keep the heart beating, to check hæmorrhage in the speediest and most efficacious manner, and to treat the existing complications as they are encountered. The patient should be covered with warmed woolen blankets and heat supplied by hot-water bags. Unnecessary manipulations should be avoided, as they only increase the exhaustion. The foot of the bed should be raised. It is more than useless to administer stimulants *per os* before reaction has set in, as the process of absorption is almost in complete abeyance. We would further admonish that hypodermic injections should be made into the body instead of into the extremities, as we are somewhat skeptical as regards the immediate absorption of remedies injected into the extremities, where the circulation is so far below par as to be hardly perceptible. The extremities should be vigorously rubbed with a rough towel, and the application of a very strong mustard plaster to the soles of the feet recommends itself as being in harmony with the counter-irritation experiment of Goltz.

After reaction has fairly set in, and the stomach is in fair condition for digestion and absorption, iced champagne or brandy and soda is well borne. In an irritable condition of the stomach ingredients of any nature are not well retained, and enemata of normal saline solution are invaluable in the exsanguinated state of a patient and are absorbed with astonishing rapidity from the lower alimentary tract. In all my surgical work I am inclined to absolutely interdict any fluid or nourishment to be administered *per os* before vomiting has entirely abated. I am partial to relieving thirst by an enema of a pint of water and small quantities of whisky. This is repeated every two hours until thirst is quenched. It has been my invariable experience that excessive thirst is an abettor and contributor to shock.

I simply desire to mention the most indispensable remedies for hypodermic medication without going into their physiological action, as they are too well known to require it. The inhalation of nitrite of amyl may be employed to good advantage not only while the patient is on the operating table, but repeated until the desired effect of the other remedies is obtained.

A remedy that I am very partial to, and which in our estimation possesses virtues hitherto hardly appreciated by the profession, is camphor, 1.0; oil of sweet almonds, 5.0—administering hypodermically thirty minims every hour *pro re nata.* The cardiac beats will become stronger, slower, and more regular as soon as it is absorbed from the injected area, and in my experience it has a therapeutic value not surpassed by any remedial agent with which we are familiar.

Natrium caffeine is another drug which has withstood the test of German critical clinicians, and possesses stimulating effects which will not be disappointing. Strychnine sulphate has passed down to us as a thoroughly efficacious remedy in any enervating condition. It reliably sustains the arterial tension. Morphine acts as a strong, steady, and continuous stimulant, and is a most valuable drug in maintaining the vital powers and controlling restlessness. It should not be given too often or in too large a dose. We want the stimulating effect of morphine and not the soporific. Nitroglycerin also strengthens a failing heart, and should be given in doses that are ordinarily toxic.

My experience in employing oxygen inhalation in shock has been anything but encouraging. I can recall fourteen cases in which it was used, and all terminated fatally. This much must be said, that all presented symptoms of the gravest nature and oxygen inhalation was the last recourse.

Hæmorrhage is the most frequent cause of critical shock and is dependent upon purely mechanical conditions. It causes a disproportion between the capacity of the vascular system and the amount of its contents. Consequently an additional stress is placed upon the vasomotor centre in maintaining a given mean blood pressure, and in this manner the total amount of functional reserve of the centre is diminished. The blood current of the vessels ceases and the heart, like an empty pump, is no longer able to drive the blood onward. This can be remedied by increasing the contents of the vascular system by an effusion of a seven-tenths-per-cent. solution of sodium chloride, which is rendered slightly alkaline by the addition of potassium carbonate.

The paraphernalia required for infusion is a glass funnel or a glass flask, with a tube reaching to the bottom of the flask and connecting it with a rubber tube. To the other extremity of this rubber tube is attached a glass cannula, which is to be inserted into the cephalic or basilic, or whatever vein is selected for the infusion. The strictest asepsis must always be observed and the entrance of air especially avoided. No higher pressure should be employed for the infusion than there normally exists in the large veins (0.13 to 0.25 millimetre). The temperature of the solution should be from 105° to 110° F.

During or immediately after the infusion a chilly sensation usually seizes the patient. This can be controlled by a hypodermic of morphine, and is invariably due to using a too cool solution. Vigorous massage, especially over the large abdominal viscera, will in a measure avert this chill. The quantity injected varies from a pint to two quarts, depending upon the condition of the patient's vascular tension. The quantity injected is important, and should be regulated so as to be about one ounce a minute.

The intravenous injection of normal salt solution can also be utilized to great advantage in severe traumatism, in the initial stage of sepsis after operation, in suppression of urine, and in enteroptosis. The output of the heart is at once increased, the amplitude of the strokes lengthened, and the blood pressure immediately rises as soon as the saline solution is allowed to run into the vein.

CONCLUSIONS.

1. Sensory-nerve irritation sufficiently powerful to produce exhaustion of the vasomotor centre causes a reflex paralysis and consequently a dilatation of the vascular mechanism.
2. Children and aged people with lax fibres and those addicted to alcohol bear a peculiar susceptibility to shock.
3. Hæmorrhage is the most pronounced cause, particularly if venous, as then the equilibrium of the vasomotor mechanism is too suddenly deranged.
4. Two distinct types are recognized: prostration with indifference, and prostration with excitement.
5. Peritoneal absorption of septic material invariably terminates fatally through shock before evident manifestations of peritonitis have developed.
6. A subnormal temperature, irregular pulse, superficial respiration, cold and anæmic extremities, and clammy perspiration contraindicate an operation.
7. The severity of operative shock largely depends upon the length of time in the performance of the operation, and the duration and degree of the anæsthesia.
8. Shock may to a large degree be prevented by any counter-irritation applied to the extremities.
9. Brandy *per os* and morphine subcutaneously before operating are imperative precautions toward prophylaxis.
10. The main treatment consists in stimulating the vascular system and to preserve the animal heat and supply artificial heat to the body.
11. In acute hæmorrhage or other excessive anæmia an infusion of normal saline solution is prudently indicated.

DAYTON BUILDING.

THE ADMINISTRATION OF GENERAL ANÆSTHETICS.

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In order to insure successful anæsthesia certain preparatory treatment is essential and should be invariably observed when practicable. The evening previous to operation the patient should take an aperient and the bowels should be emptied by an enema the following morning one hour previous to operation. The bladder should be emptied immediately previous to operation, using the catheter if necessary, especially in abdominal operations and obstetrical cases. No food should be taken for some hours previous, as in some high-strung, nervous individuals food will often remain for hours in an undigested state, and there is consequently danger of vomiting during anæsthesia, interfering with the operation, partial resumption of consciousness, and the risk of some particles entering the larynx and thus causing asphyxia or a septic pneumonia.

Where it is advisable for the patient to fast, rectal alimentation should be employed. In cases of emergency, where solid food has been recently taken, the stomach pump can be used, and, although somewhat disagreeable, it is infinitely safer. In cases of intestinal obstruction I have used the pump with great benefit, washing out the stomach with mild antiseptics until the fluids returned clear and without odor. The nausea, vomiting, and hiccough ceased for the time, distention became less, while the respiration and pulse improved. The patient looked forward to the renewal of the procedure, so great was the relief. If there is time, gastric lavage should be performed every three or four hours. False teeth, plates, or foreign substances should always be removed. The patient should be warmly clad when operation is likely to be prolonged. In cases of shock, hot bottles are of assistance in keeping up the temperature, as anæsthetics produce a fall in temperature of from half a degree to a degree and a half—ether, by dilating the capillaries, sweating, and the rapid evaporation from the lungs; and chloroform, by its vasomotor depressant action on the vessels and heart. In cases of profound shock from injuries, such as bullet wounds, perforation of intestine, stomach or appendical cases, ectopic rupture or strangulated hernia, or in the debilitated, one ounce of brandy with egg and a pint of beef tea peptonized should be given per rectum, or normal saline fluid, either by the bowel or by submammary injection previous to operation. Strychnine also is a valuable restorative, acting not only on the heart but also on respiration. Five to eight minims of liquor strychninæ (Br. Ph., 1–110), combined with tincture of digitalis or atropine, may be used hypodermically previous to anæsthesia. It should also be used during operation, especially if for any reason chloroform has to be administered instead of ether.

In collapse in these cases, or from the anæsthetic, one can not depend upon a better drug than strychnine of from ten to fifteen minims hypodermically. In such cases the heart is failing and absorption does not take place so rapidly, and in view of the depressant action of chloroform the usual tonic dose of five minims seems too small to depend upon in these cases of emergency. I have had occasionally some slight stiffness of the muscles of the face and neck in delicate women during chloroform anæsthesia from ten minims, but never anything to cause uneasiness; and I have administered as much as thirty minims during a prolonged section with profound collapse, with the most happy results. Various drugs have been proposed to be used previous to anæsthesia. Morphine, alone or combined with atropine, and given hypodermically half an hour before chloroform, shortens considerably the stage of excitement; and when once anæsthesia is obtained, extremely small doses are required to maintain insensibility to pain. It is sometimes of distinct advantage in the neurasthenic or hysterical, as the excitement is calmed and less fear is exhibited; so also it is of service in persons addicted to drugs, in whom prolonged struggling and muscular excitement are likely to occur. Victor Horsley* has pointed out the advantages of this combination in brain surgery, as it lessens the vascularity of the membranes and brain. So also in some operations upon the head and neck and about the mouth it is possible to operate without much pain, yet the reflexes are not abolished. The blood is able to be coughed or spat out, and there is less danger of its entering the larynx. The combined drugs should be used rather than morphine alone, for with ether it lessens the mucous secretion and with chloroform it acts as a preventive against cardiac inhibition.

Morphine with some, however, causes excitement, which may be still further augmented if ether is used, and the stage of excitement and struggling thus prolonged. Where this is known, the use of morphine should be avoided. In patients who are lethargic or semi-somatose, opiates should not be used, as respiratory difficulties are likely to ensue (Hewitt). Vomiting is frequently prolonged as an after effect; unconsciousness often lasts very long, and hypothermia is sometimes dangerous. In cases of advanced renal disease, where it is desirable to give as small an anæsthetic as possible, morphine might also be used, notwithstanding the fact that it is considered dangerous, since in cases of puerperal convulsions or in those occurring in Bright's, morphine may be used without the grave results usually credited to the drug. A warm solution of cocaine has been suggested as a nasal spray previous to ether. The advantages claimed for the cocainization of the nasal mucous membrane are:

1. The unpleasant odor is diminished.
2. The feeling of suffocation is absent.
3. The stage of excitement is shortened or absent.
4. Vomiting is rarer than usual during narcosis.
5. After sickness does not occur.
6. Allays reflex irritation which might cause neuroparalysis.

Cosmoline has also been suggested to protect the nasal mucous membrane. D. H. Ludlow † states that ether mixed with twice its volume of a bland, light preparation of liquid petrolatum is absolutely unirritating; it can be nebulized, and is of service to lessen the irritation of nasal mucous membranes.

When one remembers that cocaine, even in minute quantities, often produces pallor, faintness, and cold, clammy skin, with profound depression of the pulse and hurried, shallow respiration, it should be used with extreme caution if at all. In operation for adenoids, however, one might take advantage of its constringing effect on the tissues to lessen the hæmorrhage when ether is used. These proceedings are unnecessary if one produces ether narcosis by the previous use of nitrous oxide or commences with chloroform or the A. C. E. mixture, and changes to ether as insensibility is produced, using now the open or closed form of administration, as the case requires.

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* *British Medical Journal*, vol. ii, p. 670.

† *Philadelphia Polyclinic*, February, 1896.

It should be remembered that alcoholics, drug habitués, the robust, and the stout with short, thick necks do not take anæsthetics well. They require more than do others. The stage of excitement is prolonged, and in alcoholics the patients rapidly emerge from the drug. The determination of the individual drug to be used can only be decided upon after due consideration of the patient and the nature of the operation. Age and sex by themselves do not indicate any special choice, but rather their accompanying conditions. Chloroform has been given to the babe of a few days and also to the centenarian. Children, as a rule, bear chloroform remarkably well, but it must be well diluted with air and given drop by drop. The pulse, respiration, pupil reflex, and color must be carefully watched, as chloroform rapidly places the young patient in so calm and deep an anæsthesia that it is easy to give an overdose. Ether, on the contrary, from its pungency, is excessively liable to cause coughing, holding of the breath, spasm of the glottis, thus adding to the difficulty during the narcosis, and later on causing bronchitis or broncho-pneumonia. The A. C. E. mixture, given with an open inhaler, has proved the best anæsthetic for children up to five years of age. After that age ether should be chosen, providing no chest disease forbids its use. Extreme old age, if associated with bronchitis, asthma, emphysema, or renal difficulties, and general arterio-sclerosis, indicates the advisability of employing chloroform. If these conditions, however, do not exist, ether may be used; often, however, the demands of ether on respiration are too great on account of rigidity in the chest walls.

In chest diseases in the acute form, chloroform or the A. C. E. mixture is, as a rule, better borne. Especially is this the case in pleural effusions with displacement of the heart, when anæsthesia should be light, and cardiac and respiratory embarrassment should be carefully watched for and guarded against. In the more chronic forms, where the heart and respiration have become accustomed to the pathological conditions, ether may often be used. In empyema, ether or the A. C. E. mixture should have the preference, as resection may be necessary. Lobar pneumonia rarely follows ether. Cases of bronchitis and broncho-pneumonia are thought to be due to the toxic action of ether and have also been explained as due to the depression in the temperature of the patient, and to the removal from a heated operating room to a cold ward. The rapid elimination of the drug from the lungs thus chills the mucous surfaces as well as the blood stream, especially when the open method is used, as evaporation then takes place more rapidly than by the closed method. The subsequent œdema, which occasionally follows, has been attributed to renal insufficiency. The presence of renal trouble increases the danger in anæsthesia, as albuminuria frequently follows in patients who were previously free from it. Anæsthesia augments the albumin, as well as casts, in those already suffering from renal lesions. Occasionally, however, the albumin is diminished or disappears entirely. Albumin is more frequently observed after ether than after chloroform, but the nephritis caused by ether is transitory, while that due to chloroform may become chronic.* The quantity of ether used is an important factor in this connection, and a moderate amount of renal disease need not absolutely prohibit ether.†

Chloroform is the anæsthetic of election in the event of renal complications.‡ In twenty-nine per cent. of the cases after etherization albumin was found in the urine, and in 18.89 per cent. after chloroform narcosis. In each case the urine before operation was free from any trace of albumin. The etherized animals showed renal alterations consisting of diffuse hæmorrhagic nephritis with preponderating glomerulitis and multiple renal hæmorrhages.# Albumin was found in seven out of a hundred cases, but disappeared within forty-eight hours in all. || In a hundred and fifty cases in which the urine was examined before and after etherization, but one case was found in which it was present afterward where it had been absent before; and in this, albumin disappeared in five days.^ In thirty-four per cent. of cases albumin was not found before but was present after ether. In 34.6 per cent. albumin was present before and increased afterward. In 26.5 per cent. there was no increase in the quantity of albumin after the ether was given. In 1.54 per cent. no albumin was present before or after. In 1.33 per cent. albumin was present but diminished after etherization. In 1.33 per cent. albumin was present before and afterward.◊

Albuminuria is, in fact, regarded by some as due to the operation as much as to the anæsthetic. The heart should be carefully examined before any decision is made. Valvular disease, except aortic regurgitation, is

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^ Barensfeld. *Münch. med. Woch.*, No. 4, 1894.

◊ J. B. Ogden. *Journal of the Boston Society of the Medical Sciences*, 1897.

not so important as the muscular changes—dilatation or fatty degeneration — which indicate ether, provided there is no engorgement of the lungs. If this, however, is associated, the A. C. E. mixture should be chosen, together with strychnine and digitalis hypodermically. In cases accompanied or preceded by renal changes, chloroform is generally regarded as less irritating to the kidney.* Providing no dilatation of the heart exists, a smaller quantity is necessary, and suppression of urine is not so likely to occur. If, however, dilatation is present, the A. C. E. mixture or ether should be chosen, as heart failure will not then be so likely to occur. It is wise after such a case to inject large quantities of distilled water into the rectum to prevent as far as possible suppression of urine.

In abdominal cases ether is the agent largely used in the States, and should be more largely used here, in all cases where no great distention exists. But in large ovarian, fibroid, or encysted tubercular peritonitis I personally prefer chloroform, as the respiration is quieter and not so embarrassed, and relaxation of the abdominal muscles is more easily obtained.

In operations about the face, neck, tongue, or palate chloroform is preferable to ether, as there is less hæmorrhage. The cautery may be used and anæsthesia be kept up more easily without interfering with the operation by the use of a mask. The patient can be put profoundly under with ether. After the operation is commenced one can change to chloroform as the case proceeds, using a Junker's inhaler, or applying the mask as opportunity admits. In cases of operation about the mouth the patient should lie with one cheek on the table, if possible, and the blood be sponged out frequently; or he should lie with head extended over the table to prevent the entrance of blood into the larynx. Laryngotomy or tracheotomy should be performed, if the accident occurs, and artificial respiration practised after the larynx has been opened. Irritation may be produced with a feather in order to induce coughing. In ordinary surgical procedures (especially on those in the prime of life) ether should be selected on account of its greater safety.

Having thus considered the indications and contraindications connected with the more commonly used anæsthetics, I may now consider the apparatus necessary. A gas-and-ether apparatus of Hewitt, as manufactured by Barth or others; an open inhaler, as Allis's; a chloroform mask (Junker's inhaler is also useful); a mouth gag and tongue forceps are required. The ordinary mouse-tooth forceps is most useful, as it is self-retaining. Sponge holders, hypodermic syringe (in working order), and transfusion apparatus are also needed. I use the ordinary pint percolator of the druggist, with large aspirating needles with rubber connections for submammary saline infusion. Tracheotomy instruments and a battery are required. Drugs necessary include chloroform, ether, alcohol, A. C. E. mixture, nitrous-oxide gas (oxygen gas also is of service), strychnine, atropine, morphine, cocaine, one-per-cent. alcoholic solution of nitroglycerin, aromatic spirits of ammonia, saline infusion at 100° F., hot water, ice, vinegar, sparteine, digitalis, and amyl nitrite.

Nitrous-oxide gas undoubtedly is the safest anæsthetic known, as the mortality is estimated at one in 2,500,000. Unfortunately, anæsthesia under its influence, is so brief that advantage can only be taken of this drug in cases which are painful although short, such as minor surgical procedures not requiring more than forty-five seconds. Many of these minor operations can be performed now, however, under local anæsthetics, such as the ether spray, ethyl chloride, cocaine, eucaine, or Schleich's infiltration method, without causing the patient to undergo general anæsthesia. To-day the greatest importance, outside of dentistry, of nitrous oxide is its use previous to ether. Little or no struggling, coughing, or respiratory spasm occurs when so used. The time is less, the patient does not suffer as much, and the mortality is lessened somewhat. Turning on ether as cyanosis and jactitation supervene in giving nitrous-oxide gas, the face piece should fit closely to exclude the air, as this prolongs the period of consciousness. The patient should breathe deeply before any gas is administered, expelling the inspired gas through the exit. To-and-fro breathing should only be permitted toward the end. This prolongs the anæsthesia, although it takes slightly longer to produce unconsciousness than by the simple inhaling and expiration of nitrous oxide alone, on account of some residual air. The respiration under this anæsthetic is deeper and quicker than normal. When insensibility is complete the respirations are stertorous. The breathing may be interfered with by spasm of the respiratory muscles, the face and ears may become cyanosed, or respiration may become feeble, with prolonged expiration. The circulation is good throughout; the pulse becomes quicker, but volume is lost with the increase. As soon, however, as air is admitted the pulse rate falls and the pupils of the eye are dilated. Danger from an overdose appears in the arresting of respiration through spasm of the muscles of the thorax and larynx, or from obstruction due to swelling of the tongue and mucous membrane, rather than from failure of the respiratory centre—the heart still beating (Hewitt). The after effects of this anæsthesia are practically nil. Occasionally nausea, or vomiting, or headache occurs, if the patient has been kept under by reapplying the gas. Glycosuria has also been reported. Nitrous oxide has also been used with a small percentage of air, or with oxygen gas, with a view of lessening the cyanosis and muscular tremors, and also with a view of prolonging the period of anæsthesia. This combination, however, requires a special apparatus and is not of great use in general surgical procedures, as ether is generally used in preference for prolonging anæsthesia.

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* *Ther. Gazette*, March 15, 1895.

Ether, unless contraindicated by some preexisting disease, should be the anæsthetic of election, as statistics prove it to be much safer than chloroform. In 314,738 administrations, according to Julliard, twenty-one deaths occurred, showing a mortality of one to 14,987. The German Surgical Society reports one death in 11,617. Gurlt * reports one death in 26,268. Gorre reports 350,000 cases with twenty-five deaths, a mortality of one in 14,000. Unfortunately, statistics do not show the number of deaths occurring subsequently from renal and respiratory difficulties, and this fact has been urged as a reason against the general adoption of the drug. Ether, especially in the hands of the unskilled, is much safer than chloroform. When ether kills, it is slowly and by asphyxia, the heart continuing to beat even after the cessation of respiration. We have three methods of inducing ether anæsthesia. The first is the open, which is chiefly indicated in the young, as less fear is then exhibited and a larger proportion of air is admitted, thus lessening the irritating effect of the drug on the bronchial mucous membranes. It may also be given to the aged, where the rigidity of the chest wall can not meet the demands of ether respiration with the closed inhaler, as well as in cases of pulmonary or pleural effusions. It is also of service in the very obese, or in those who become quickly cyanosed with respiratory difficulties when the closed inhaler is used. The disadvantages claimed for this method are the increased length of time required, the larger quantity of ether necessary, the free evaporation saturating the room and sometimes affecting the attendants, the prolongation of muscular rigidity and excitement, and the difficulty sometimes experienced in keeping certain robust, muscular subjects under. In the alcoholics also this is especially noticeable, as they rapidly resume consciousness, and great struggling attends this form of administration. Neuroparalysis of the heart is uncommon. Cardiac failure at the commencement of or during operation is almost unknown, so long as the conjunctival reflex is present. It occurs from other causes than an overdose, and may be due to surgical shock or hæmorrhage. Under ether the healthy patient may be raised somewhat without the same danger of cardiac syncope which occurs with chloroform. The operation may also commence before anæsthesia is complete, without the same danger as when this happens under chloroform. The latter kills quickly, often with little or no warning.

The closed inhaler, when properly used, is generally the best method for people of middle life and the very muscular or alcoholic. The induction of anæsthesia is then quicker, the quantity required is less, the stage of excitement and struggling shorter, and less evaporation takes place in the room. The quantity of air is easily controlled in Clover's inhaler. Care must be taken when using the closed method to allow the patient to breathe in and out, and when breathing is satisfactorily performed the rotation of the ether chamber should be slow, in order to avoid increasing the strength of the ether too rapidly. The bag should not be applied until the patient is semiconscious, and it is best applied during expiration, after air is blown in to distend the bag.

After anæsthesia is complete the container should be rotated back, so that less ether is inhaled, and air should be given from time to time according to the color, the respiration, and depth of the anæsthesia. Dr. Buxton strongly recommends the third form, known as rectal etherization, especially for operations about the face, mouth, and tongue, and states that in his hands it has been most satisfactory.

The advantage of this method is the small quantity required, while excitement is absent or lessened, recovery quick, and the after effects are slight. The disadvantages are the disagreeable feeling and greater length of time required, sometimes thirty minutes elapsing before surgical anæsthesia is produced, though in some only three to five minutes are required. Severe meteorism, diarrhœa, and melæna, and deaths have occurred in this connection. Dr. Weir * records the death of a child eight months old, under an operation for harelip, when less than two ounces were used. Depression was followed by melæna, and the child died next morning. Dr. W. T. Bull † published seventeen deaths where melæna occurred in seven. If the risk of melæna, diarrhœa, etc., could in any way be reduced, rectal etherization would be of great service in mouth, nose, and face operations, as well as in cases of obstructed and embarrassed breathing (Hewitt). It is not an advisable plan, except under very exceptional circumstances. The apparatus required is an ether receiver holding two or three ounces of ether, and a container holding hot water at 120° F. If the temperature of the water is higher, the vapor is volatilized too rapidly, causing rectal irritation. A rubber tubing with a glass interceptor must connect the ether container to the rectal tube. In five to ten minutes ether is tasted in the mouth and drowsiness supervenes. One should carefully watch the secretion from the mouth, as under the other methods employed.

For ether anæsthesia the patient should lie with one cheek on the pillow, so that the excessive quantity of mucus and saliva may run or be sponged out of the mouth. Attempts at swallowing interfere with respiration at the time, and prolong the period before proper anæsthesia is induced. The secretions, if swallowed subsequently, induce vomiting on account of the contained ether vapor. If the secretions are too excessive to be relieved by this position a hypodermic of atropine will assist. Another advantage of this position is that the

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* *Deutsche Med.*, 1894.

* *Medical Record*, April, 1894.

† *Ibid.*, May 3, 1884.

uvula falls to one side and increases somewhat the airway. Movements indicating resistance on the patient's part should be avoided. In some cases, however, one can permit them with greater safety under ether than when chloroform is used. A guide for anæsthesia in infants is the palmar reflex. One finger is placed in the infant's hand, and as anæsthesia is induced the fingers relax their grasp. Returning consciousness causes them to tighten it. Respiration is the important factor to watch during etherization. The loud moist respiration is easily perceptible to the anæsthetist, to whom any change in rhythm is noticeable. Respiration may be embarrassed at the commencement from too concentrated a vapor, causing spasm of the glottis and coughing or holding of the breath. If plenty of air is allowed this is minimized to a large extent, as well as by commencing with the A. C. E. mixture or by previously using the cosmolin spray. It can also be avoided by the previous administration of nitrous-oxide gas, and changing to ether as sensibility is lost.

Spasms of the masseters and clinching of the teeth, or general muscular rigidity, may temporarily interfere with respiration. This generally indicates insufficient quantity of ether and too much air. Spasm of the thoracic muscles may be so persistent that artificial respiration may be necessary, compressing the floating ribs or the rhythmical traction of the tongue after the mouth is well opened and using a closed inhaler to increase the percentage of ether.

In the edentulous the lips may be sucked in, interfering with inspiration, but allowing expiration. Slightly obstructed breathing may occur from temporary swelling of the mucous membranes or from the falling back of the tongue. This may be overcome by pushing the jaw well forward and slightly extending the neck, or with the gag and tongue forceps. Embarrassed respiration may also occur during certain operations on the rectum, vagina, and in abdominal work, from reflex shock when the patient is not sufficiently under. As the operation proceeds less ether is required to keep the patient under, and the quantity required in each case must be decided by the rhythm of respiration. When an overdose has been administered the breathing loses its stertor and becomes feebler, expiration is prolonged, and occasionally breathing may become jerky and irregular, with gasping. The effect of an overdose acts chiefly on the respiratory centre, and the treatment in these cases should be to practise artificial respiration with the inhalation of oxygen gas. Coffee may be administered per rectum and hypodermics of strychnine and atropine used. The Trendelenburg position also is of service. Some, however, object to this position, as the upward displacement of the intestines causes pressure on the diaphragm. The color is also a guide. Cyanosis early does not necessarily indicate more air unless associated with circulatory and respiratory embarrassment, as it may be due to spasm. By increasing the quantity of ether relaxation takes place and respiration becomes characteristic as insensibility is induced. If cyanosis takes place later, more air is necessary and less ether required. There is a tendency to cyanosis in cases of goître or when the larynx is pressed on. The pupils should be observed after other signs have testified to surgical anæsthesia being present. During anæsthesia the pupils are usually moderately dilated, but may be contracted. If not sufficiently under reflex, dilatation takes place with the skin incision and indicates more anæsthetic. The pupils of neurotic women and children dilate widely from reflex irritation. This can be decided by the effects of more or less ether on the pupil and by trying the lid reflex. If present, the indication is for more ether. The conjunctiva, being frequently touched, loses its insensibility, and one should therefore use both eyes. With an overdose the pupils are widely dilated. The pulse is quicker and fuller than normal, and even after respiratory failure takes place continues to beat, but loses volume and soon becomes slower.

(*To be concluded.*)

APOMORPHINE AS A HYPNOTIC.

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In an article which appeared in the *New York Medical Journal* in its issue of October 28, 1899, I said:

"There is, however, one harmless remedy that will produce sleep in a few minutes, even when the patient is suffering with the wildest delirium. That remedy is apomorphine. . . . The use of apomorphine in this manner (without producing emesis) and for this purpose is, I believe, original with me. While its value has remained so long unrecognized by the profession, yet in point of fact there is no hypnotic in our materia medica that is at once so prompt, so safe, and so sure." Since the publication of this article I have received many letters from distinguished physicians in various parts of the country expressing a special interest in this new use of apomorphine, and promising to try my plan for using it as a hypnotic.

The last edition of Potter's *Materia Medica* (1899) contains on page 394 this sentence: "Apomorphine, though a derivative of morphine, is neither hypnotic nor narcotic in any degree."

A statement like this in a recent work of such high authority and excellence shows how completely the profession has overlooked the most remarkable property of this drug. I am acquainted with no remedy that is so near an approach to an infallible hypnotic as this, and I have found it equally useful in all forms of insomnia, regardless of the cause.

Dose and Administration.—One thirtieth of a grain, injected subcutaneously, is the average hypnotic dose of apomorphine, although individual susceptibility to this remedy varies somewhat, as is the case with most drugs. This is about one third the amount usually given as an emetic, and a still smaller dose, in many cases, acts as an efficient hypnotic. The object is to give a dose that, on the one hand, is large enough to produce sleep, and, on the other, is so small that nausea and vomiting are avoided. Such a dose is, of course, perfectly harmless in all cases in which a hypnotic of any kind is indicated.

Under ordinary circumstances this remedy should be administered when the patient is in bed, or quite ready for bed. Should he receive the treatment first and attempt to undress afterward, he is liable to be overtaken by drowsiness, and in some cases nausea, which will make undressing disagreeable. In active delirium, when the patient objects to going to bed, no attention need be paid to this rule, as he will voluntarily lie down in a few minutes after the remedy has been injected. As occasionally a patient is found who is very susceptible to the emetic action of this drug, it is well to give at first the minimum hypnotic dose, which is perhaps a fiftieth of a grain. In delirium, however, a little nausea will do no harm, and hence it is unnecessary in such cases to be so cautious about the dose.

Apomorphine acts as a hypnotic with the precision of clockwork. If the dose is properly adjusted the patient will fall into a sound and restful sleep in from five to twenty-five minutes, without nausea or other disagreeable sensations. If no results are obtained within half an hour after its administration, the dose was too small. It acts within that time if it acts at all. Vomiting indicates too large a dose. I have had two or three cases that required unusually large doses to produce sleep, and I further discovered that emesis could not be produced in those patients with any quantity, however large. Hypnotic doses slightly accelerated the heart's action in every case in which I have observed any change at all in the pulse.

The direct hypnotic action of apomorphine lasts apparently from one to two hours. But in many cases of insomnia the patient will sleep all night if he is only started right, and put promptly to sleep on going to bed. Such patients often require enormous quantities of the ordinary narcotic drugs to shut the world out from their consciousness and produce the first five minutes of sleep. Then they will sleep too heavily, and perhaps too long, awaking with the very disagreeable sensations that follow the excessive use of narcotics. Such sleep is but slightly preferable to insomnia.

But with apomorphine it is not so. It not only produces sleep more promptly and surely than any other safe remedy, but its sleep has all the appearance of a perfectly natural one, and in no case under my observation has it left on awaking any disagreeable results. Patients describe their sensations as like those following a normal and refreshing sleep. This remedy shuts off the "stream of consciousness" with valvelike precision, and when this is once done the patient will usually continue to sleep without further assistance till the demands of tired Nature are satisfied. If, however, in an aggravated case, something more is needed to produce an eight-hour sleep, a very moderate dose of some slower-acting hypnotic, given at the same time as the apomorphine, will usually be sufficient to hold the patient in sleep after the effect of the latter remedy has passed away. Apomorphine has no cumulative effects, and consequently may be repeated at short intervals, if necessary, without fear of unpleasant results.

There is no possibility of a "drug habit" being formed, as it becomes a vigorous emetic if the dose is increased to only a tenth of a grain.

Both as a hypnotic and an emetic it is thoroughly neutralized if dissolved in a saturated solution of boric acid. Failing to find any reference to this fact in medical literature, I conclude that it is unknown to the profession. Apomorphine does not long retain its strength in aqueous solution, and therefore should be freshly dissolved at the time it is used.

The following cases will illustrate its wide range of usefulness as a hypnotic:

Mr. M. is a stockbroker with large financial interests over which he worries. As a result he has attacks of excessive nervousness, when not only is sleep impossible, but even lying in bed, he tells me, becomes intolerable. One thirtieth of a grain of apomorphine, given hypodermically, always puts him to sleep in a few minutes without nausea, and on every such occasion he has slept till morning without the aid of other hypnotics.

Dr. C., a well-known physician, had been suffering for several weeks with an aggravated attack of insomnia. Although he and his *confrères* had exhausted their resources in attempting to relieve the condition, they had signally failed, and the patient was growing worse. The first night he spent at our sanitarium I treated him as follows: At 9 P. M. I gave him bromide of potassium and chloral, of each fifteen grains—a prescription in which he evidently had but little faith, as it had repeatedly failed to help him. I doubt myself if it was an important factor in the treatment. At 10 P. M. I gave him a hypodermic injection of a thirtieth of a grain of apomorphine, which put him to sleep in about twenty minutes, and he slept seven hours. It was the first sleep of any consequence that he had had in two weeks. I gave him this treatment two or three nights, till he had again acquired the sleeping habit. In a week he went home, apparently well. He has since reported that his sleep continues to be entirely satisfactory, and enthusiastically declares that I may quote him to any extent in praise of apomorphine as a hypnotic.

Mr. N., aged thirty-eight, has epilepsy, accompanied by the most violent post-epileptic delirium. The ordinary orthodox narcotics have little effect on him, the nervous tension and maniacal excitement continuing in spite of their repeated exhibition. I finally resorted to apomorphine, which put him to sleep in ten minutes, the sleep lasting two hours. On awaking he was entirely free from delirium. I have treated subsequent attacks with the same remedy and with the same results.

Mr. T., on October 8, 1898, had delirium tremens.

On arriving, I found three men were with difficulty holding him on the floor. I at once injected a little over a thirtieth of a grain of apomorphine, which did not cause vomiting, but apparently caused a little nausea. In less than ten minutes he was sleeping soundly. I directed that a pillow be placed under his head and a blanket thrown over him, and in that position he slept for about an hour. When he awoke the delirium had gone and he was perfectly manageable.

In hysteria it gives prompt relief, and the refreshing sleep thus induced may terminate the attack. In convulsions and as a general antispasmodic it ought to be equally useful.

Morphine patients, when suffering from the persistent insomnia that follows the withdrawal of that drug, are put to sleep with the same promptness and precision by the use of apomorphine. In fact, it is, in my experience, practically the only hypnotic that can always be relied on in such cases.

Narcotics and hypnotics are among the most important remedies known to medicine, and in calling the attention of the profession to these properties in apomorphine, I believe I have put into its hands perhaps the most valuable remedy of this valuable group.

THE WALTER BAKER SANITARIUM.

EXTENSIVE THROMBOSIS OF THE LATERAL SINUS AND INTERNAL JUGULAR VEIN FOLLOWING ACUTE SUPPURATIVE OTITIS MEDIA.

LIGATION OF THE INTERNAL JUGULAR VEIN IN ITS LOWER PORTION.

SECONDARY PERIPHLEBITIS. RECOVERY.*

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RECENT observations in a few complicated cases of suppurative middle-ear disease conclusively prove to me that external manifestations are no criterion to the extent of existing disease. Local symptoms, no doubt, augment the possibility of the presence of a pathological process, but the absence of these symptoms does not warrant the assumption that a diseased state can be ignored.

To corroborate this line of reasoning we need but recall to mind those cases of extensive disease of the mastoid that offer no other indication than an occasional attack of aural discharge, probably incited by a catarrhal exacerbation. The destruction of the osseous tissue goes on so insidiously that no discomfort is experienced by the patient until an acute change brings its disturbing influence.

In those mastoids where the cortex is unusually condensed, the suppurative invasion is forced to find an exit through the paths of lesser resistance. Cases of Bezold's mastoiditis have been reported in which no lesions were observed in the canal or middle ear, and yet considerable disease was found in the mastoid itself. Only recently, in operating for an acute mastoiditis, I found an external opening on the posterior border of the mastoid, in a direct diagonal line from the antrum, three quarters of an inch below its level. The posterior cells were much involved, while the anterior cells and tip were but slightly affected.

In children it is not unusual to find the mastoid perforated high up, thus permitting the pus to find its way through the fascia and muscles of this region until it appears above and in front of the auricle.

To further illustrate how uncertain the path of the pyogenic factor may prove to be, we need only recall those serious forms of complications (*a*) where the disease extends to the lateral sinus by way of its bony boundaries (which course it probably took in my case); (*b*) where the middle cerebral fossa is attacked through the tegmen tympani or (*c*) into the posterior cerebral fossa through a fistulous tract.

The early detection of pus in acute disease of the middle ear is most important. Here the infectious process extends very rapidly, and unless promptly checked it may reach beyond the limits of successful surgery. This practical fact was vividly brought to my attention in the case which I herewith report:

Julia La F., nineteen years of age, was seen for the first time at the Manhattan Eye and Ear Hospital on December 25, 1898.

For some days before her admission she had pain in the right ear, and was treated by a physician who prescribed some medication in the form of drops, together with hot douches. Perforation of the drum occurred and a free discharge was seen. Pain then extended over the entire head.

On the day of admission to the hospital Dr. Martin, the senior house surgeon, noted the following condition:

The right ear was discharging freely, and the left membrane was red and bulging. The girl had severe pain in both ears, over both mastoid and back of head. Dr. Martin incised the left drum, ordered hot douches continued, and ice coil to mastoids. Temperature was 101.5° F.; pulse, 108. Calomel was given internally until a decided effect resulted.

The patient passed a poor night, complaining of pain in the mastoid. This symptom was promptly relieved by reapplying the ice coil. Temperature had been 104° F. at six o'clock, December 27th, but fell to 99.8° F. The mastoid tenderness became less, but did not disappear entirely. The discharge from the right ear diminished in quantity, while no pus was noticed in the left canal. Variations of temperature occurred, and the opening in the right drum was enlarged, which was followed by an increased flow of pus and a gradual subsidence of the elevated temperature. About this time difficulty in swallowing was experienced, as if resulting from an amygdalitis. On examination, the right faucial space was found injected, but no definite lesion was observed. Pressure along the sterno-mastoid muscle showed tenderness, though no "cordlike feeling" could be discovered.

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* Read before the Harlem Medical Association and Otological Section of the New York Academy of Medicine, November, 1899.

On January 1st the patient had her first and only chill, which was followed by a rise of temperature to 104.8° F.; pulse, 152. The condition improved somewhat during the following days.

An examination of the eyes revealed some tortuosity of the retinal veins; a stiffness of the right shoulder and arm was also noticed by the house surgeon. The girl was inclined to somnolency, though responding readily to conversation. As tenderness along the sterno-mastoid still persisted, an operation was advised without further delay.

On January 5, 1899, the usual Schwartz opening was attempted, but after the second chip of bone was removed a non-pulsating, grayish-blue membrane appeared, which proved to be the sinus unusually superficial and anterior. At first it was thought to be the thickened lining of a large cell, but after removing the bony boundaries its identity was distinctly recognized. Finding some pus in the mastoid tip, this portion, together with the bony covering of the sinus, was removed until the jugular bulb was reached. Posteriorly the sinus was exposed for an inch.

No pulsation could be seen, so a small aspirating needle fitted to a hypodermic syringe was introduced into the middle portion of the exposed sinus, and a syringeful of fluid pus was withdrawn. This evidence was followed by an incision through the upper wall for three quarters of an inch in length. From this opening considerable pus escaped. No blood appeared until some degenerated thrombus was removed from the posterior portion of the sinus by means of a small wire curette. This instrument was introduced for fully an inch before a free flow of blood showed that the channel was cleared in this direction. A strip of iodoform gauze was used as a plug after sufficient bleeding had occurred. The curette was then applied at the other end of the sinus opening. Though quite a quantity of thrombus was removed in this manner from the region of the jugular bulb, no free blood flowed.

Realizing the seriousness of prolonged jugular thrombosis, I proceeded at once to tie the internal jugular vein as low down as feasible. The ligation was performed an inch above the clavicle. Some difficulty was experienced in reaching the vein, as it was very deeply situated. It was found external to and somewhat behind the artery. No pulsation was visible in the vein. Two ligatures were placed around the vessel, and the lowest one was tied securely. The upper ligature was applied in case of emergency, but was not tied.

No attempt to dissect out the vein was made. On cutting into the vessel pus escaped, so the vein was severed completely above the tied ligature and brought out of the neck wound.

I was not successful in my effort to flush out the jugular obstruction with the syringe through the mastoid opening, but did accomplish my object very satisfactorily by introducing the nozzle of the syringe into the cut-off end of the vein below and syringing upward. With but little pressure on the syringe, a long fibrinous mass came through the mastoid end of the vein, followed by some purulent fluid. After the second syringeful of boric-acid solution the fluid came away clear, proving a patulous condition of the vein. Finding no evidence of further extension of the suppurative process around the vein, a small-calibre rubber catheter was introduced into the lumen of the jugular for a short distance, and the wound was dressed, the catheter being kept outside of the wound and surrounded with sterilized gauze. The mastoid wound was packed in the usual manner with gauze strips in both ends of the open sinus.

Though lasting for over two hours, the anæsthesia was well borne, and my patient rallied from the operation in an agreeable manner.

For the following four days the temperature did not rise above 101° F. The wounds were dressed on the fourth day, and appeared in a nice, clean condition. Her general health was good. On January 9, 1899, swelling was noted external to the neck wound. It was tender to pressure, but no fluctuation could be discovered. During the following week the temperature showed a tendency to rise and fall at irregular intervals. On January 16th it reached 104° F. The tumefaction of the neck had extended below the clavicle and posteriorly to the outer margin of the platysma myoides muscle. The swelling was tender to the touch, but hard in consistence. No fluid could be detected, and no pointing was visible. The patient was again narcotized, and an exploratory incision was carried through the median area of what we thought was a cellulitis. No pus could be found, though various paths were made with the grooved director and probe. Owing to the establishment of the collateral circulation, a number of superficial and deep veins had to be ligated, as they bled considerably, being greatly enlarged. A diagnosis of periphlebitis was made. For the following two days a very profuse sero-sanguinolent fluid escaped from our second opening in the neck. The dressings were thoroughly saturated with the discharge.

On January 18th all the wounds were dressed and found very satisfactory, though the serous discharge still continued in great quantity. Dr. Dawbarn kindly saw the patient and suggested a wet dressing of a hot acetate-of-aluminum solution (saturated). This was applied for two days, but an unpleasant dermatitis set in, so the use of the solution was discontinued. Plain sterilized gauze was then employed. Gradually the serous fluid subsided, and on January 23d we noticed that the cervical swelling was becoming less, and our patient was progressing satisfactorily. During the following twenty-four hours the temperature did not rise above 99° F. From that date nothing interrupted a steady improvement, and my patient was permitted to sail for her home in Paris during the early part of March.

The points of interest in this unusual case are, first, the rapidity and extent of the complicating factors in an acute suppurative otitis media; secondly, the anomalous position of the lateral sinus, which, no doubt, accounts for the marked thrombosis of the sinus and internal jugular vein; thirdly, the secondary periphlebitis with the profuse sero-sanguinolent discharge; fourthly, but one chill with all this collection of septic matter in the circulatory channels; and, lastly and happily, the patient's ultimate recovery.

My experience in mastoid surgery warrants me in indorsing liberal incisions of the soft parts. They permit a satisfactory exposure of the bony structures and adjacent tissues, and augment the possibility of satisfactory technique.

38 East Sixtieth Street.

THE SO-CALLED X-RAY BURN.

By J. RUDIS-JICINSKY, A. M., M. D.,
CEDAR RAPIDS, IOWA.

THE so-called X-ray "burn" is nothing more than an acute, subacute, or chronic mortification or necrobiosis, due to prolonged exposure to Röntgen light. The X ray acts as an irritant, not only upon the skin but the tissues under. The irritation of the peripheral extremities of the sensory nerves causes a paralysis of the vasomotors of the vascular area affected, the spasmodic contraction of the arterioles and capillaries follows, and the proper nutrition of the cells is impaired. This seems to be *primum mobile.* There might be relaxation, but all the inflammatory phenomena are manifested not only at the focus of irritation, but spread perhaps over a large contiguous surface, due to communication to the vasomotor centre of the spinal cord, which is reflected over a wider vascular area. With these changes, which are directly dependent upon disturbances of the circulation, there are changes in the parenchyma cells and connective-tissue cells of the affected region. Death of tissue is caused by permanent stasis in the blood-vessels.

In this way, I think, a higher grade of anæmia develops locally, and from this and the status of the affected nerves and cells an acute mortification results. It is a nutritive disturbance, therefore, generally but not always symmetrical, and due to unnecessarily prolonged irritation.

The development of the symptoms of mortification locally may be sudden, or a few days or weeks after the exposure. There might be lancinating, peculiar pains, a sensation of heat or cold, prickling, sometimes anæsthesia and analgesia. The implicated areas may remain hyperæsthetic for a length of time with diffuse erythema or dermatitis. The process begins as a red spot with circumscribed macules or vesicles, vesico-pustule, or a pustule, accompanied by itching and burning. They rapidly develop and increase in size. The destruction of tissue is sometimes superficial, but more often through the entire cutis and even subcutaneous connective tissue, forming an *ulcer.* The tissues and effused grayish, necrotic matter about the focus of inflammation perish; the peripheral areas become vascularized and are finally converted into granulation. The capillary loops at the base of the ulcer may be red, bleed easily, and are very sensitive. A crust may form and be removed; the lesion may remain stationary. It takes time before a surface of healthy granulation is established.

From a clinical point of view we may usefully divide the cases in which the mortification appears in connection with the exposure to the X ray into three classes:

1. Simple superficial inflammation of the skin.

2. The acute attack upon the skin and deeper tissues, producing a partial effect upon the peripheral extremities of the vasomotors and spasmodic contraction of the blood-vessels, followed by immediate relaxation and renewed nutrition of the cells. Antiseptic treatment.

3. Sequela of an acute attack, with much destruction of the skin and tissues. In this, with more ulceration, there are more pain and tenderness, superadded to an increase of unhealthy granulation. It will not yield to any dressing. Cleanliness, local rest, and later on massage (twice daily) are of inestimable value in maintaining good circulation.

The current explanation of these phenomena is that there is always an excess of irritation, differing with each case and each exposure. This excess is variously explained: First, as being due to particles of platinum carried by the cathode ray through the tube, the air, the skin, and deeper tissues (Gilchrist). Secondly, that the injuries are caused chiefly by those rays of the X-ray order which are most readily absorbed by the flesh (Thompson).

However this may be, we find therein no explanation of the peculiar process of mortification; no pathology of the irritation followed by excessive and destructive inflammation. But one thing is sure: that this mortification is not a burn, which is usually defined as the disorganizing or destructive effect of the application of dry heat, flame, or sun; a scald being considered as the corresponding effect of the application of a hot liquid. Direct electrical burn occurs at all points of strong resistance externally; hence especially at the points of entrance and departure of the current. Such a burn consists of deep holes of various shapes, with clear-cut edges surrounded by an inflamed area, and containing in its cavity a mass of blackened tissue.

The destructive process upon the skin and tissues in prolonged exposures to the X ray is altogether different, as stated above. Various explanations have been offered of this curious fact, but none of the alleged reasons are satisfactory, and the question remains another X for speculation.

We all read about the risk of setting up X-ray dermatitis, etc., and know that the powerful X ray has an irritative influence upon tissue, causing inflammation of the conjunctivæ, lips, and of the skin of the face. This has been recorded by more than one experimenter as the result of exposure to the Röntgen ray.

Under the local rest treatment an acute attack will in due course begin to subside. The pain, tenderness, and redness will be less. If at this epoch the lesion be touched, it will be found that, although the ulcer looks better, this is not the case with the tenderness. Some spots will be found which are not in the least tender; others where the tenderness is intense and seems to be linear along the site of a nerve trunk which is distributed to the periphery affected.

What is in this nerve condition? The vasomotor fibres bear the brunt of the attack of irritation, with a corresponding contrast of the symptoms in the tissue cells. Is the nerve affection an atrophic neurosis?

Certainly it may well be assumed, especially if we take into consideration also the process of mortification in the cells of the tissues involved. Microscopical examination will show an inflammatory process with a development of fibrous tissue; the walls of the blood-vessels, especially the intima, thickened, and the lumina contracted; a thin layer of necrotic tissue at the base of the ulcer; various layers of connective tissue destroyed; also the nerves. In what order they are attacked is hard to say. Strange as it may seem, injured parts (fracture, etc.) are more susceptible, especially when there is something in the system which enfeebles the tissues and nerves and prevents those of the injured man resisting influences which healthy people, or indeed he himself, when free from injury, disease, etc., can and do encounter without any bad results.

With the better knowledge of the technique, better apparatus of to-day, and comparatively short exposures in the near future, the danger of irritation upon the exposed parts of the body to the X ray is much lessened, and the primary fault, being recognized, may be avoided.

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VARICOSE SPINAL VEINS.

AN UNUSUAL POST-MORTEM FIND.

By CLARENCE E. COON, M. D.,

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The patient was a man, aged fifty-eight, a commercial traveler, of good family history. His habits were good; he did not use tobacco and never drank to excess. Several years ago he had syphilis, but there had been no recent manifestations of this disease, and he was considered to be free from it.

For a number of years he had been troubled with a very chronic and obstinate constipation and large hæmorrhoidal masses. For about two years he had had a cystitis, dependent upon an enlarged prostate gland and consequent retention of urine; at various times there had been pus collections in the perinæum, which found exit usually through the urethra, once through the scrotum, where a sinus persisted until the time of his death. The internal saphenous vein of the right thigh and leg was enormously dilated and very tortuous, so much so that the mass over the internal surface of the right knee presented a tumorlike appearance; the veins of the left lower extremity were enlarged, but not to the same extent as those of the right.

For about fifteen years he had had excruciating shooting pains in the lower extremities. His description of the character of these pains was that sometimes for a short interval of time previous to the climax of the pain he could feel a drawing, puckering sensation in the part, then almost immediately the flash of agony, which lasted a fraction of a second, and then all was quiet and normal. At other times this tearing, boring pain would come without premonition, and he would grasp his thigh, if that happened to be the seat of the pain, and hold it in intense agony until the paroxysm was past. These pains were always much worse when he was tired, and especially when he had been standing or walking more than usual.

There were no surface indications to account in any degree for this trouble; there was no paralysis or incoordination of movement and no anæsthesia; patellar reflexes were a little exaggerated.

He made his trips on the road quite regularly up to March, 1899; after that time he remained at home. He was not confined to the house until about two months before his death, and to his bed only one month. During this time, while he was living quietly at home, it was noticed that the "nerve pains" were much less severe than formerly, and during the last of his illness, and while he was in bed, they were almost entirely absent.

In September, 1899, he suffered from herpes zoster on the right side, and the pain associated with this condition he described as quite similar to the pains he had had for a number of years, except that the zoster pains were much longer in duration.

From the history it will be seen that we had a man aged far beyond his years, whose vitality and powers of resistance to disease were much subnormal; and when in February, 1899, a troublesome cough appeared it was not long before great damage had been done by the tubercle bacilli, and this was the immediate cause of his death, which occurred on October 30, 1899. An autopsy was held. The patient was extremely emaciated and anæmic, and had the appearance of a man at least seventy years of age. An examination of the thoracic viscera showed that the whole upper lobe of the right lung was full of cavities, with pus everywhere. There was consolidation of the left apex and beginning pus formation. The remaining thoracic and abdominal viscera showed no gross lesions, but everywhere was the evidence of a lowered vital condition.

The dorsal and lumbar cord was exposed by removing the laminæ and spines of all these vertebræ. High up in the dorsal region there was a small area of congestion, which was extradural. At the junction of the dorsal and lumbar vertebra a broad purple line was seen through the dura; it was about three inches long, running parallel with the cord, and extending about an inch and a half in either direction from the upper surface of the first lumbar vertebra. The cord was removed from its canal, being cut at the upper extremity of the dorsal region and the dura mater removed. A portion of the posterior spinal vein was found to be much dilated and filled with very dark-colored venous blood. Above the dilatation, which terminated quite abruptly, the vein was small and hardly traceable on the posterior surface of the cord. The lower extremity of the dilatation was at the point where the vein emerged from the inner surface of the dura mater.

The length of this dilated portion was five centimetres, and its diameter, which was quite uniform, three millimetres.

On the anterior surface of the cord in the extreme lower lumbar region, and extending well down into the cauda equina, two dilated veins were found, of much smaller calibre than the posterior one; these veins communicated above with a single small anterior spinal vein.

Microscopic examination of sections of the mid-dorsal cord was made, but nothing abnormal was found.

The question arises, Could this varicose posterior spinal vein, pressing as it did upon the posterior spinal nerves, have been the cause of those shooting neuralgic pains of the lower extremities?

I have been unable to find a report of a similar case in the literature at my disposal. Hirt says, "There is no literature upon the subject of diseases of the blood-vessels of the spinal cord, and we know nothing about it."

From the history of the case and the condition found at the autopsy it seems at least possible, and I think even probable, that the large posterior vein was the cause of the shooting pains.

1. The lightning pains are among the early symptoms of a tumor pressing upon the posterior cord.
2. The location of the dilatation was such that it might account for pains in the lower extremities.
3. The pains were always much worse when the patient was tired and exhausted.
4. During the last few months of his life the pains were much less severe, and while confined to his bed, and thereby favoring in the best possible manner the return flow of venous blood, they almost entirely disappeared.

The absence of motor or other symptoms, which might have been caused by the dilated anterior veins, can be explained by the fact that they were situated in the cauda equina, and, on account of the large spinal canal in this region, the quite free movement of the nerve bundles, and the smaller calibre of the dilated veins, they did not exert sufficient pressure to cause any symptoms.

509 South Salma Street.

The Richmond, Virginia, Academy of Medicine and Surgery.—At the last regular meeting, held on Tuesday, March 13th, the subject for discussion was Gonorrhœal Urethritis in the Male, which was to be opened by Dr. Charles A. Labenberg.

Therapeutical Notes.

For Palmar Syphilis.—Ohmann-Dumesnil (*Bulletin de thérapeutique*, January 15th; *Lyon médical*, February 4th) gives the following prescriptions—the first to cure palmar psoriasis, the second to prevent its recurrence:

℞ Salicylic acid	18 grains;
Ichthyol	30 "
Cold cream	450 "

M.

℞ Calomel by vaporization	15 grains;
Cold cream	450 "

M.

With these ointments the patient rubs the palms each evening at bedtime, and wears gloves at night.

Ichthyol in Gynæcology.—Woyer (*Wiener medicinische Presse*, November 19, 1899; *International Medical Magazine*, February), after a thorough study of the reports of the use of ichthyol in gynæcological practice, considers that we have in this drug an incomparable antiphlogistic with a striking anodyne action. With regard to the conditions in which ichthyol has proved of the greatest service and the mode of application of the drug, the ichthyol-glycerin tampon has a prompt anodyne action in parametritis, in chronic pelvic cellulitis and peritonitis, and affections of the annexa. In these cases he also makes use of abdominal frictions of ichthyol-lanolin ointment. The drug is of benefit in inoperable uterine cancer, diminishing the exudate and quieting the pain, as well as exerting a deodorizing action. In fact, he considers that ichthyol is nothing less than a specific for parametric pain.

Hydrochloric Acid in Dyspepsia.—At a recent meeting of the Paris Society of Therapeutics (*Presse médicale*, December 16th) M. Huchard said that in cases in which hydrochloric acid was indicated he gave it in the following formula:

℞ Hydrochloric acid	50 parts;
Curaçao	100 "
Water	400 "

M. A sherry glassful to be taken after each meal.

Subcutaneous Injections in the Treatment of Tinea.—*Riforma medica* for February 10th ascribes the following to Du Castel:

℞ Corrosive sublimate	$\frac{15}{100}$ of a grain;
Tartaric acid	6 grains;
Hydrochloride of cocaine	15 "
Alcohol, Distilled water, } of each	450 "

M.

One drop is injected into various spots, the hairs having first been removed and the skin scraped.

Ichthyol in the Treatment of Fissure of the Anus.—Conitzer, of Hamburg (*Münchener medicinische Wochenschrift*, 1899, No. 3; *Centralblatt für Gynäkologie*, December 30, 1899), reports a number of extraordinarily favorable results. At the first application the fissure is anæsthetized with cocaine, and pure ichthyol is applied with a bit of cotton or a glass rod. For subsequent applications, which are made every other day, anæsthesia is generally unnecessary. Cicatrization is usually very rapid, and stretching of the sphincter is not necessary. Of course, the bowels must be kept free.

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THE POOR POITRINAIRE.

A man of wealth who finds himself tuberculous and is sent to the Adirondacks, to Colorado, to North Carolina, or to some other region favorable for his recovery has before him a comparatively bearable prospect. He has only his disease to struggle against, and with a fair probability of his getting rid of it. If he is one of those who, having recovered their health, still find themselves unable to escape further attacks of the disease if they return to city life for any considerable length of time, and if at the same time he is a man of earnest purpose, no doubt he feels a pang at being obliged to give up his cherished pursuits for a long term of years, if not for good, but his misfortune is as nothing compared with that of a poor man under like circumstances. It is a serious enough matter for a man who has to work for a living, and perhaps for the maintenance of a family, to relinquish his source of income even for a few months, but it is an appalling situation that he has to face when he finds that he must give it up for good. To provide sanitaria for the free treatment of poor consumptives is a good work, but to enable them to earn their living without returning to shop life or office life is one almost as imperatively called for.

Fortunately, the proportion of pulmonary invalids who can not with impunity resume work after a few months of open-air treatment is small. This has been shown very clearly in the experience of a colossal German health insurance company, the Hanseatic, which finds it to its advantage to maintain a number of rural sanitaria, some of them at great expense. M. Gilbert Sersiron has made this experience the subject of an interesting article which appeared in the *Presse médicale* for February 3d. Statistics concerning the patients treated for three months in the company's institutions have been collected annually (in the company's interest) by Dr. Prédöhl and Dr. Reiche, of Hamburg, and Dr. Gebhard, the company's chief medical officer, has furnished M. Sersiron with an analysis of them. It appears from these reports that, of 1,231 consumptive patients, including factory workers, house painters, tailors, seamstresses, children's nurses, shop girls, domestic servants, and other working people, 190 have died, 107 have been incapable of work, 847 have been at work again for periods ranging from a year to over four years, and 87 have been lost sight of.

This is certainly an encouraging picture. If three months' open-air treatment will accomplish the practical cure of so large a proportion of pulmonary invalids—cure in the sense of the subjects' being able to return to their ordinary work—the sooner we have numerous free sanitaria the better. Probably, however, there will always be a certain number of recoveries from tuberculous disease that are not of a character to admit of the resumption of city life and continuous work, and doubtless many persons who can not take up such a life again might still be rendered self-supporting if work could be found for them to do in the salubrious localities where their disease has been checked. Prisoners are kept profitably employed, and so are epileptics. It seems as if our civilization ought to be equal to the task of providing employment for a man who is able to work, but not able to return to his former abode.

INFORMATION *VERSUS* EDUCATION.

Professor Macgregor, according to an editorial in the *British Medical Journal* for January 15th, declares, in an introductory address recently delivered at Dalhousie College, Nova Scotia, and published in *Nature* for December 4, 1899, that the present systems of science teaching are not a training in common sense, but are mere book work. There is no scope, even in their practical part, for anything but dexterity. The student does not find out things, he is shown them, and he remains as childish and helpless as before. His real training does not begin until he is delivered from his teachers and thrown upon his own resources. As a matter of training of the faculties, the professor considers the proper study of the dead languages, unaided by masters or cribs, and as little as possible by dictionaries, the student being compelled to wrestle with the difficulties of interpretation for himself, a better discipline than the scientific education born in modern times; and in support of this opinion he cites the experience of the German universities, which after a ten-years trial have agreed that the training of the *Real Schule*, which is largely scientific, does not fit men for university education, even of the scientific sort, so well as the teaching of the chiefly classical gymnasium. To raise scientific training from the level of the mere acquisition of information to that of education, Professor Macgregor recommends that all teachers should be engaged in original research, their pupils being trained under them to assist in this work. By this means the power of "knowledge-making," the art of drawing conclusions correctly for one's self, which constitutes real education, would be acquired, and the knowledge so gained would lay the track for further development. The difference between the collection of information and the education of the individual, we would point out, may be compared to that between the sending of a caravan with merchandise and the construction of a railroad. The same journey has to be traversed in each case, but when the caravan has arrived at its destination and deposited its wares, there is just the same work to be gone through again to forward the next supply. The railway, however, helps to construct itself as it goes, and when the first train laden with merchandise has arrived at its objective, succeeding supplies become easier and easier. Difficulties are overcome once for all, and each stage accomplished forms a starting point for further extensions.

We agree entirely with Professor Macgregor, and we may repeat to our younger readers—many of their elders will remember it—a pithy remark in which the late Professor Robert Watts, of the College of Physicians and Surgeons, summed up the matter. Education, he said, was the process of teaching a person how to study to the best advantage.

THE RAT IN THE ÆTIOLOGY OF DISEASE.

It is not alone as a disseminator of the Oriental plague that the rat is to be dreaded. A peculiar disease (*die Rattenbisskrankheit*) has recently been described by Dr. Miyake (*Mittheilungen aus den Grenzgebieten der Medicin und Chirurgie*, v, 2; *Centralblatt für Chirurgie*, February 3d), who gives the histories of eleven cases. It is no particular kind of rat that does the mischief; the ordinary rat that infests dwellings is the animal whose bite conveys the disease, although in one instance it was a weasel. It is not known whether or not the contagium is a micro-organism, but it must be a specific material. Little is known of the pathological anatomy, as only one necropsy has been made.

There is a period of incubation of from one to three weeks' duration. Then the site of the bite, which has often healed, shows phlegmonous swelling, and the lymphatic vessels and glands connected with it become swollen. Chills or chilly sensations usher in a fever of an intermittent character, in which the temperature may exceed 104° F. The onset of the fever is accompanied with malaise, pains in the limbs, rheumatoid muscular pains, nausea, headache, thirst, and a feeling of anxiety, and in exceptional cases with delirium, hallucinations, and coma. The patients are rapidly prostrated, and often there is sensory or motor paralysis. There is a characteristic erythematous or papular exanthem on the trunk and the limbs. The disease lasts for months, sometimes six months or more, and ten per cent. of those attacked with it die. None but symptomatic treatment has thus far been attempted, but cauterization of the bite, either with the Paquelin cautery or by the injection of carbolic acid, practised as soon as possible, is very effective as a prophylactic; not one of ten rat-bitten persons so treated by the author had the disease.

As our readers are aware, the general destruction of rats, especially on ships, has of late received much attention, as a measure to be adopted in the prophylaxis of the plague. If the *Rattenbisskrankheit* proves capable of spreading extensively, the extermination of rats will be called for in regions far removed from the present scenes of the plague.

A HOROLOGICAL NOMENCLATURE OF ANAL FISTULÆ.

We have always objected to classifying versions of the uterus as of the first degree, of the second degree, etc., but we must admit the ingenuity of a scheme hit upon by the surgeons of St. Mark's Hospital, London, for designating the situation of the external opening of an anal fistula, as described by a correspondent of the *Presse médicale* in a communication published in that journal for January 24th. The numerals that stand for the twelve hours are imagined to be arranged around the anus after the pattern of a dial, xii being situated in the perineal rhaphe, vi at the tip of the coccyx, and so on. By this plan a fistulous opening lying a little to the right of the median line and in front of the anus is tersely termed an eleven o'clock fistula, a one o'clock fistula opens at a corresponding point on the left side, and other hour marks do duty in like manner. It must save a good deal of talk.

THE *BIBLIOGRAPHIA MEDICA*.

At length M. Marcel Baudouin's energy has accomplished the establishment of this long-expected supplement to our discontinued *Index Medicus*. The first number is dated January, 1890, and it is to be issued monthly. In arrangement and general appearance it closely resembles the old *Index Medicus*, and, indeed, that is its secondary title. We hope it will be well supported.

AN APHASIC PERSON'S WILL.

Difficulty has before now been encountered in ascertaining how an aphasic person wished to bequeath his property. In a case mentioned in the *British Medical Journal* for February 17th the task was accomplished in a most simple but highly ingenious way by the testatrix's physician, Dr. James Edmunds. On a set of cards he wrote the titles of various pieces of the lady's property, and on another set he wrote the names of her relatives. Then the solicitor, as reported in the *Times*, "put down a card bearing the name of a certain estate, and the testatrix, after looking through her pack of relatives, played a name, and the solicitor then turned the trick." It was not so easy to learn the lady's mind as to the choice of an executor, but she finally played a card bearing the name of a relative, and that person was named in the will, which, having been read to the testatrix, received her signature and was duly admitted to probate. It was judicially pointed out, however, that had the name of any relative been omitted, or any failure been made to ascertain the testatrix's full wishes, the legality of the will might have been contested successfully.

AN ARMY DENTAL SURGEON FOR THE BRITISH FORCES.

We learn from the *Lancet* for February 17th that Mr. F. Newland-Pedley has been appointed dental surgeon to the Imperial Yeomanry Hospital in South Africa. In discussing his appointment, Mr. Pedley says: "A dental surgeon would be very useful as a consultant, especially in cases of fractured mandible, but his services are not less required by thousands of patients who must be suffering from neuralgia, tooth abscess, and diseases of the jaw consequent upon a life of exposure in a climate where sudden changes of temperature are common. I read that at the Modder River there are more complaints about dental suffering than about typhoid fever and dysentery. One feels compelled to face the question, 'What can one dental surgeon do for an army?' Of course, all that he can do is to go prepared for any work that falls to his lot, leaving the extent of his duty to shape its own course." Mr. Pedley has arranged for a supply of skilled assistants, qualified men and senior students, who would be ready to start at short notice should they be called upon. The Royal College of Surgeons of England has consented to recognize six months' service in hospital at the seat of war as the equivalent of the ordinary curriculum, provided the student produces satisfactory evidence concerning the manner in which the time has been spent. We consider this an agreeable and unexpected sign of progressiveness in officialdom across the water.

SIR MICHAEL FOSTER, M.P.

We are glad to learn from the *Illustrated London News* for February 24th that Professor Sir Michael Foster was elected by a large majority as the representative in Parliament of the London University. Men of Professor Foster's calibre are needed in every deliberative and legislative assembly, and the more of them find their way there the better.

ABUNDANT LIQUIDS AND WHITE MEATS IN INTERSTITIAL NEPHRITIS.

Professor C. von Nooden (*Presse médicale de Paris; Revue médicale*, February 7th) traverses the common opinion as to the advantages of abundant liquids and white meats in interstitial nephritis. His own experience leads him to the conclusion that abundant liquids are useless at the onset of the disease, and directly injurious when cardiac accidents are present, from the extra work imposed by them upon the heart. In the case of a man, forty-five years of age, suffering from interstitial nephritis, with left cardiac dilatation and albuminuric retinitis, who was accustomed to drink from three to four quarts of liquid daily, M. von Nooden cut down the amount of fluid (leaving the choice of its character to the patient) to a little over a quart, with the result that in a few days his cardiac troubles diminished considerably. This amelioration rapidly increased, and for four years the patient's symptoms have been absent, while the albuminuria has remained *in statu quo*. As to the proscription of red meats for subjects of Bright's disease, M. von Nooden has satisfied himself by actual experimental evidence that the quantity of albumin remains unaffected, whether red or white meats are taken, and, if for no other reason than avoiding the anorexia consequent on monotony, he allows the use of the red meat. The theory that red meat contains more extractives than white meat, capable of irritating the kidney, his researches satisfy him is untrue.

ALCOHOLIC CIRRHOSIS OF THE LIVER IN A BABY.

It is not often that alcoholic cirrhosis of the liver is manifested in a child so young as in a case recently presented by Dr. R. Abrahams (*Pædiatrics*, February) to the New York County Medical Association; indeed, there are many authorities who doubt its occurrence in the very young altogether. The case in point appears, however, to be unmistakably of that nature. The infant was a girl, sixteen months old, who up to the age of fourteen months had had good health. She then sickened with symptoms of intestinal derangement, which continued till the progressive increase of the abdomen caused the mother to seek medical aid. The abdominal distention was very great, the skin being stretched, glossy, and resistant. There was no œdema of face or limbs. Enlarged superficial veins over the epigastric region and protrusion of the navel were present. Syphilis, tuberculous peritonitis, carcinoma, cardiac and pulmonary disease, and interstitial nephritis were all excluded, as was also malarial disease, and the diagnosis of cirrhosis of the liver was made, though, owing to the distended belly, neither liver nor spleen could be palpated. Inquiry elicited the fact that from early infancy the child had been accustomed to drink a glass of lager beer daily in the belief that her nutrition and development would be benefited thereby. Medicinal treatment failing, paracentesis was performed, and over a quart of serum was withdrawn, with great relief to the patient. This enabled palpation to detect the facts that the liver was smooth and hard and extended down almost to the crest of the ilium. Six weeks later there was no recurrence of the ascites and the liver was becoming smaller. It seems incredible that any parent possessed of even moderate intelligence should make so lamentable an error, but the fact only emphasizes the necessity of investigating in any direction to which indications may point, however improbable or absurd the physician's suspicion may seem.

THE PLAGUE IN SAN FRANCISCO.

We had private information early in the week that the Oriental plague had made its appearance in San Francisco in the quarter commonly known as Chinatown, and this information has since been corroborated in press dispatches. As to the details, however, there is a good deal lacking. We are not told, for example, whence or by what conveyance the disease reached our Pacific coast or what steps have been taken to guard against its spread, but our reliance on the Marine-Hospital Service is so firm that we look confidently to see efficient measures taken to accomplish the purpose. We look also for zealous and intelligent cooperation on the part of the people of San Francisco.

THE LAY MISUSE OF IRONICAL MEDICAL REMARKS.

AN esteemed correspondent calls attention to the risk of publishing in medical journals communications which, although manifestly ironical, may be turned to commercial account by persons who profess to take them seriously. He relates this example: One day a man presented himself at a New York clinic with alopecia areata which had robbed his whole scalp of its hair. After a few months of treatment barren of results the man discontinued his attendance. Some time afterward the natural tendency of the disease toward spontaneous recovery was manifested in a scanty diffuse growth of lanugo. This presage of returning luxuriance of hair the man imputed to some concoction that he himself had devised, and with an air of pride and importance he presented himself again at the clinic, announcing that he had made a wonderful discovery. In an ironical manner the lecturer replied: "I congratulate you on your, indeed, wonderful discovery." This was appreciated by the medical men present, but the discoverer bowed himself out with an expression of the greatest satisfaction. About a month later our correspondent saw a large sign on the Bowery reading: "——'s wonderful discovery for baldness. Highly recommended before the New York Polyclinic."

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported for the two weeks ending March 10, 1900:

DISEASES.	Week ending Mar. 3.		Week ending Mar. 10.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	7	3	13	6
Scarlet fever	160	23	174	19
Cerebro-spinal meningitis	0	7	0	6
Measles	818	33	874	30
Diphtheria	262	54	264	46
Laryngeal diphtheria (croup)	21	13	14	7
Tuberculosis	193	171	223	163
Chicken-pox	17	0	25	0

The Buffalo Academy of Medicine.—At the last regular meeting of the Section in Ophthalmology, Otology, and Laryngology, on Monday, the 12th inst., Dr. Lucien Howe was to read a paper on Outdoor Relief for Eye and Ear Cases, and Dr. F. W. Hinkel was to exhibit a case of chronic suppuration of the middle ear, treated by the Stacke mastoid operation three weeks before; also a case of chronic empyema of the nasal accessory sinuses in which the antrum, frontal sinus, ethmoid cells, and sphenoidal sinus had been opened.

At a meeting of the Section in Medicine, held on Tuesday, March 13th, a paper on Senile Bronchitis was to be read by Dr. Reynold W. Wilcox, of New York.

Marine-Hospital Service Health Reports.—The following cases of small-pox, yellow fever, cholera, and plague were reported to the surgeon-general during the week ending March 10, 1900:

Small-pox—United States.

Searcy, Ark	Dec. 25–Feb. 27	40 cases.	
Aurora, Ill	Feb. 17–Mar. 3	4 “	
Chicago, Ill	Feb. 24–Mar. 3	1 case.	
Covington, Ky	Feb. 24–Mar. 3	5 cases.	
New Orleans, La	Feb. 24–Mar. 3	61 “	12 deaths
Detroit, Mich	Feb. 17–24	1 case.	
Detroit, Mich	Feb. 24–Mar. 3	11 cases.	
Minneapolis, Minn	Feb. 17–24	11 “	1 death.
Cleveland, Ohio	Feb. 24–Mar. 3	26 “	
Philadelphia, Pa	Feb. 24–Mar. 3	3 “	
Nashville, Tenn	Feb. 24–Mar. 3	1 case.	
For the State—Texas	Feb. 21–28	142 cases,	3 deaths
Salt Lake City, Utah	Feb. 24–Mar. 3	1 case.	
Portsmouth, Va	Feb. 24–Mar. 3	3 cases.	
Roanoke, Va	Feb. 1–28	7 “	
Tacoma, Wash	Feb. 18–24	13 “	
Buckhannon, W. Va	Feb. 9	Present.	
Calhoun County, W. Va	Feb. 9	“	
Camden on the Gauley, W. Va	Feb. 9	“	
Fayette County, W. Va	Feb. 9	“	
Gilmer County, W. Va	Feb. 9	“	
Lewis County, W. Va	Feb. 9	“	
Harrison County, W. Va	Feb. 9	“	

Small-pox—Foreign.

Prague, Bohemia	Feb. 3–10	6 cases.	
Antwerp, Belgium	Feb. 3–10	3 “	1 death.
Ghent, Belgium	Feb. 3–10		2 deaths
Amherstburg, Canada	Feb. 24–Mar. 3	3 “	
Quebec, Canada	Feb. 15–22	11 “	
London, England	Feb. 3–17	25 “	
Gibraltar	Feb. 4–11	1 case.	
Athens, Greece	Feb. 3–10	2 cases.	
Bombay, India	Jan. 30		715 deaths.
Calcutta, India	Jan. 13–20		7 “
Madras, India	Jan. 27–Feb. 2		3 “
Vera Cruz, Mexico	Feb. 17–24		2 “
Moscow, Russia	Jan. 27–Feb. 3	4 “	1 death.
Odessa, Russia	Feb. 3–10	10 “	2 deaths.
St. Petersburg, Russia	Jan. 27–Feb. 17	63 “	18 “
Warsaw, Russia	Jan. 27–Feb. 10		5 “
Corunna, Spain	Feb. 10–17	6 “	4 “
Straits Settlements, Singapore	Jan. 13–20		1 death
Constantinople, Turkey	Feb. 5–15		1 “

Yellow Fever—Foreign.

Santos, Brazil	Jan. 29	Increasing.	
São Paulo, Brazil	Jan. 29	“	
Havana, Cuba	Feb. 10–17	9 cases,	4 deaths.
Matanzas, Cuba	Feb. 10–17		1 death.
Vera Cruz, Mexico	Feb. 17–24		1 “

Cholera.

Bombay, India	Jan. 23–30		9 deaths.
Calcutta, India	Jan. 13–20		21 “

Plague—Insular Possessions United States.

Honolulu, Hawaii	Feb. 10–19		5 deaths.
Kahului, Hawaii	Feb. 13	3 cases.	
Manila, Philippine Islands	Jan. 13–20	4 “	3 “
Manila, Philippine Islands	Total to date	16 “	12 “

Plague—Foreign.

Bombay, India	Jan. 16–30		872 deaths.
Calcutta, India	Jan. 13–20		56 “

The Medical Society of the State of North Carolina will meet in Tarboro, on Tuesday and Wednesday, May 22d and 23d, under the presidency of Dr. George W. Long, of Statesville. The board of medical examiners will meet on Wednesday, May 16th, and will make their report before the adjournment of the society. The annual discussion will be held on the afternoon of the second day, Wednesday, May 23d, the subject being the Continued Fevers of North Carolina, led by Dr. James M. Parrot, of Kinston. On Wednesday evening, May 23d, the annual essay will be read by Dr. R. H. Whitehead, of Chapel Hill, and the annual oration delivered by Dr. T. S. McMullan, of Hertford.

The Medical Society of City Hospital Alumni, St. Louis.—The programme for the meeting of Thursday evening, March 15th, included the following papers: The Action of the Galvanic Current upon Animal Tissue, by Dr. T. Kodis; and A Report of a Case of Cyst of the Free Margin of the Vocal Cord, by Dr. Greenfield Sluder.

The Western Ophthalmological and Otolaryngological Association will hold its next annual meeting in St. Louis, on April 5th, 6th, and 7th.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending March 10, 1900:*

Wise, J. C., Medical Director. Commissioned medical director from February 7, 1900.

Derr, E. Z., Medical Inspector. Commissioned medical inspector from February 7, 1900.

Crandall, R. P., Surgeon. Commissioned surgeon from September 24, 1899.

Kennedy, J. T., Assistant Surgeon. Appointed assistant surgeon.

Harmon, G. E. H., Medical Inspector. Detached from the *Baltimore* and ordered to the *Oregon*.

Stephenson, F. B., Surgeon. Detached from the *Oregon* and ordered to the *Baltimore*.

Grove, W. B., Assistant Surgeon. Detached from the *Brooklyn* and ordered to the *Baltimore*.

Haas, H. H., Assistant Surgeon. Detached from the *Brooklyn* and ordered to such other duty as the commander-in-chief of the Asiatic station may assign.

Rosenbleuth, J. C., Passed Assistant Surgeon. Detached from the naval recruiting rendezvous, New Orleans, Louisiana, and ordered home and to wait orders.

McCullogh, F. E., Assistant Surgeon. Detached from the *Nero*, when put out of commission, and ordered to temporary duty on the *Independence*.

Hurd, I. N., Pharmacist. Ordered to additional duty on the *Massasoit*, Key West, Florida.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the United States Marine-Hospital Service for the Seven Days ending March 8, 1900:*

Mead, F. W., Surgeon. Upon expiration of leave of absence, to proceed to New York and assume charge of the Purveying Depot during absence of Surgeon C. E. Banks.

Banks, C. E., Surgeon. Granted leave of absence for seven days from March 6th.

Kalloch, P. C., Surgeon. To proceed to Mobile, Alabama, for special temporary duty.

Glennan, A. H., Surgeon. To proceed to San Francisco, California, for special temporary duty.

Perry, T. B., Passed Assistant Surgeon. To proceed to Atlanta and report to the governor of Georgia for temporary duty.

Guitéras, G. M., Passed Assistant Surgeon. Relieved from duty at Matanzas and detailed as quarantine officer at the port of Cienfuegos, Cuba.

Brown, B. W., Passed Assistant Surgeon. Upon being relieved from duty at the Cape Fear Quarantine Station, to proceed to Cape Charles Quarantine and assume command of the service.

Cumming, H. S., Passed Assistant Surgeon. To report at Washington, D. C., for special temporary duty.

Von Ezdorf, R. H., Assistant Surgeon. Relieved from duty at Atlanta, Georgia, and directed to rejoin station at New Orleans, Louisiana.

McClintic, T. B., Assistant Surgeon. Relieved from duty at Cape Charles Quarantine Station and directed to proceed to Cape Fear Quarantine, Southport, North Carolina, and assume command of the service.

Trotter, F. E., Assistant Surgeon. Relieved from duty at Havana and detailed as quarantine officer at the port of Matanzas, Cuba.

Schereschewsky, J. W., Assistant Surgeon. Relieved from duty at the Immigration Depot, New York, and directed to proceed to Havana, Cuba, and report to Surgeon H. R. Carter for duty.

Lord, C. E. D., Assistant Surgeon. Relieved from duty at the port of New York (Stapleton) and directed to report to Surgeon L. L. Williams, Immigration Depot, New York, for duty.

Wilson, R. L., Assistant Surgeon. Granted leave of absence for twenty-one days from June 14th.

Bailey, C. W., Acting Assistant Surgeon. Granted leave of absence for seven days.

Ballard, J. C., Acting Assistant Surgeon. Granted leave of absence for four days from April 17th.

Pith of Current Literature.

The Journal of the American Medical Association, March 3, 1900.

Ureteral Calculus; its Diagnosis by Means of the Wax-tipped Bougie after Dilatation of the Ureteral Orifice. By Dr. Howard A. Kelly.—In a case of renal calculus impacted in the ureter and causing a hydroureter and a hydronephrosis, the writer dilated the constricted vesical orifice of the ureter with his ureteral dilators. A wax-tipped bougie was then passed up the ureter, and from the presence of definite scratch marks on the wax (when examined with a lens) a diagnosis of impacted calculus was made. The calculus was passed spontaneously some hours later, but the writer describes a pair of delicate ureteral alligator forceps to be used in such cases.

Value of Formaldehyde in the Disinfection of Buildings, Rooms, and Cars. By Dr. John E. Owens.—The writer strongly recommends the disinfection of rooms, cars, etc., by means of spraying commercial formaldehyde solution upon suspended sheets, the method recommended by the Chicago Board of Health. He describes a series of experiments in which various pathogenic bacteria were killed by this method of disinfection, even anthrax spores being deprived of life by an exposure of five hours and a half. Appended to the article are the rules of the Illinois Central Railroad

Company in regard to this method of ear sterilization and disinfection.

Simple Device for Hypodermoclysis in Combating Shock. By Dr. E. O'N. Kane.—Dr. Kane describes a simple and easily constructed device for rapid hypodermoclysis, consisting of a number of hypodermic needles at the ends of rubber tubes, which tubes unite and lead to a reservoir containing salt solution. The needles are inserted under the skin at various points of the body, the fluid being conducted by siphonage and the pressure being regulated by raising or lowering the reservoir. An apparatus with four needles is usually capable of introducing three quarts of solution under the tissues in half an hour.

Two Hundred and Twenty Cases of Hæmorrhoids Operated on Successfully by the Ligature Method. By Dr. Joseph B. Bacon.—The writer reports a series of two hundred and twenty consecutive cases of hæmorrhoids operated upon successfully. In only one case was there any complication (secondary hæmorrhage). The writer gives the various steps of the operation in detail, emphasizing the following points: 1. The ligatures should not be too coarse and should be tight. 2. Serious hæmorrhage can take place without external evidence, and the general symptoms of hæmorrhage should be looked for after each stool until all the ligatures have been passed. 3. In removing ligatures, have a good light, and always cut the ligature, thus avoiding any disturbance of the organized clot. 4. In case of hæmorrhage the bleeding points are readily accessible and can be picked up with forceps or tamponed, the tampon being retained by the grasp of the internal sphincter.

Two Practical Points in Care of the Tubercular. By Dr. William Porter.—The writer does not believe that change of climate is necessary in the treatment of a majority of cases of pulmonary tuberculosis, and thinks the best results are obtained by home or sanatorium treatment combined with careful medication. The two practical points he dwells on are (1) feeble heart action, which he states is the rule in this disease and for which he uses small doses of digitalis with a little strychnine. (2) The importance of keeping the lower bowel well emptied, in order to avoid self-intoxication and self-infection. He recommends the use of mild salines with a high enema once or twice a week.

Chancre of Lip in a Child Seven Months Old, probably Acquired through a Feeding Bottle. By Dr. L. Duncan Bulkley.—The writer reports the case of a child seven months old with a typical syphilitic eruption. On account of the splendid condition of the child, hereditary syphilis was ruled out and an extragenital lesion sought for; this was found in a chancre of the lip of four weeks' duration. The parents of the child gave no history nor evidences of syphilis. It was concluded that the child was infected from the nipple of the nursing bottle, some syphilitic friend of the parents having put the bottle to their lips to see if the milk was in proper condition.

The Journal of the American Medical Association, March 10, 1900.

Some Points in the Diagnosis of Traumatic Injuries of the Central Nervous System. By Dr. J. T. Eskridge.

Treatment in Compound, Compound Comminuted, and Non-union or Ununited Fractures. By Dr. C. D. Evans.

Treatment of Minor Traumatisms.—Dr. R. Harvey Reed lays particular stress upon the necessity of strict antisepsis, and gives instances where the neglect of it has produced serious results in trivial injuries. It is important to treat even the smallest minor injury in this respect with the same precaution as though it were a major one.

A Contribution to the Surgery of the Common Bile Duct. Report of a Case of Choledochenterostomy. By Dr. John E. Summers, Jr.

Hysteric Lethargy, with Report of Cases. By Dr. George W. McCaskey.

Nervous Depression as a Sequel of Influenza. By Dr. B. J. Byrne.—The most remarkable and probably the most important of any of the phenomena attending this depression "are the subnormal temperature and the reduced pulse rate"—phenomena which he has known in cases to persist for weeks and months. Medical treatment was rather unsatisfactory. Some benefit was derived from the cold bath. Entire rest seemed to be the appropriate treatment.

Treatment of a Common Cold. By Dr. Frank Woodbury.—He believes that the "neurotic element in a 'common cold' has been too largely ignored in the plans of treatment usually followed." With a view of acting on this neurotic element he advises a combination of acetanilide, bromide of sodium, and compound morphine powder of the *United States Pharmacopœia*. "This usually breaks up an ordinary cold in a few hours."

Dangerous Pulmonary Hæmorrhage in Tuberculosis, and its Management. By Dr. Norman Bridge.—In severe hæmorrhage he advises (1) rest, (2) quiet breathing, and suggests that quiescence of lung tissue would be facilitated by the injection of nitrogen gas into the cavity (Murphy). (3) Loosen the bowels. (4) Keep extremities warm. (5) Avoid nervousness or fear of calamity by morphine and atropine hypodermically. (6) If heart beats violently, aconite and veratrum may be used. (7) Reduce blood pressure in chest by dilating vessels of extremities by (*a*) morphine and atropine, (*b*) tightly drawn cinctures about the limbs at their junction with the body.

Medication through the stomach he considers unadvisable, and as to ergot, "why the profession will continue to use the drug, with the common knowledge of its physiological action, is past understanding."

An Intestinal Anastomosis in a Case of a Tubercular Fæcal Fistula of Twenty Years' Standing. By Dr. Jacob Frank.

Description of a Case of Oral Surgery. By Dr. G. V. I. Brown.

Hygiene of Public Schools. By Dr. C. F. Ulrich.

Insanity and the Turkish Bath. By Dr. Charles H. Shepard.

Medical Record, March 10, 1900.

Progress and Drift of Pathology. By Dr. T. Mitchell Prudden.

Cystitis Due to the Typhoid Bacillus Introduced by Catheter in a Patient not having Typhoid Fever. By Dr. Thomas R. Brown.

A Means of Accounting for Gauze Laparotomy Pads. By Dr. Victor Cox Pedersen.

The Inoculation Wound of Lues. By Dr. Charles Warrenne Allen.

Historical Notes on the Sanitarium Treatment of Alcoholism. By Dr. Charles J. Douglas.

An Interesting Case of Labor Complicated by Utero-abdominal Fistula. By Dr. Joseph M. Rector.

A Remarkable Case of Chloral Poisoning. By Dr. Philip F. Rogers.

Medical News, March 10, 1900.

Recent Methods in Cardiac Therapeutics by Baths and Exercises. By Dr. Thomas E. Satterthwaite.

Milk Inspection by the New York Board of Health. By Dr. Herman Betz.—A review of the system. Gratification is expressed that the department's methods have been such as to secure not only the confidence of the dealers, but also the intelligent cooperation of the city magistrates. The arrangement by means of which the department is notified immediately of the presence of any contagious or infectious disease in the milk-supplying regions "has on several occasions been of the greatest service in preventing the spread of disease."

Surgery of the Epiphyses. By Dr. Charles L. Scudder.—"Many of the epiphyseal separations are mistaken for fractures in the neighborhood of the epiphyses." The Röntgen ray, however, makes diagnosis less doubtful. Along with this accuracy of diagnosis comes obligation to correct deformity. "This obligation, because of perfection of aseptic technic, necessitates the open incision of many closed fractures and epiphyseal separations." Four illustrative cases follow.

A Unique Case in Obstetrics. By Dr. Frederick H. Parker.—Case of a woman who complained that, five or six weeks after her normal confinement, menstruation had ceased, but was renewed with a *profuse flow* six or seven months subsequently, and continued regular until the next confinement, which took place two years after the first. Twenty-four hours previous to this last confinement the skin and skeleton of a fœtus about six inches long were extracted, followed, a day later, by a well-nourished and healthy infant of ten pounds. Mother recovered.

A Case of Brain Tumor, with Exhibition of Specimen. By Dr. Hugh T. Patrick.

Observations of a Spirillum occurring in False Membrane on the Tonsil. By Dr. Charles F. Craig.

Boston Medical and Surgical Journal, March 10, 1900.

Remarks on the Influence of Technique upon the Results of Closure of Wounds of the Abdominal Wall. By Dr. Charles P. Noble.

Abstract of Paper on Further Experience with the Operative Treatment of Anteflexion. By Dr. W. L. Burrage.

The Gastro-intestinal Tract in Nervous Disease. By Dr. F. Savary Pearce.—"Perhaps one great reason why the sympathetic system has not been given enough import in practical medicine and therapeutics is because morbid conditions of the same, as in health, do not give rise to any painful sensation, and therefore when pain *does* occur, it is directly of cerebro-spinal origin." Then follows a study of fourteen detailed cases, and the conclusions are that there are three classes of diseases in which the nervous system is more or less influenced by gastro-intestinal disorder, usually of a toxic nature.

1. (*a*) Neurasthenic states, general or in localized areas of distribution (most common); (*b*) where organic changes are present in the nerve cells (sclerosis).

2. Cases where long-continued gastro-enteritis causes organic changes in the mucosa and gastro-intestinal glands.

3. Mixed cases in which neurasthenia, so called, or organic nervous diseases are associated, *pari passu*, with disorders of digestion of a functional or organic nature. He is of the opinion that there are many phenomena which will be better understood as our knowledge of the sympathetic nervous system increases.

A Method of Determining the Digestive Power of Gastric Juice as well as the Absorptive Power of the Stomach. By D. A. E. Austin.

Philadelphia Medical Journal, March 10, 1900.

The Placarding of Houses for Contagious Diseases. A verbal communication to the Philadelphia College of Physicians. By Dr. Arthur V. Meigs.

Selection from the Lane Lectures. Delivered at Cooper College, San Francisco, California, 1898. By Dr. T. Clifford Allbutt.

The Surgical Use of Celluloid Thread. By Dr. W. W. Keen.

A Case of Gastrotomy for a Foreign Body in the Stomach. By Dr. George G. Hopkins.

Arteriosclerosis. By Dr. Joseph Eichberg.

A New and Simple Breast Binder for Post-partum Use. By Dr. Joseph Brown Cooke.

Some Old Certificates of Proficiency in Medicine. By Dr. Francis R. Packard.

Double Fracture of the Clavicle. By Dr. W. H. Hudson.

The Lancet, February 17, 1900.

The Anatomy and Pathology of the Eye. By Dr. E. Treacher Collins.—The Erasmus Wilson Lectures delivered before the Royal College of Surgeons of England. They treat of the anatomy of the eye and its application to and explanation of the various pathological conditions of the eye and its appendages. They are of especial interest to the ophthalmologist.

A Case of Interstitial Fibroid Tumor Sloughing "en masse," and Some Other Cases of Fibroid Tumors of the Uterus. By Dr. A. H. N. Lewers.—The writer reports nine cases of fibroid tumor of the uterus, illustrating various conditions and terminations of this affection. Of these, one case terminated fatally and was of especial interest. An interstitial fibroid in the posterior wall of the body of the uterus sloughed away "*en masse.*" A portion of the tumor was spontaneously extruded through an opening in the posterior lip of the cervix. Septicæmia developed and death occurred at the end of three months. The patient had previously taken a course of ergotine and hydrastis canadensis.

On the Restoration of Coordinated Movements after Nerve Section. By Dr. Robert Kennedy.—The writer undertook three experiments to determine whether in reuniting a severed nerve it is advantageous to approximate the two segments in their old relationship. He reached the following conclusions:

1. After section and immediate coaptation of a nerve, restoration of conductivity may be effected in a few days.

2. This early restoration of conductivity need not be the result of reunion of the old nerve fibres.

3. Changes of the old relations of the fibres, as by twisting the segments before coaptation, do not retard restoration of function. Finally, the simple approximation of the two ends of a severed nerve is all that is required.

A Brief Review of our Knowledge Concerning Backward Displacements of the Pelvic Organs. By Dr. Frederick Holme Wiggin.—As stated in the title, the writer briefly reviews our knowledge of the backward displacements of the pelvic organs. After touching upon the causes, symptoms, and diagnosis of the condition and the use of pessaries, he recommends as the best mode of treatment Mackenrodt's "uterine vagino-fixation." He looks upon this condition as preventable, and is hopeful that a time will come when it will no longer occur. This is to be brought about by immediate reparation of all post-partum lacerations, injuries, etc., and by the instruction of women to avoid all acts tending to produce the condition, such as lifting heavy weights, etc.

Diphtheria of the Conjunctiva. By Sydney Stevenson, F. R. C. S.—The writer reports a case of diphtheria of the conjunctiva in a child two years and a half old. Two thousand units of antitoxine were injected, and the conjunctiva was painted with a fifteen-per-cent. solution of potassium permanganate. Recovery took place at the end of twenty-two days. The writer states that conjunctival diphtheria is not uncommon in London, two per cent. of all cases of ophthalmia treated at the Northeastern Hospital for Children being diphtheritic.

A Successful Case of Cœliotomy for Intestinal Obstruction Due to Persistent Meckel's Diverticulum. By C. A. Morton, F. R. C. S.—The writer reports a case of intestinal obstruction in a girl nine years old, due to constriction by a ring formed by a persistent Meckel's diverticulum.

A Hepatic Mucoid Cyst. By W. C. McDonnell, M. R. C. S.—The writer reports a case of hepatic single cyst, a condition whose rarity makes its occurrence worthy of note. It complicated a fatal case of peritonitis due to rupture of a pyloric ulcer. The cyst was situated on the upper surface of the liver and contained a firm greenish jelly, giving none of the reactions for bile pigments, but containing leucin and cholesterin.

The Lancet, March 3, 1900.

Two Lectures on Rabies. By Dr. John Rose Bradford.—The author reviews the literature of the subject, giving due credit to the work of Pasteur and his pupils, and states that our knowledge of the nature of rabies has not advanced greatly since 1885. He states that practically the disease is communicated only by bites, and that the virus is found only in the saliva, the glands, and the central nervous system. A point worth noting is that the virus remains potent for quite a long time, having been found to be active in the carcass of a dog which had been buried for forty-four days. The period of incubation is stated to be between twenty and sixty days, the disease being rare after a longer period. The question of diagnosis is to be taken up in the second lecture.

The Anatomy and Pathology of the Rarer Forms of Hernia. By B. G. A. Moynihan, F. R. C. S.—In this paper, which is the third of the Arris and Gale lectures, the author discusses hernia of the bladder and cystocele, giving their ætiology, symptoms, signs, prognosis, and treatment.

Tuberculous Disease of the Kidney: its Ætiology, Pathology, and Surgical Treatment. By Dr. David Newman.—In this continuation of his article from a previous number of the *Lancet*, the writer discusses the various modes of infection and invasion of the kidney by tuberculous disease, and also the symptoms of the affection. He reports two cases in which hæmaturia was a prominent symptom. In all cases of pyuria with renal symptoms in men, careful examination should be made for tuberculous disease of the genital organs and the prostate. The article is to be continued.

On the Relation of Blood to Lymphatic Vessels. By C. H. Leaf, M. B.—After reviewing the literature the writer reports observations made by him upon dissected human subjects. His conclusions are as follows:

1. The azygos veins normally receive a great many lymphatic vessels.
2. Some of the smaller arteries in the thoracic region open directly into the thoracic vessels; some of the smaller veins open directly into the large lymphatic trunks; and these two factors help to quicken the movement of the lymph.
3. Direct communications are found to exist between the arteries, lymphatic vessels, and veins.
4. The communications between the veins and lymphatic vessels have been observed to take place in a great many regions in the body.
5. Owing to the presence of these communications the cells of a malignant growth can pass either from the lymphatics into the veins or *vice versa*, and hence not only in the sarcomata, but also in the carcinomata, the veins, as well as the lymphatics, should always be regarded as channels along which the cells may at any moment be conveyed to distant parts of the body.

A Contribution to the Surgery of the Kidney. By L. W. Bickle, F. R. C. S.—The writer reports two cases. The first was a nephrectomy for cystic kidney performed upon a woman three months pregnant. The operation was successful, and the woman was subsequently delivered of a healthy child at term. The second case was one of nephrolithotomy, a large oxalate stone weighing two hundred and forty grains being successfully removed.

Hallux Valgus and Hallux Varus. By Dr. J. J. Clarke.—The writer describes the various forms of these two affections (hammer-toe) and the best modes of treatment, stating his belief that every case of hallux valgus is curable.

A Case of Leprosy. By J. G. Gimlette, M. R. C. S. —The writer reports a case of anæsthetic leprosy in an unmarried male Eurasian aged twenty-seven. The case was at first supposed to be one of rheumatism, then beri-beri, and finally tertiary syphilis.

A Case of Suppression of Urine of Sixty Hours' Duration Treated by Operation. By Francis Jaffrey, F. R. C. S.—Dr. Jaffrey reports a case of suppression of urine in a man aged fifty-three years. Upon operation the suppression of urine was found to be due to hæmorrhage between the perinephric fat and the kidney, the tumor thus formed pressing upon the ureter. It was opened and drained and the patient rapidly recovered, leaving the hospital three weeks after admission.

The British Medical Journal, February 24, 1900.

A Case of Exploratory Operation for Dilatation of the Stomach. By E. A. T. Steele, M. R. C. S.—The writer reports a case of dilatation of the stomach in which he performed an exploratory operation to see whether pyloric obstruction existed. The stomach was opened and the pylorus found to be stenosed. The patient at first did well, but died three days after the operation.

A Modification of the Operation of Inguinal Colotomy. By R. C. Bailey, F. R. C. S.—The writer reports a case of carcinoma of the rectum in a woman forty-seven years old. After performing the usual operation of inguinal colotomy and stitching the intestine to the abdominal wall, a second incision was made two inches further down, penetrating as far as the muscular tissue. The skin between the two incisions was separated from the subjacent muscular tissue, and the loop of intestine drawn through the space thus made. The operation then proceeded in the usual manner, the upper incision being closed. The patient did well, underwent a second operation for removal of the growth, and was discharged convalescent.

The British Medical Journal, March 3, 1900.

Myasthenia Gravis Pseudo-paralytica. By Dr. Thomas Buzzard.—In this lecture the writer describes two cases of this rare disease which came under his observation. It is characterized by great weakness and early exhaustibility of the muscular system generally, together with symptoms of bulbar paralysis. Attention is drawn to the so-called myasthenic reaction upon electrical stimulation of the muscles. Tiring of the muscles is produced very rapidly by faradaic stimulation, the galvanic current having no such effect.

An Address on Suicide in Scotland. By Sir John Sibbald, M. D.—This address is based upon figures obtained from a tabulation of 3,725 cases of suicide occurring in Scotland between 1877 and 1894. The conclusion is drawn that the alleged increase of suicide must be regarded as not proved.

The Eye Symptoms of Locomotor Ataxia, with a Clinical Record of Thirty Cases. By Dr. C. O. Hawthorne.—The author gives the eye symptoms in thirty cases of locomotor ataxia for the purpose of illustrating the clinical order and sequence in which the ocular disturbances of locomotor ataxia may manifest themselves. The view is held that an optic-nerve atrophy, an ocular paralysis, or the Argyll Robertson pupil must be regarded as furnishing a definite basis for suspicion in reference to a possible development of spinal disease.

Case of Tabes Dorsalis with Bulbar Symptoms. By Dr. G. E. Rennie.—The author reports a case of tabes dorsalis with marked bulbar symptoms, there being hemiatrophy of the tongue and bilateral abductor paralysis, with paralysis of the pharyngeal muscles, rendering swallowing very difficult.

Experiments to Determine the Efficacy of the Different Constituents of Haffkine's Plague Prophylactic. By Dr. C. B. Stewart.—The experiments here reported consisted in injecting rabbits with varying quantities of broth cultures of living plague bacilli. It was found that when cultures eight or more days old were used the cultures contained substances which protected the rabbits against the bacilli. Increasing the dose did not raise the case fatality. This was proved by filtering the cultures, when it was found that the filtrate protected the animals against plague, while a suspension of the bacilli left upon the filter killed in every instance.

A Contribution to the Study of the Pituitary Body. By Dr. W. A. Osborne and Dr. S. Vincent.—This is a preliminary communication and will be abstracted when it appears in full.

The Anatomy and Pathology of the Rarer Forms of Hernia. By B. G. A. Moynihan, F. R. C. S.—Numbers 2 and 3 of the Arris and Gale lectures.

Edinburgh Medical Journal, March, 1900.

On the Method of Zadig in the Advancement of Medicine. By Dr. George W. Balfour.

The Differential Diagnosis of Gout, Rheumatism, and Rheumatoid Arthritis. By Dr. Arthur P. Luff.

Some Observations on Vascular Resistance. By Dr. Harry Campbell.

Food versus Physic. By Dr. John Haddon.—This article is an argument against the use of meat for food. The author alludes to a number of instances in which he has succeeded in overcoming or greatly mitigating various morbid conditions by eliminating meat from the diet. One of them was that of a woman at the menopause who for years had been an invalid and never had a movement of the bowels except as the result of taking medicine. Under the use of the following diet her bowels acted daily without the use of medicine: *Breakfast.*—A raw ripe apple, whole wheat-meal bread with butter, and a cup of cocoa made with water. *Dinner.*—Vegetable soup, with one slice of whole-meal bread, toasted hard and added to the soup, followed by two potatoes. *Supper.*—The same as breakfast.

Ulcer of the Cornea. By Dr. A. Maitland Ramsay.

The Place of Protargol in Eye Work. By Sydney Stephenson, M. B., F. R. C. S.

Scottish Medical and Surgical Journal, March, 1900.

Some Illustrations of the Clinical Significance and Importance of Decubitus. By Dr. J. O. Affleck.—In this clinical lecture the inferences to be drawn from a patient's posture in bed and the occasional advantage of managing the decubitus are treated of as they relate to diseases of the respiratory system, of the circulatory system, of the alimentary system, and of the nervous system.

On the Cause of the Differentiation of Connective Tissue in the Human Fœtus. By Dr. D. Berry Hart.

A Case of a Peculiar Form of Dwarfed Growth. By Dr. John Thomson.

Appendicitis. By J. Scott Riddell, C. M., M. B., M. A.—The author recognizes the curative inefficiency of medicinal treatment and deprecates the free use of opium to relieve pain, owing to its tendency to mask the symptoms. The treatment with saline purgatives he does not look upon with favor, although it is of service in abdominal distention after an abscess has been drained. In the matter of diagnosis, he thinks a rectal examination very useful.

Clinical Experience with Salol in the Treatment of Small-pox. By Charles Begg, M. B., C. M.—The author's experience was in China, and he suggests that the climate may have been favorable to a mild course of the disease. According to his observation, salol given in daily amounts of a drachm gives great relief from the itching, and most of the pocks dry up while still in the vesicular stage of their evolution.

The Treatment of Tapeworm with Chloroform. By Dr. J. Mackie Whyte.—Dr. Whyte gives brief notes of six cases, in only one of which was the chloroform effective.

Notes on a Case of Lymphadenoma. By James Burnet, M. A., M. B., Ch. B.

Note on a Hot-air Nebulizer for Volatile Medicaments. By Dr. A. Douglas Webster.

Note of a Large Solid Intraligamentary Tumor Removed by Abdominal Section. By N. T. Brewis, M. B., F. R. C. S. Ed.

Le Progrès médical, February 24, 1900.

The Dilution of Milk for Children in the First Year of Life.—Dr. J. Bonifas, medical inspector of nurslings at Caudelec-lès-Elbcuf, asserts that children who are given milk pure are rarely attacked by gastro-intestinal disease; they are usually vigorous, fat, and cheerful; the mortality among them is low. On the other hand, infants nourished with diluted milk are often the subjects of severe alimentary disturbance; they are weak, pale, and miserable; they have a poor appetite and show a high death-rate. He cites several instances to prove his position and argues that a sufficient quantity of milk diluted one half can not be given to an infant for nutritive purposes without causing dilatation of the digestive tract, followed by the usual train of symptoms—loss of appetite, loss of flesh and strength. By dilution, further, the gastric juices are impaired in their digestive power, and the increased quantity impairs the assimilative power and brings about fatigue and exhaustion of the digestive tract. It finally necessitates an increase in volume of the ingested food, which in its turn evokes gastro-intestinal dilatation, digestive disturbances, and flatulence. By giving the milk undiluted, the quantity necessary for feeding an individual infant can be accurately gauged according to its strength and the power of its digestive organs. After the age of four or five months, the milk should always be given undiluted and should never be forced on the child. The milk is to be sterilized, but is to be fed to the children undiluted. In the author's experience, diluted sterilized milk is more injurious than pure milk unsterilized given in proper bottles. The feedings are to be given every two hours as a minimum for not longer than seven or eight minutes. The only disadvantage Dr. Bonifas finds in the administration of undiluted milk is an occasional constipation, which easily yields to proper treatment.

A Case of Tuberculous Lupus of the Buttocks Cured by the Static Induced Current.—Dr. M. E. Albert-Weil reports such a case.

Lyon médical, February 25, 1900.

Ear Affections in Diabetics.—Dr. M. Lannois calls attention to the quite frequent presence of otitis media and mastoiditis in diabetic subjects. He says the presence of otitic furunculosis, eczema, and desquamation of the external canal should always lead to the examination of the urine for sugar. He points out the connection between the rheumatic diathesis and diabetes and asserts that the frequent appearance of middle-ear sclerosis and ankylosis of the ossicles in rheumatic diabetics is proof of their relation. Dr. Lannois says that the facile growth of bacteria in a saccharine medium is another reason for looking for suppurative processes in the ears of diabetic patients. He is in favor of operating on mastoiditis in such patients after the establishment of antidiabetic treatment and under the most rigid antiseptic conditions. He agrees with Naunyn in giving large doses of bicarbonate of sodium before and after the operation to avoid the hyperacidity of the blood and the destruction of red blood-cells which always follows anæsthesia by ether or chloroform. He emphasizes the possibility of the involvement of the labyrinth by a hæmorrhagic transudation in these cases.

Enteroclysis. (Conclusion.)—Dr. A. Mazeran speaks of the mechanical value of enteroclysis in relieving spasms of the intestine in obstinate constipation, in fæcal impaction in the cæcum, in pseudo-membranous colitis, and in all conditions in which the intestines are loaded with the accumulations of fœtid or putrefying material. In cases in which bacteria are thriving in the colon or rectum, as in membranous enteritis and in dysentery, clysters containing iodine or nitrate of silver are more valuable than disinfectants given by the mouth. Ichthyol in five hundred parts of water, boric acid, permanganate of potassium, and tannin may be equally successfully employed in the irrigations. By modifying the temperature of the fluid used, a tonic action may also be obtained in an atonic intestine. Extremely cold or hot irrigations are of inestimable value in the treatment of those forms of the disease characterized by abdominal distention, flatulence, constipation, and an atonic gut. Two conditions, the author says, are essential for successful rectal alimentation: the first is to reduce the normal peristalsis, the second to increase the antiperistalsis. The former is obtained by withholding all food by the mouth; the second is achieved by correct technics—the use of a rectal tube sufficiently long to pass Bauhin's valve. The fluid nourishment must be injected slowly and be capable of assimilation.

Journal des praticiens, February 24, 1900.

Collyria.—Dr. Trousseau urges keeping eye washes sterile by the incorporation in them of boric acid. He has the solutions sterilized by the pharmacist by heating them in the autoclave to 120° C. He gives instructions for the irrigation of the eye and instilling solutions, and mentions the various fluids used:

As an anæsthetic:		
Cocaine hydrochloride	0.25	gramme;
Water	5.0	grammes.
As an astringent:		
Zinc chloride	0.01	gramme;
Water	5.0	grammes.
As a mydriatic:		
Neutral atropine sulphate	0.03	gramme;
Water	5.0	grammes.
As a meiotic:		
Eserine salicylate	0.03	gramme;
Water	5.0	grammes.
Or—		
Pilocarpine nitrate	0.1	gramme;
Water	5.0	grammes.

Bathing in the Treatment of Typhoid Fever in Infants.—Dr. E. Ausset does not agree with the oft-repeated statement that typhoid fever is better borne by children than by adults. It is very rare in nurslings, more common between five and twelve years, less frequent again between the ages of twelve and fifteen. He favors the cold bath in the treatment, dosing it as accurately as the drugs administered. Bathing stimulates the nervous system, thus imparting regularity to the respiration and circulation while it lowers the temperature. The younger the patient, the more energetic is the reaction. Each case must be treated on its merits; no rule can be laid down; but systematic tubbing, from the time of onset, is indicated. From infancy to the fourth year Dr. Ausset begins the bathing at 82.5° F., every two hours. The temperature is not lowered as much as by the colder baths, but the heart is relieved, urination becomes abundant, and the general toxic phenomena are ameliorated. He relies upon the circulation, the urine, and the general condition to aid him in determining the degree at which the bath is given. If he does not obtain the desired relief, he lowers the temperature of the bath the following day to 74° F., and, if necessary, subsequently to 68° or 65° F. In grave cases, or those which come under observation late, he uses the typical Brand bath.

Revue mensuelle des maladies de l'enfance, March, 1900.

A Contribution to the Study of Abnormal Elevation of the Shoulder Blade. By M. Nové-Josserand and M. Brisson.

Appendicitis with an Unusual Onset; Death in Ten Days. By Dr. Breton.—A girl thirteen years old was attacked with malaise, vomiting, and headache, but there was not the slightest abdominal pain or tenderness or any muscular rigidity on palpation, and there was no fever. The thought of appendicular trouble was constantly in the author's mind, and the child's abdomen was repeatedly examined with the greatest care, but not until the evening of the third day was the diagnosis made, and then the parents decided to postpone the operation until the following day. When the abdominal cavity was opened a very fœtid serosity escaped. Except superiorly, the exudation was walled in with plastic lymph, and the appendix was neither seen nor felt. The cavity was drained with gauze. The author says that a peculiar pinched expression of the child's face was what chiefly led him to have appendicular inflammation in view long before he felt justified in opening the abdomen, but he thinks now that its occurrence in conjunction with continued vomiting should be looked upon as indicating intervention.

Traumatic Urinary Extravasation around the Kidney; Laparotomy and Incision of the Sac; Recovery. By M. P. Nayoud.

The Hospital Contagion of Typhoid Fever. By M. N. Thomesco and M. Jean Costinesco.—Three cases are related in which children admitted into a hospital in Bucharest are thought to have contracted typhoid fever in the institution. In one instance the child's mother, who was allowed to remain in the house, is supposed to have conveyed the infection, but no explanation is suggested in the two other cases.

Wiener klinische Wochenschrift, February 22, 1900.

Alimentary Glycosuria. By Dr. Emil Raimann.—The author defines alimentary glycosuria as the excretion of dextrose passing from the body unchanged after its ingestion. It is not to be referred to a disturbed renal function, but to a diminished assimilative power of the body as to dextrose. Other carbohydrates show a similar peculiarity—lævulose, galactose, pentose, and cane sugar. The author accepts Hofmeister's dictum that a glycosuria of alimentary origin must show at least 0.2 per cent. of sugar in the urine. He points out that the assimilation of the sugars varies with individuals, and in them again in various stages of disease. He cites the various liver and muscle diseases, the tumors and organic diseases of the central nervous system, the acute infectious diseases, mental disturbances, and experimental results with toxic substances, as factors for the diminished absorption of the sugars. The tendency to sugar excretion is evidence of a general systemic disturbance which is hereditary, or which may remain latent, or which may suddenly appear. The author describes his experiments in attempting to define the limits of the assimilation of the sugar by giving increasing doses of dextrose until it appears in the urine to the extent of 0.2 per cent., but he admits that no general formula can as yet be deduced.

A Rare Form of Aneurysm of the Descending Arch of the Aorta.—Dr. M. Weinberger and Dr. Arthur Weiss describe the case of a fifty-four-year-old man, whose first symptom was increasing pain in the right shoulder. Three months later he had a severe hæmoptysis, which was repeated on the following day. On admission, a bulging in the region of the right scapula was seen, which had a distinct pulsation. There was diminished breathing over this area, which was dull to percussion. The right carotid showed a stronger pulsation than the left. A blowing systolic murmur was heard over the area of dullness. The patient died suddenly a few days later from hæmorrhage. The autopsy disclosed an aneurysm of the descending arch of the aorta, which had abraded the upper dorsal vertebræ and the fourth and fifth ribs, and which had form adhesions with the upper lobe of the right lung and had ruptured into a bronchial tube. The aneurysm was large, sacculated, sprang from the lower surface of the descending arch of the aorta, and sent branches into the deep muscles of the back.

Traumatic Aneurysm of Brachial Artery; Total Extirpation. Severed Median Nerve; Nerve Suture.—Dr. Karl Sinnreich reports the case of a man who was stabbed in the upper arm. Severe hæmorrhage followed with subsequent, almost immediate median paralysis. On admission, a mass pulsating synchronously with the heart, the size of a fist, and conveying a loud purr on auscultation, could be felt in the upper right arm. The brachial artery was exposed and was surrounded by a ligature. The aneurysmal sac was dissected out. The sac was ruptured in the attempt at removal and severe hæmorrhage ensued, which was controlled by the ligature. The sac was then removed piecemeal and the median nerve exposed. Its ends were freshened and the sheath was sutured. On his discharge the patient still suffered from paresis of the median nerve, which was improving; the radial pulse was still absent. The operation was done without the use of the Esmarch bandage, in order that the limits of pulsation of the aneurysm could be more easily detected. The author advises conservative methods (compression) first in cases of brachial aneurysm, but not in those of traumatic origin, for fear of provoking a fresh hæmorrhage. He urges operation when there is gangrene of the skin over the aneurysm, when there is simultaneous division of a nerve, or when there is compression of important nerves.

Wiener medizinische Blätter, February 22, 1900.

Care and Nursing in Diseases of the Prostate.—Dr. Ferdinand Kornfeld recommends in hypertrophy of the prostate that the patient be instructed to care for himself in such a manner as to delay the natural course of the ailment, by instructing him to avoid conditions which lead to pelvic congestion, to attend to his bowels, and to shun "catching cold." He advises against allowing such patients to place their hands in cold water before and during urination. He advises patients to use a glass urinal at night, or to get out of bed after donning some warm covering for the feet. He urges against these patients being allowed to sit continuously for a long time, as in a railroad train or at a long dinner, and he is opposed to their undertaking excessive physical exercise. Moderate sexual intercourse may be allowed. (To be continued.)

The Indications for, and Employment of, Diuretics in Renal Dropsy. (Conclusion.)—Dr. Alois Hanusch thinks that squills are so weak as almost to be worthless in dropsy of renal origin. Citrate of caffeine, in doses of two grains, is useful but not reliable. Pilocarpine hydrochloride, in doses of one seventh of a grain three times daily, is a good diuretic. In subacute, acute, or chronic forms of renal dropsy, digitalis is an efficient diuretic. The author gives the fluid extract every two or three hours in doses of from one to three drops, according to the urgency of the case and the promptness with which the drug acts. He recommends the infusion for its efficiency, but warns against its upsetting the stomach. In the German pharmacopœia the dose of this preparation is from one to three teaspoonfuls. Diuretin increases the fluid and solid constituents of the urine, and its effect lasts from twenty-four to thirty hours. The combination of diuretin and digitalis has found favor with the author. The best method of administration is to give it in doses of from ten to fifteen grains three times daily, in water flavored with an aromatic, at a time when the gastric acidity is at its lowest point, three to four hours after meals. The dose for children, in whom it is also efficacious, is from three to eighteen grains. Dr. Hanusch speaks of the acknowledged value of spiritus ætheris nitrosi and of calomel as diuretics in dropsy of renal origin.

The Treatment of Pernicious Vomiting of Pregnancy with Cocaine. Dr. P. Neustube.—(Translated from the Russian.)

Wiener klinische Rundschau, February 25, 1900.

Malignant Œdema.—Dr. Alois Brabec mentions the three recognized varieties of malignant œdema: anthrax, contagious anthrax (Rauschbrand), and malignant œdema *sui generis.* He calls attention to the similarity of the clinical pictures despite the ætiological differences. He describes a case of the last variety in a young man whose illness began with alternating pain in the right and left shoulders, with redness of the skin of these regions, lassitude, and numbness of the hands. There was some fever and diarrhœa. On admission he had a swelling over the left shoulder extending to the scapula behind and to the middle of the clavicle anteriorly. The skin was slightly red and œdematous. Great thirst and pain were the chief symptoms. The temperature ranged between 102° and 104° F. A probatory puncture withdrew a bloody-serous fluid which contained long bacilli. An incision was made and a large quantity of bloody fluid was evacuated. The muscles were found densely infiltrated. No gas or pus was found, although cultures showed the presence of *Staphylococcus aureus* and of bacilli with rounded ends and central spores. These bacilli grew anaerobically and were identified as those of malignant œdema *sui generis.* The patient died on the third day. The autopsy showed a necrosis of the musculature of the upper arm, hard and enlarged axillary glands, an enlarged spleen, and a pigmentation of the plaques and follicles of the small intestine, probably due to typhoid. Animal experimentation with the cultures obtained from the swelling over the shoulder evoked phenomena similar to the disease, although cultures obtained from these animals were negative except from the œdematous swellings.

Experiences in the Medical and Surgical Treatment of Cholelithiasis. By Dr. Carl Ewald.—(Continued article.)

Flechsig's Method in the Treatment of Epilepsy. (Conclusion.) By Dr. Lad. Haskovec.—The author has found marked improvement in cases which had been under other treatment, by placing them on Flechsig's treatment of opium and bromides. While he does not guarantee the permanence if his results, he feels sufficiently encouraged to advocate Flechsig's plan, combined with a careful management of the patients' diet and general mode of life.

Medicinische Woche, February 26, 1900.

The Fate of Foreign Bodies in the Intestinal Canal. By Dr. Bliesener.—The author gives the notes of two cases. The first was that of an infant which had swallowed a needle. The child died, but not as the result of having swallowed the needle. At the necropsy the needle was found fixed in the wall of the duodenum, which it had perforated at the point where the organ makes a turn over the head of the pancreas, and the author thinks that this particular part of the alimentary canal is one of the points of predilection for the lodgment of foreign bodies. In the other case a piece of a rabbit's rib about an inch long was found to have escaped from a knuckle of intestine that had been contained in a femoral hernia, but had been reduced. It had been swallowed two weeks before, and was found in the course of an operation performed for the relief of the hernia, which had not existed until after the bone was swallowed. It is suggested that the perforation was due to efforts at reduction of the hernia.

Deutsche Aerzte-Zeitung, February 15, 1900.

On the Formation of Inguinal Hernia. By Dr. Graser.

On the Disinfectant Action of Certain Aluminum Preparations. By Dr. Aufrecht.—In this article graphic representations are given of the comparative germicidal action of "alsol" (aluminum acetotartrate), an eight-per-cent. solution of aluminum acetate, and carbolic acid. Alsol seems to be somewhat more efficient than the other agents mentioned in destroying the inoculability of the spores of the anthrax bacillus, the *Streptococcus pyogenes*, the *Staphylococcus pyogenes aureus*, the gonococcus, the tubercle bacillus, and Löffler's diphtheria bacillus.

On the Absorption of Drugs. By Dr. Gustav Wendt.

Vaporization of the Uterus. By Dr. H. Fuchs.

Centralblatt für innere Medicin, March 3, 1900.

On the Pathogenesis of Cyclical Albuminuria. By Dr. Rudolph.—The author accepts the view of Stirling and Heubner that in this affection the appearance of albumin in the urine is due, not to eating a meal, but to rising from bed, and thinks that the standing posture operates by increasing the blood pressure in the kidneys.

Centralblatt für Chirurgie, March 3, 1900.

Expanded Metal, a New Splint Material, especially in Military Surgery. By Dr. C. Hübscher.— By "expanded metal" (*Streckmetall, métal déployé*) the author means the lattice-work of tin used in the building trade as a retentive of plaster, cement, and the like. It is cheap and easy of transportation, and Hübscher points out that it may readily be fashioned to fit a limb. He regards it as a good splint material in itself and as a useful stiffening for a plaster-of-Paris splint.

Centralblatt für Gynäkologie, March 3, 1900.

Cæsarean Section on a Moribund Woman, the Child Living. By Dr. Anton Prokess.—The woman, who was in the eighth month of pregnancy, was dying of an acute disease which had been diagnosticated as meningitis. The uterus was opened by means of Fritsch's transverse incision, and, although the cut involved the placental implantation, there was very little hæmorrhage. The child survived. The mother died eight hours after the operation, with signs of pulmonary œdema.

A Further Contribution on the Use of Reindeer Tendon as a Material for Sutures and Ligatures. By Dr. W. F. Sneguireff.

On Myoma as a Complication of Pregnancy. By Dr. F. Walzer.

Once More Narcosis. By Dr. Koblanck.—In opposition to Czempin, the author maintains that athetotic movements of the fingers signify a dangerous approach to a fatal issue in chloroform anæsthesia.

Riforma medica, February 21, 1900.

The Treatment of Cutaneous Epitheliomata by the Cerny-Trunecek Method. By Dr. Cesare Casarini.

Riforma medica, February 22 and 23, 1900.

An Experimental and Clinical Contribution to the Study of the Influence of the Nervous System on the Repair of Fractures. By Dr. E. Arcoleo.—In this article the author refers to a number of recorded observations bearing upon the subject, and adds two clinical histories and accounts of six experiments, all of which, in his opinion, go to show that the central nervous system has no influence on the process of repair in cases of fracture.

Gazzetta degli ospedali e delle cliniche, February 25, 1900.

On the Ætiology of Hepatic Abscess. By Dr. L. Lucatello.—The author maintains that large abscesses of the liver are for the most part the sequels of dysentery, but that the *Amœba coli* is not the only organism capable of giving rise to them when they are the result of dysentery.

A Clinical Contribution to the Diagnosis of Infantile Rheumatism. By Dr. Sigismondo Pascoletti.

Carbolic Acid in the Treatment of Tetanus. By Dr. Ottorino Favero.—Favero gives the history of a fatal case in which injections of carbolic acid were employed. Notwithstanding the fatal termination, he thinks that the treatment mitigated the disease. His opinion is, however, that it can not be pushed to its fullest efficiency without damage to the system, but that in mild cases it is a precious therapeutical acquisition.

On Human Milk. By Dr. I. Callari.

Subconjunctival Treatment with Corrosive Sublimate in Corneal Ulcers. By Dr. Fortunato Amata.

On Mercurial Neuritis. By Dr. P. C. Modinos.

Rivista critica di clinica medica, February 24, 1900.

The Movements of the Heart and its Relative Changes of Form and Position in a Fœtus of Five Months. By Dr. Fabio Rivalta.

Miscellaneous.

Antitussin in Whooping-cough.—Max Heim, of Düsseldorf (*Berliner klinische Wochenschrift*, 1899, No. 50; *British Medical Journal*, January 13th), reports most favorably of this preparation, an ointment containing five parts of difluordiphenyl to ten of vaseline and eighty-five of lanolin. The neck, breast, and back between the shoulders having been washed with warm soapsuds and dried with a rough towel, this ointment to the size of a walnut is well rubbed into them. Of sixteen cases in which he has so employed it successfully, nine were already in the convulsive stage, and three of these between three and eighteen months old, and in a dangerous condition. Even in the worst cases the convulsions were greatly mitigated after a few inunctions; the phlegm was at the same time so loosened as to be got rid of without difficulty. Even on the second day the frequency of the fits of coughing was diminished to one half, and the diminution continued, so that this stage lasted almost a fortnight. Moreover, when the treatment was commenced early the convulsive stage was not developed. No injurious effects followed the use of antitussin in the above ointment, which is relatively harmless. Heim quotes Fischer and Beddies as having proved by laryngoscopic examination in men, and also by experiments on animals, that in other affections of the throat and pharynx it diminishes the provocation to cough and regulates the secretion, probably by acting, after its absorption into the circulation, on the central or peripheral nerves connected with respiration.

The Prevention of Gallstone.—Sir Thomas Lauder Brunton (*Clinical Journal*, January 10th), in an address on Bile, Biliousness, and Gallstones, says: "If there is anybody here who is afraid of gallstones, I should say the best way to prevent the necessity for an operation would be for the patient to have hot water four times a day—on getting up in the morning, going to bed at night, at eleven o'clock, and at four o'clock—taking little or no liquid with meals, but taking the whole of his liquid in the shape of hot water at these times. In addition, let the patient buy one of those exercisers which I have mentioned, so as to squeeze the liver, and use it once or twice a day, say on going to bed and on rising in the morning."

[The "exerciser" referred to is an elastic band with handles, such as may be purchased almost everywhere.]

Intestinal Lithiasis.—G. Milian and A. Chevallier (*Gazette des hôpitaux*, November 18, p. 1229; *Medical Review of Reviews*, December, 1899) restrict this term to calculi or sandy material formed within and secreted by the intestine. Intestinal lithiasis is generally due to muco-membranous enteritis but may accompany other affections of the bowel. Its onset is difficult to diagnosticate; the symptoms are lost in those of colitis. Examination of the dejecta by the physician may give a clew, or the patient may experience the sensation of passing earth or gravel *per anum*. Severe colic may be induced by the passage of such concretions through the colon, and this symptom may be associated with flatulent distention, vomiting, hiccough, syncope, or vertigo. The attacks of colic terminate after the passage of scybala and sandy or calculous material. In the intervals, the symptoms of muco-membranous enteritis may continue. The concretions may sometimes be recognized in the stools, but more frequently sifting is requisite. The sandy material is brownish or yellowish and may be passed in very large quantities. It contains mineral matter, generally magnesium-ammonium phosphate, and vegetable *débris*. In the gravelly form the particles commonly reach the size of peppercorns. The calculi, which are blackish, may attain the dimensions of a pigeon's or even of a hen's egg. In some cases these calculi may consist of concentric layers, but they are more frequently composed of friable gravelly matter fixed together by fæcal material.

Intestinal lithiasis occurs usually between forty and fifty, and women are far more liable than men. In some cases it is associated with renal calculus, but the patients are nearly always neuro-arthritic and suffer from rheumatism, hæmorrhoids, neuralgia, eczema, etc.

The diagnosis is based on the presence of chronic colitis with attacks from time to time of acute colic, the examination of the fæces and the absence of hæmaturia, jaundice, and of *radiating* pain during the attacks. A disease from which it must be carefully distinguished is appendicitis.

Treatment.—The ordinary treatment of colic must be adopted. The diet afterward should consist of soups, beef, white fish, crabs, oysters, lightly boiled eggs, English cheeses, grapes, apples, etc., foods which do not lead to constipation and are least liable to set up intestinal fermentation. Germain Sée advocates the use of linseed as a laxative, but others, such as cascara, rhubarb, etc., may be employed to counteract the obstinate constipation. From a grain to a grain and a half of solid extract of hydrastis combined with senna may be administered as a pill three times daily immediately after meals.

Nævus of the Tympanum.—According to the *Medical and Surgical Monitor* for February 15th, Dr. E. B. Gleason recently exhibited to some society not specified a man, aged forty-five, who showed a small dark-colored growth in the posterior portion of the tympanum. There were increasing deafness and occasional bleeding from the ear. There was no history of an injury. A small incision was made in it to determine if it were cystic or a bulb of the jugular vein. These were excluded. The next week a deep incision was made into its substance and the spot touched with pure carbolic acid, after which the tumor became smaller. The patient had three years previously undergone a long course of treatment by massage of the tympanum without benefit. Incision seemed to improve the hearing. The tumor seemed to grow from the posterior wall of the tympanum to which it was attached, and not to the drumhead. It moved with the membrane and did not change color. The patient had been free from exanthemata. The bleeding from the ear was periodical, lasting only a day or two, and then discontinuing for a week. The bleeding occurred about the time the deafness set in. No hæmorrhage occurred prior to the massage treatment.

The Diagnosis of Puerperal Peritonitis.—Dr. Gallant (*American Journal of Obstetrics*, October, 1899) sums up a paper on this subject with the following conclusions: 1. Tuberculous inflammation of the peritonæum is met with at all ages and is most common in early and adult life. 2. It is most frequently met with in women and between the ages of twenty and forty years. 3. It most often originates in the pelvic sexual organs, and from that point may extend to the visceral and parietal abdominal peritonæum. 4. As a primary lesion of the peritonæum, it resembles in its inception, subsequent history, and final outcome the various forms of the same disease in other serous cavities. It may be secondary to tuberculous disease in any other part of the body, especially the lungs and pleura. 5. The most distinctive features of this disease are: *a.* A rather constant subnormal morning temperature, rising to the normal in the late afternoon, reaching a little above at night. *b.* Hypogastric pain on pressure, on walking, and when urinating. *c.* The presence of tubercle bacilli in the pulmonary, cervical, or vaginal secretions. 6. Anæsthetic examination in pelvic cases will often aid in clearing up the diagnosis, but when the abdomen is tensely distended with encysted fluid, unless immediately preceding operation, it will only subject the patient to useless discomfort. 7. A positive diagnosis other than by exploratory incision is in some cases impossible. 8. Early abdominal section, evacuation of the fluid, removal of the original focus, carefully avoiding any attempt to break up intestinal adhesions, thorough irrigation of the cavity with saline solution, and closure of the abdomen without drainage of any form, has been shown by later operations for other conditions, and on autopsy, to have resulted in permanent cure. 9. When confined to the pelvis, removal of the original focus usually results in a permanent cure of the disease. 10. Where fluid reaccumulates a second cœliotomy will be curative or prolong life. 11. Tuberculous disease in other parts, especially the lungs and pleura, is not a contraindication to operation, which will be followed by a more or less prolonged abeyance or retardation of the disease.

Enormous Doses of Sulphonal.—Dr. R. Percy Smith (*Lancet*, January 20th) records the case of a woman of unsound mind who two days before Dr. Smith saw her had taken a hundred and fifty grains of sulphonal at one dose, in the form of six powders of twenty-five grains each. Her husband, a physician, gave apomorphine subcutaneously and a purgative by the mouth. No toxic effects followed. The patient, however, had secreted another hundred and fifty grains, which she took the next day—viz., the day before Dr. Smith saw her. The same treatment was followed by the prevention of all symptoms save some drowsiness. Dr. Smith calls attention to the ease with which such drugs can be obtained in England without even the formality of a prescription.

Proceedings of Societies.

THE SOCIETY OF THE ALUMNI OF THE CITY (CHARITY) HOSPITAL.

Meeting of November 8, 1899.

The President, Dr. William L. Stowell, in the Chair.

Congenital Microdactylism.—Dr. Fielding Lewis Taylor presented a photograph and radiograph of the case, that of a boy eight months old. The middle and forefinger were exceedingly large, due to overgrowth of the bone as well as the soft parts. The forefinger was quite flexible and the patient had considerable use of it. The middle finger the speaker removed, as it was quite useless.

Fracture of the First Phalanx of the Thumb with Deformity Similar to that Seen in Luxation.—Dr. Taylor showed a radiograph of this case. John H., thirty-two years old, a truckman. A barrel of syrup fell, catching the patient's thumb between the chime and the floor, producing a compound fracture of the first phalanx near its base, as shown in the cut (Fig. 1).

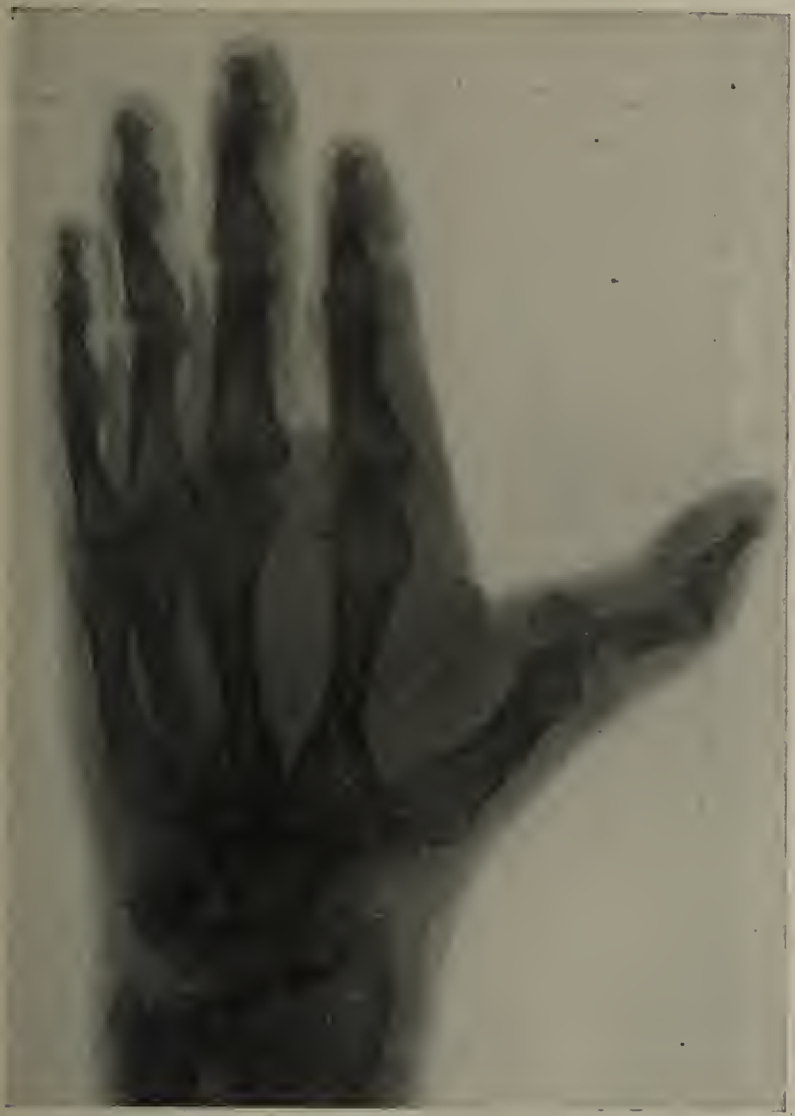


Fig. 1.—Case of J. H.

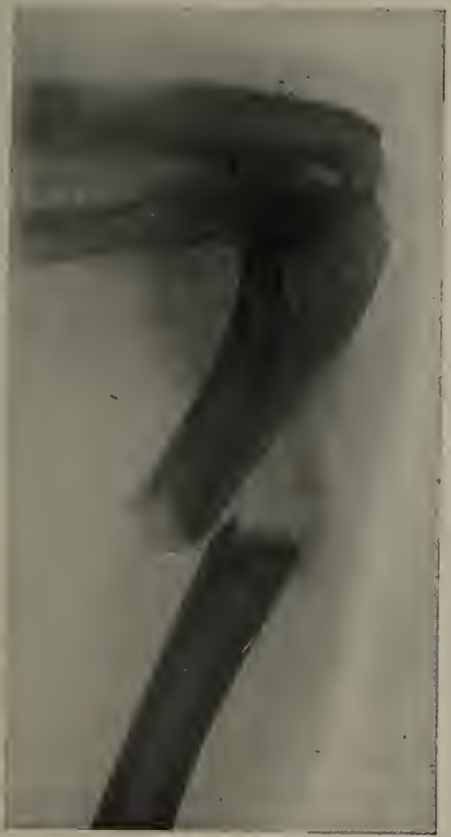


Fig. 2.—Fracture of the humerus, three weeks old; large callus and bad deformity; refracture under ether, and reduction. Result perfect.

The first phalanx of the thumb was extended and the last flexed, thus producing a deformity similar to that observed in dislocation of the first phalanx. The proximal fragment was flexed by the short flexor. The presence of crepitus, facility of reduction, and tendency of the deformity to recur after reduction distinguish this fracture from dislocation. Reduction may be accomplished by traction or overextension and flexion, as in dislocation. Treatment by opponation and a posterior molded plaster splint. He had treated two other similar cases in the same manner with excellent result.

Fracture of the Humerus.—Dr. Taylor showed a radiograph (Fig. 2) of a fracture of the humerus of three weeks' standing. There was a bad angular displacement. He refractured the bone under anæsthesia and straightened it.

Congenital Dislocation of the Hip.—Dr. Taylor showed a radiograph of a case of congenital dislocation of the hip in which there was some question about the diagnosis. The child was three years old. It had been taken to several clinics. The disease had been diagnosticated as tuberculosis of the hip, fracture, and congenital dislocation. An X ray settled the question.

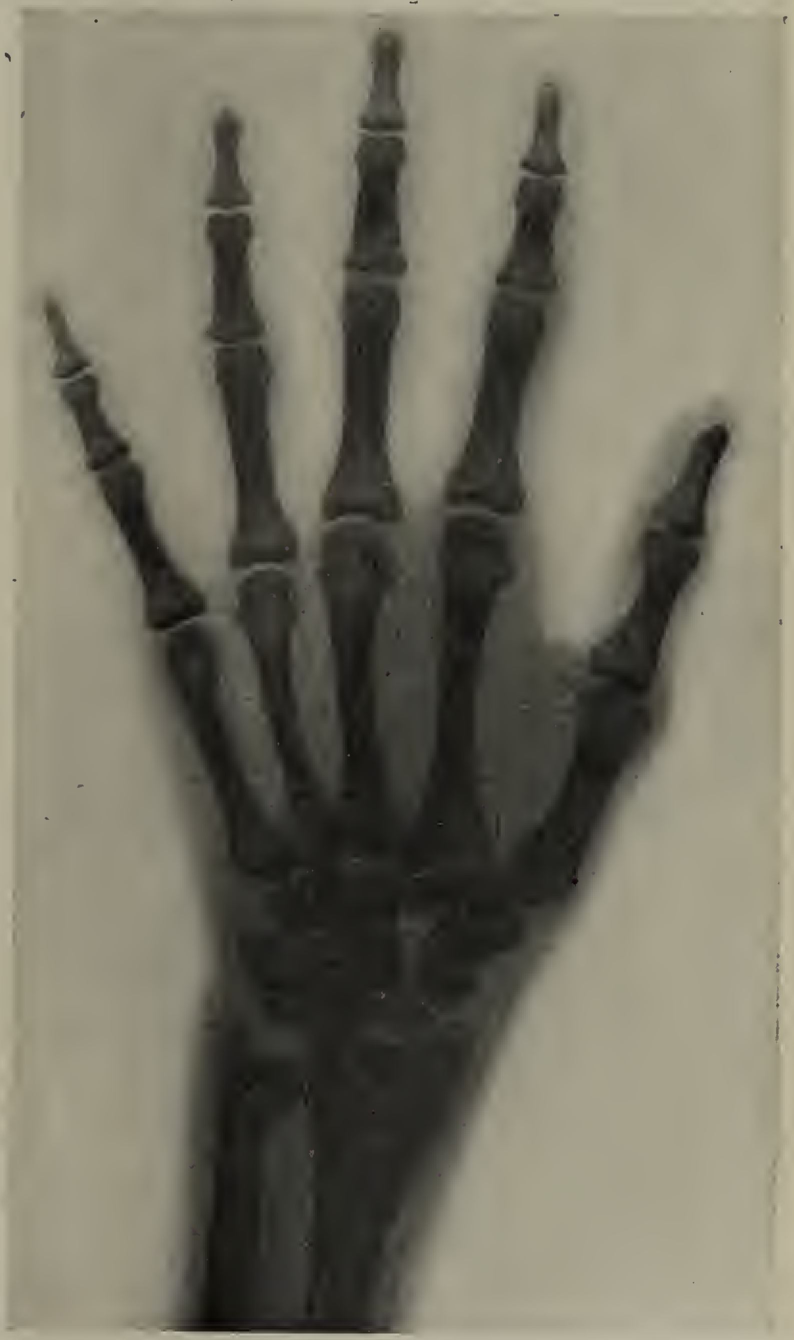


Fig. 3.—Emily L. K., aged nineteen years. Arthritis deformans; duration, twenty-three months. Radiograph of left hand; eight-plate static machine, February 17, 1899.

Deltoid Joints.—Dr. Guitéras showed two radiographs, taken by Dr. Samuel Lloyd, of deltoid joints.

Arthritis Deformans.—Dr. Stowell presented a couple of photographs of arthritis deformans. The patient was a little girl nine years of age. One picture showed the effects of the disease; she was absolutely helpless. After a year of treatment by daily hot baths, massage, and the administration of cod-liver oil, iron, strychnine, hypophosphite of iron, and tonics, and feeding her on extra diet, she presented the condition shown in the second picture. Arthritis deformans was said to be incurable. It was extremely rare in children. The child had the ability to grow, ahead of it, and could be made to appear somewhat better. At all events, the disease could be checked and the child grow beyond it.

Dr. CARPENTER presented five X-ray photographs taken by Dr. Margaret Cleaves of two cases now under her treatment. One showed the hand of a patient having beginning arthritis (Fig. 3). Careful examination of this revealed slight enlargement of the articular ends of the bones and some cloudiness in the joints between the bones. The other showed the hands and feet of a patient far advanced in the same disease (Figs. 4, 5, 6, and 7). In these it was noted that all of the affected articulations had lost their clear, transparent appearance and were dark in color. He presented also some X-ray photographs loaned to the society by Dr. William J. Morton, calling special attention to one of these, a gouty hand, in contrast with those of arthritis deformans, to show how easily the diagnosis can be made between the two conditions with the aid of the X ray.

Dr. STOWELL said they had an unusually fine series, in that there was rheumatism, arthritis deformans, and gout so distinct and showing the difference in the constitution of the joints, also the photograph in which the external appearance was shown without the radiograph. Certainly the photographs that Dr. Taylor showed were also quite as interesting as the others, although not bearing on the same topic.

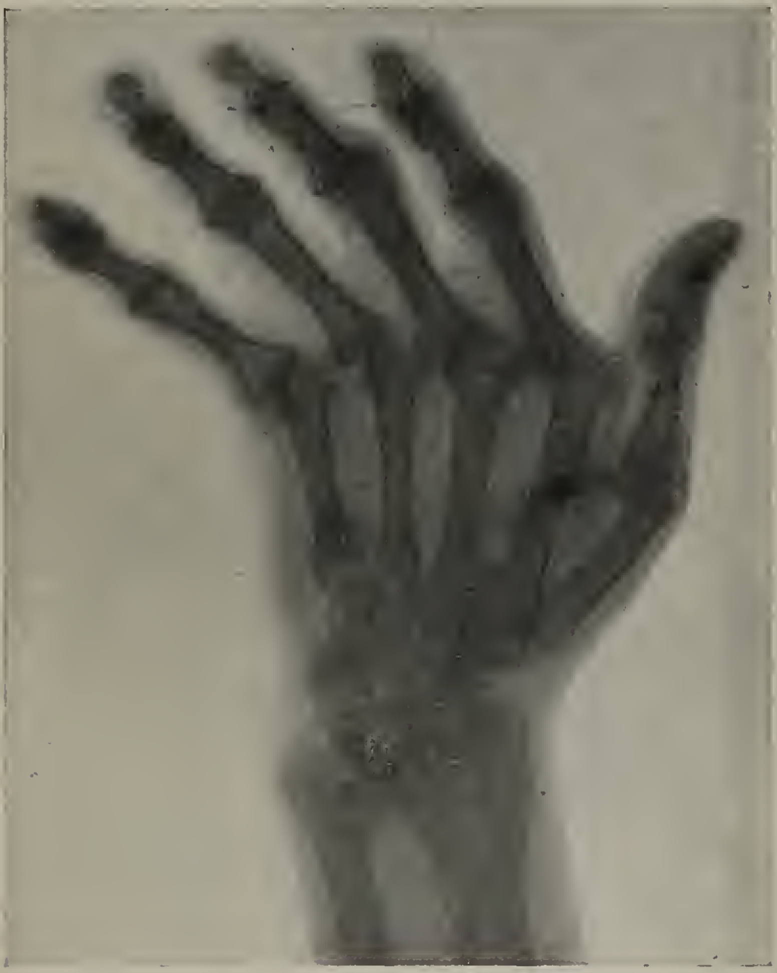


FIG. 4.—Mrs. A. W., aged fifty-two years. Arthritis deformans, thirty-one years' duration; left hand. Taken with eight-plate static machine, January 29, 1898.

Carcinoma of the Kidney.—Dr. GUITÉRAS showed a specimen of carcinoma of the kidney. The patient had been brought to him by Dr. Morey, of Lancashire, New York. He was a man, fifty years of age, of large frame, but seemed to be rather below par and under weight. He had been well up to about a year ago. He had never had any genito-urinary trouble, excepting that fifteen years ago he was struck by a baseball in the testicle, causing a traumatic orchitis, resulting in atrophy of the gland. About a year ago he noticed that he was passing blood in his urine. These hæmorrhages came on every few weeks and lasted from a few hours to a few days. As time went on they became more frequent and lasted longer. He complained of a slight pain in his left lumbar region, and occasional attacks of nausea and indigestion. On examining the patient without an anæsthetic, the speaker could outline a tumor in the left lumbar region. His external genitals were normal, with the exception of the left testicle, which was somewhat atrophied, and there was a large varicocele on that side. Examination of the internal genitals showed the prostate to be slightly enlarged and the vesicles normal. The patient had lost fifty pounds in weight during the last year. Of course, the frequent hæmorrhages coming with the urine would indicate a tumor along the genito-urinary tract. There were no bladder symptoms. The amount of residual urine, two drachms, did not give much evidence of prostatic obstruction.

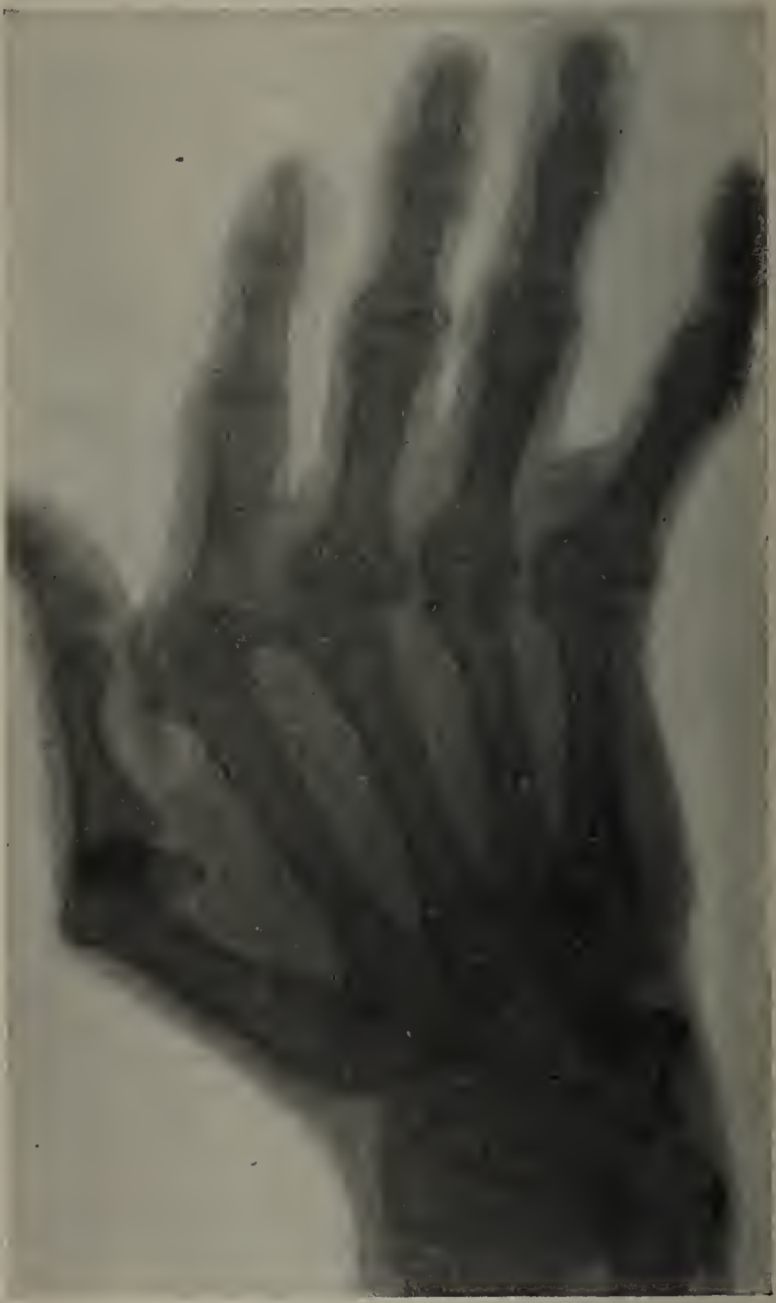


FIG. 5.—Mrs. A. W. X-ray photograph of right hand. Taken with static machine, January 29, 1898.

Analysis showed the urine to be of high specific gravity, acid, reddish yellow in color, and with a slight amount of albumin. There was a great deal of blood present and some pus. There were hyaline, granular, blood, pus, calcium oxalate, and mixed casts. The epithelia present were principally renal. There was much more blood than pus present; no tubercle bacilli were found.

Examination under an Anæsthetic. — Cystoscopy showed the bladder to be slightly congested, but there was no growth, calculus, or tuberculous or other inflammatory condition present. The tumor could now plainly be outlined and extended well down into the iliac fossa on that side.

The loss of weight in this case, and the numerous hæmorrhages occurring with increased frequency, pointed to a tumor, and, as the bladder revealed no growth, and the left kidney was much enlarged and painful, it was evident that this organ was affected, and on account of the age of the patient and the progressive emaciation it was thought probably to be a malignant growth.

Nephrectomy was performed by the usual curved incision in the lumbar region and the kidney extracted. During the operation there was a great deal of hæmorrhage, which came principally from the enlarged veins within the fatty capsule, and the adhesions between the kidney and the surrounding tissues. This hæmorrhage stopped immediately after the pedicle was ligated, which tended to show that an anterior incision might perhaps have been preferable, as then the pedicle could have been quickly ligated, and no hæmorrhage would have occurred.

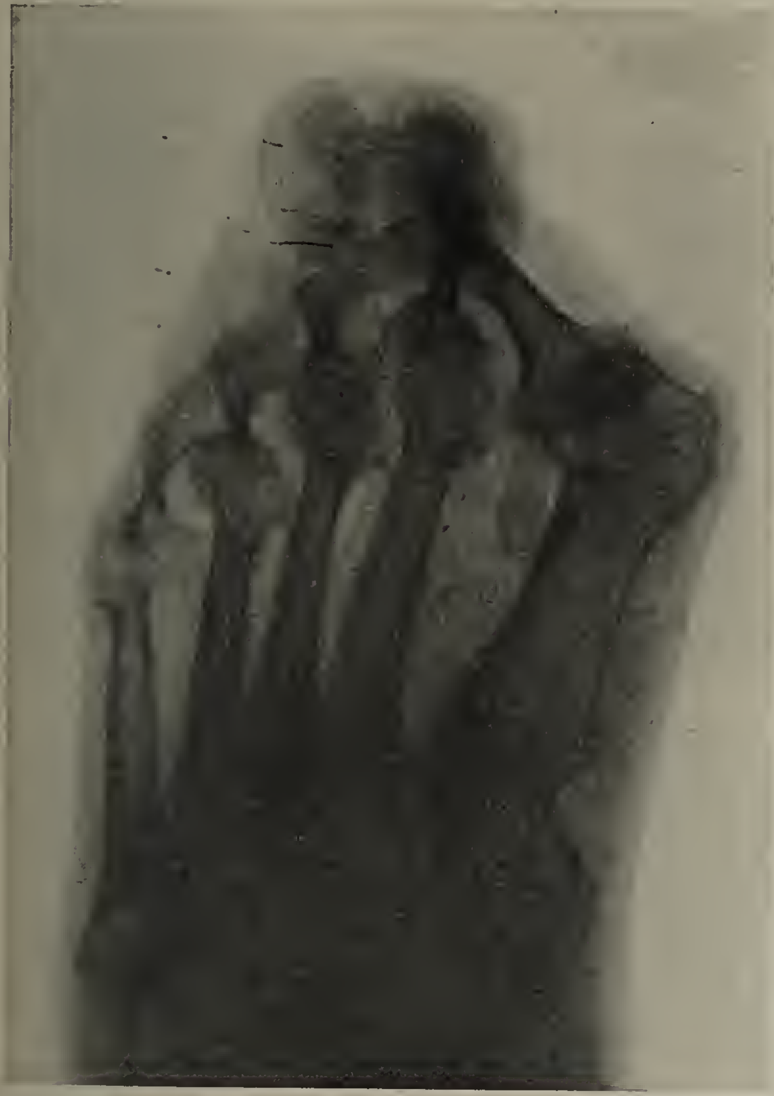


Fig. 6.—Mrs. A. W. Radiograph of left foot; eight-plate static machine, March 8, 1898. Feet purposely taken in this position.

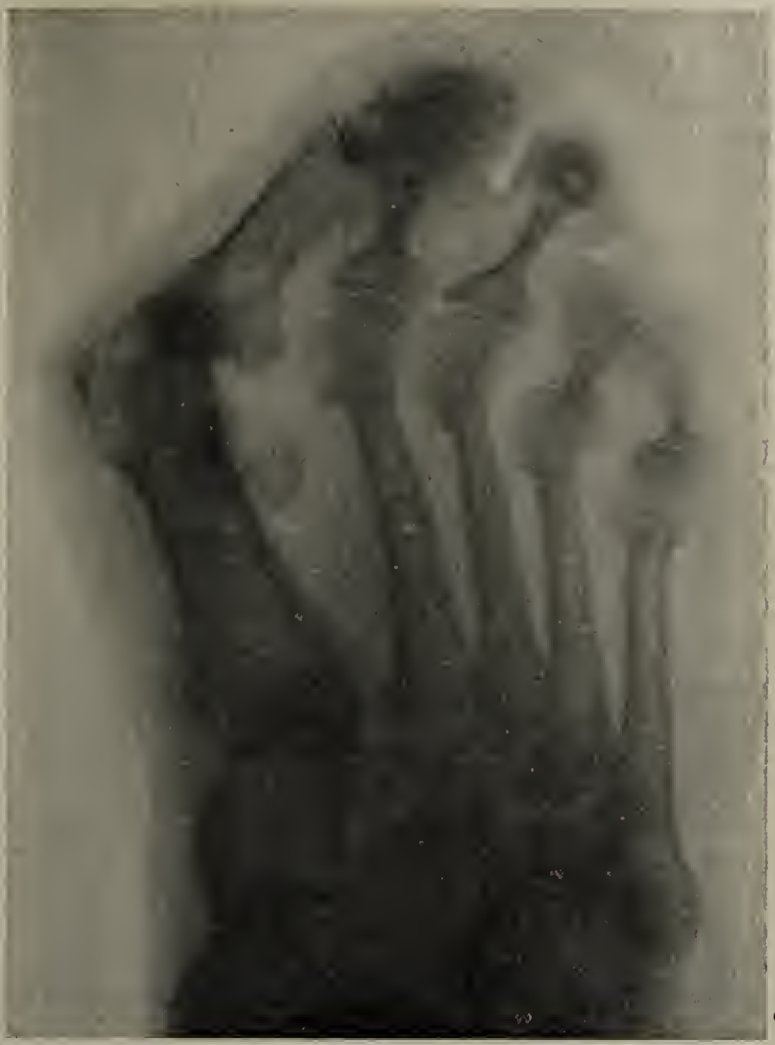


Fig. 7.—Mrs. A. W. Radiograph of right foot, March 8, 1898; eight-plate static machine.

As the patient had lost considerable blood during the operation, transfusion was performed. He was put to bed and given a fortieth of a grain of strychnine and one one-hundredth of a grain of nitroglycerin every two hours. His recovery was uneventful. He remained in the hospital three weeks, and since his discharge has been gaining half a pound a day. The dimensions of the kidney were as follows: Length, eight inches and a quarter; width, four inches and a quarter; thickness, three inches and a quarter; weight, two pounds, which would make it about eight times the normal size (Fig. 8).

After the operation the varicocele on that side disappeared, tending to show the ligation of the renal vein, with perhaps the left spermatic, which empties into it, had the effect of curing the varicosities below, on the same principle as those of the legs are sometimes cured by ligating the internal saphenous.

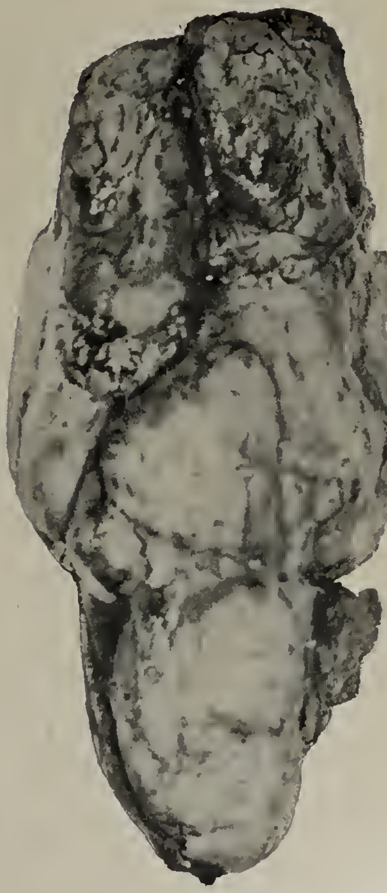


Fig. 8.—Weight, 900 grammes; length, 8¼ inches; width, 4¼ inches; thickness, 3¼ inches.

This is an interesting point, as it is generally thought that the obstruction upon the spermatic vein produces varicocele, and here the vein had been completely occluded by pressure of the ligature upon it.

(*To be continued.*)

tters to the Editor.

INFANTILE MASTITIS WITH A MILKY DISCHARGE.

3439 LUCAS AVENUE, ST. LOUIS, *February 27, 1900.*

To the Editor of the New York Medical Journal:

SIR: Seeing your mention of a case of lactation in a male infant in the January 20th number leads me to report a similar case. I delivered a woman of a male child on January 5th. It came into the world with the cord around its neck; labor otherwise normal. On the third day the child cried almost incessantly and for no very apparent reason. This led me to make a systematic examination, and on doing so I found both breasts enlarged and the left one very tense. On applying gentle pressure, milk was made to exude and I then had the mother suck the breasts, and a tablespoonful and a half of milk was drawn from the left breast, while the right gland yielded about two drachms. The right gland gave evidence of being caked and was the last to regain its normal inactivity. I am informed by the mother that the girl baby born previous to this boy also had the cord around its neck and had milk in its breasts on about the third or fourth day.

C. W. TAYLOR, JR., M. D.

Book Notices.

Imperative Surgery. For the General Practitioner, the Specialist, and the Recent Graduate. By HOWARD LILIENTHAL, M. D., Attending Surgeon to Mount Sinai Hospital, New York City. With Numerous Original Illustrations from Photographs and Drawings. New York: The Macmillan Company, 1900. Pp. xvi–412. [Price, $4.]

THE perusal of this work is a pleasure indeed. It takes one far away from the thoughts inspired by the usual text-book on surgery, with its "ironclad" divisions and its monotony of often-reiterated directions for diagnosis, its unchanging pathology, and the multiple methods of treatment. In this book the author assumes that the diagnosis of a given surgical condition is already made, pathological descriptions are reduced to the minimum necessary to the modification of surgical procedure, and surgical treatment is elaborated to a degree which, it would almost seem, should make operations easy for any man. All surgical operations are not described, however, as the very title of the book implies. Dr. Lilienthal has limited his work to what are ordinarily known as emergency operations—that is, to the description of the technics of surgical procedure in conditions which demand active and immediate surgical intervention. It is in this respect that his book is unique in surgical literature.

Turning now to the contents, we find that the author has "begun at the beginning" by an enumeration of the necessary instruments, dressings, and other essentials in the performance of surgical operations. The number of instruments which can be devised in an emergency from ordinary household articles, as shown in this chapter, is startling; but their description is evidence of how thoroughly the author has considered his subject. A most excellent chapter on the treatment of wounds of different kinds follows, and the discussion of sepsis, asepsis, and antisepsis in these pages is one of the clearest and best that we have ever read. The next two chapters deal with operations in private homes. Every detail of the preparation of rooms for operations, of the preparation of patients for the ordeal, and of the sterilization of instruments and dressings is considered fully, and the author shows in his clear and concise way how perfectly operations can be performed in private homes under conditions which simulate those of a hospital very closely. The emergency preparation of patient and rooms is, of course, most thoroughly described. The author considers anæsthesia and its complications in this chapter, and demonstrates how many major operations it is possible to perform under local anæsthesia.

After speaking of the various forms of special kinds of infection, the author takes up regional surgery of an imperative nature. Conditions which do not demand immediate operative intervention are not considered. The rehearsal of a few of the subtitles will show what the author has included: Cut throat, retropharyngeal abscess, severed tendon and nerve, compound fractures, empyema of the pleura, penetrating wounds of the abdomen, intestinal obstruction, acute inflammation of the vermiform appendix, empyema of the gall bladder, strangulated hernia, acute diffuse peritonitis, ischiorectal abscess, rupture of the urethra, pelvic abscess, ectopic gestation, wounds of the orbit, and acute suppuration of the mastoid process.

The chapters on abdominal surgery are especially complete, and, as we shall subsequently point out, are superbly illustrated. Under the description of each operation, there is a full statement, in detail, of the after-treatment. This includes not only the care of the patient immediately following the operation, but his subsequent treatment, covering the time for removal of sutures and for change of dressings. The importance of this feature of the book is self-evident.

The text throughout is marked by earnestness and thoroughness. There is no ambiguity of procedure; the reader is not left to choose any one of several methods. The choice is made for him, and this is done in a literary style which is exceptionally lucid and concise. The impression that is made by reading the book is one of complete subordination of the unessential to the necessary, of a mass of detail which is clearly set forth and as clearly elucidated, and, finally, of an epitome of an individual surgeon's experience in a branch of the art which, perhaps, is the widest in the saving of life.

It is necessary to speak separately of the illustrations, which are not only numerous, but of a character rarely encountered in medical books. Many are made from photographs, others from drawings; but the distinguishing feature which characterizes them is their remarkable clearness. The series illustrating the operation for appendicular inflammation, for instance, is remarkably true to life: one could almost perform the operation by following the pictures. The excellent work of the publishers in furnishing large, clear type and heavy paper is helpful in bringing out the illustrations effectively and in enhancing the general appearance of the book. The index is especially full and complete.

It is scarcely too much to say that since Dr. Lilienthal's book fills an unoccupied place in surgical literature and because it is altogether scientific and modern, it must prove one of the successful books of the year. Its contents must be of the greatest value to practitioners who, though they rarely operate, are compelled at times to save life by immediate surgical intervention. It appeals as well to the student, for he can learn much from its text which he does not usually hear in his lectures or see in his books. And to the surgeon it is full of good hints and good principles.

Practical Text-book of Midwifery for Nurses and Students. By Robert Jardine, M. D. Edin., M. R. C. S. Eng., etc. With Thirty-six Illustrations. New York: The Macmillan Company, 1899. [Price, $1.50.]

This is a small text-book of obstetrics based on the author's lectures to nurses. It is intended for students and nurses, and can not, therefore, be judged by the same standards as are applied to larger works on the subject. It is written in a somewhat popular style, technical terms being defined or replaced in part by lay language. As a work for study by nurses, it amply fills the field it attempts to occupy; for students, we think, it is a little too superficial, although it covers all the difficulties and complications to be encountered in obstetrical practice.

The chapter on antisepsis and asepsis, which, after all, is of the chief interest to the monthly nurse, is full and thorough, and the author lays sufficient stress on cleanliness as a prophylactic measure. The mechanism of labor is clearly set forth and the description can easily be comprehended by one who is without special training. There is a good chapter on infant feeding. Throughout, the views of the Edinburgh school, at present high in the obstetrical world, are emphasized. We fail to see why the vulgar allusion on page 33, with reference to legends pertaining to menstruation, is forcibly dragged in.

The illustrations are good and clear. We can commend the book to nurses and second-year students for study. There is much in it that is good and of high didactic value.

Gynæcology. A Manual for Students and Practitioners. By Montgomery A. Crockett, M. D., Adjunct Professor of Obstetrics and Clinical Gynæcology, Medical Department, University of Buffalo, etc. Illustrated with One Hundred and Seven Engravings. Philadelphia and New York: Lea Brothers & Co., 1900. Pp. 3 to 368. [Price, $1.50.]

This is one of a series of amplified quiz-compends the purpose of which is to serve practitioners as well as students. It fulfills this purpose well, better, in fact, than most books of its kind. There is sufficient pathology for the reader to base his conception of diseased conditions upon, special stress is laid upon diagnosis, and gynæcological operations are described in a manner worthy of more pretentious text-books. The treatment advocated is that of the most recent and advanced teaching. Emphasis is laid upon methods of diagnosis in a manner calculated to make the student think for himself.

The diagnosis of the various fates of rupture of tubal-gestation sacs is, perhaps, rather fanciful. It is certainly not very practical. Among omissions, we note that hæmatoma of the vulva is not mentioned, and kraurosis vulvæ is not described. The book is excellently illustrated, and some of the drawings are original.

BOOKS, ETC., RECEIVED.

Venereal Diseases: their Complications and Sequelæ. By Edward L. Keyes, A. M., M. D., Late Professor of Dermatology and Genito-urinary Surgery in the Bellevue Hospital Medical College, etc., and Charles H. Chetwood, M. D., Professor of Genito-urinary Surgery in the New York Polyclinic College and Hospital, etc. Illustrated by Eight Full-page Plates in Black and Colors and One Hundred and Seven Engravings. New York: William Wood & Company, 1900. Pp. viii–3 to 356. [Price, $2.75.]

The Yearbook of the Nose, Throat, and Ear. The Nose and Throat. Edited by G. P. Head, M. D., Professor of Laryngology and Rhinology in the Post-graduate Medical School of Chicago. The Ear. Edited by Albert H. Andrews, M. D., Professor of Otology in the Post-graduate Medical School of Chicago, etc. Chicago: Chicago Medical Book Company, 1900. Pp. 3 to 274. [Price, $1.50.]

The Criminal: his Personnel and Environment. A Scientific Study. By August Drähms, Resident Chaplain, State Prison, San Quentin Prison, San Quentin, California. With an Introduction by Cesare Lombroso, Professor of Psychiatry, University of Torino, Italy. New York and London: The Macmillan Company, 1900. Pp. xiv–14 to 402. [Price, $2.]

A Pocket Medical Dictionary giving the Pronunciation and Definition of the Principal Words used in Medicine and the Collateral Sciences; including very Complete Tables of Clinical Eponymic Terms, of the Arteries, Muscles, Nerves, Bacteria, Bacilli, Micrococci, Spirilla, and Thermometric Scales, and a Dose-list of Drugs and their Preparations, in both the English and Metric Systems of Weights and Measures. By George M. Gould, A. M., M. D. Fourth Edition, revised and enlarged. Thirty Thousand Words. Philadelphia: P. Blakiston's Son & Co.,. 1900. Pp. vii–9 to 837. [Price, $1.]

Thirty-fourth Annual Report of the St. Francis Hospital, New York. For the Year ending December 31, 1899.

Tenth Annual Report of St. Mary's Hospital, Rochester, Minnesota. For the Year 1899.

Progress in Pharmacy and Therapeutics. With Index. Reported in *Notes on New Remedies,* from September, 1898, to December, 1899. Lehn & Fink, 1900.

How Far has Specialism Benefited the Ordinary Practice of Medicine? By L. Duncan Bulkley, A. M., M. D. [Reprinted from the *Bulletin of the American Academy of Medicine.*]

Imperfect or Deficient Urinary Excretion as Observed in Connection with Certain Diseases of the Skin. A Study Based on Two Thousand Urinary Analyses. By L. Duncan Bulkley, M. D. [Reprinted from the *Transactions of the American Dermatological Association.*]

Strangulated Hernia: Some Practical Remarks Concerning its Diagnosis and its Proper Management. By Parker Syms, M. D. [Reprinted from the *Journal of the American Medical Association.*]

Some Stray Thought In and Out of Medicine. By John Harris Jones, M. D., of Wilkesbarre, Pennsylvania. [Reprinted from the *Transactions of the Luzerne County Medical Society.*]

Some Considerations in Sugar Testing, with a Description of a Method for the Detection and Estimation of Sugar in the Urine. By Arthur R. Elliott, M. D., of Chicago. [Reprinted from *Medicine.*]

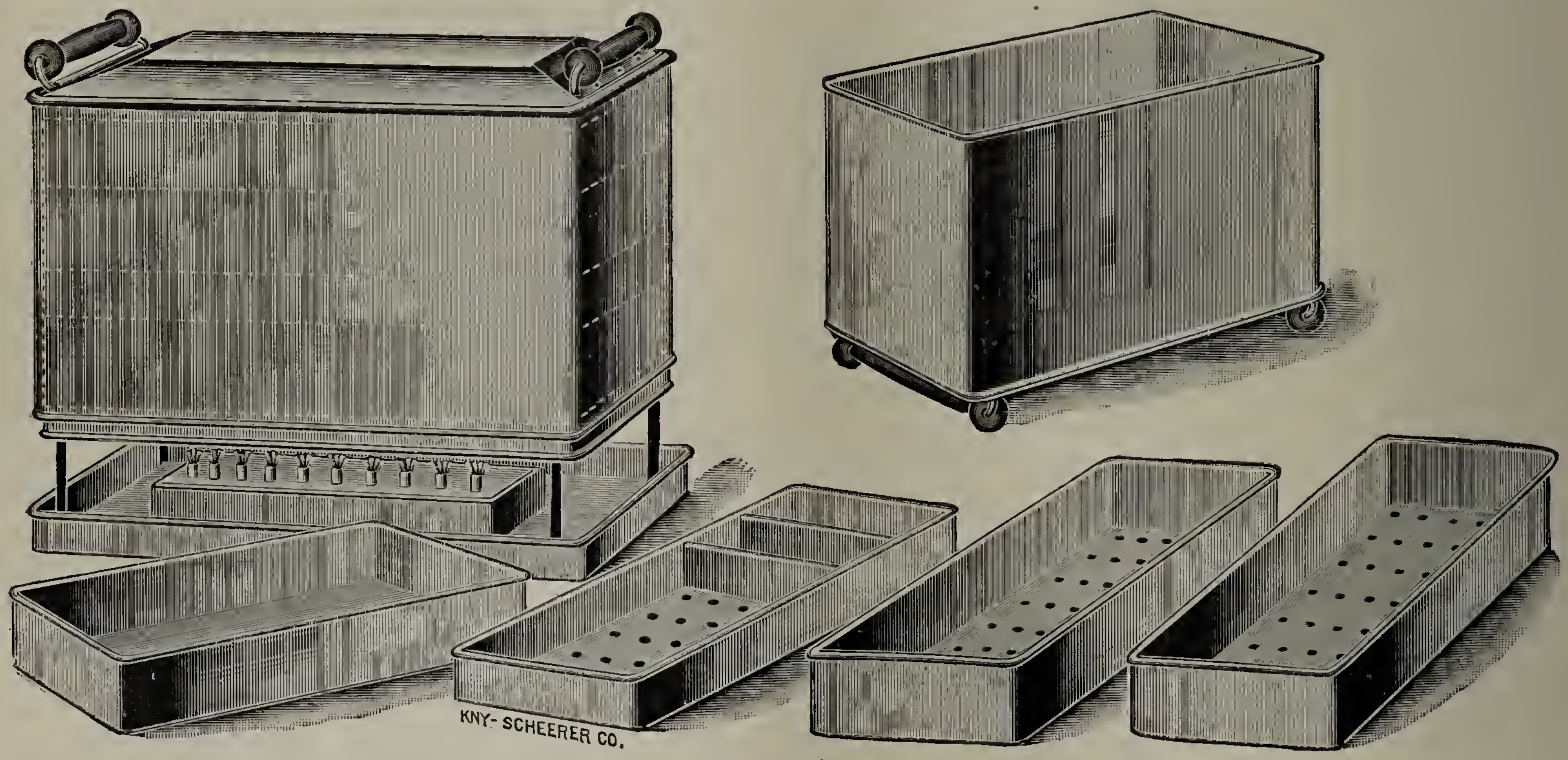
New Inventions, etc.

A PORTABLE STERILIZER.

By Andrew F. Currier, M. D.

For a long time it has seemed to me very desirable to have an apparatus which would not only be efficient as a sterilizer, but would enable me to sterilize all the appurtenances for an operation at the house where the operation might be performed. Furthermore, those who do emergency operations or are called far from home upon very short notice sometimes find it inconvenient to get together within suitable compass everything which can possibly be required for an operation, and they are often compelled to go where there are no suitable receptacles for their instruments, perhaps not even a suitable wash basin.

The problem was, therefore, to construct an apparatus which would not only serve as a sterilizer, but would be portable, would carry all necessary paraphernalia—in fact, would include or accommodate about everything for which an operation might call, except water and possibly sheets and towels.* These requirements have been fairly well satisfied in the apparatus which has been made for me by the Kny-Scheerer Company.



My apparatus consists of a drip pan, 17 × 10 × 1⅛ inches, in which the remaining parts of the instrument sit, and into which the condensed steam from the interior of the jacket falls. In it also sits an alcohol lamp, twelve inches and three quarters long, containing ten upright tubes, which act as so many Bunsen burners when the perforated cover is placed over the top.

In the drip pan sits a nest of four pans or trays, each 16 × 9 inches, fitting snugly into one another. The lowermost is two inches deep and is raised from the surface of the drip pan by iron pins four inches long screwed in at each corner and removable. In this pan or tray the instruments are immersed in two quarts of water to which a handful of carbonate of sodium has been added. The next tray is an inch deep, has a perforated bottom, and is divided into three compartments by two horizontal partitions. This is intended for needles and ligatures, and additional instruments may be laid in it if necessary.

The third tray is two inches and a quarter deep and may contain dressings, gauze pads, etc. It has a perforated bottom.

The fourth tray is three inches and a half deep and may contain aprons, towels, sheets, or any other fabrics which require sterilizing. In the first instrument which was made for me no perforations were made in the bottom of the fourth tray, as I proposed to utilize it in carrying various packages, bottles, brushes, etc., which might be required and which would not need to be sterilized. They could be emptied out if necessary, towels, sheets, or dressings substituted and sterilized, and the tray subsequently used as a wash basin for the hands.

In the second instrument, which was made for the Mount Vernon Hospital, the third and fourth trays were some two inches deeper than in the original instrument, and all the trays, except the lower one, of course, were perforated. This permits the freest possible admission of steam to every portion of the sterilizer.

The series of trays is covered by a jacket, which does not fit tightly, has a convex upper surface, and upon the latter two broad wooden handles upon which the jacket may be rested as a base, and then used as a hand basin, if necessary.

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* When my drawings and plans were submitted to the Kny-Scheerer Company, I was told that they resembled a sterilizer which had been made by them for Dr. E. C. Bolles, of Boston. His apparatus is an excellent one, and has certain features in common with mine. I was entirely unaware of his work until my plans had been matured and presented for execution.

I use half a pint of alcohol in the lamp, and two quarts of water in the lower tray. With the temperature of the atmosphere at 65° to 70° F. steam will begin to be made in five minutes. In twenty-five or thirty minutes the alcohol will have been consumed, and the two quarts of water will have been reduced to a quart and a pint. This may be poured off or the instruments may remain immersed in it. The drip pan may be used as an additional tray for instruments. The other trays may be distributed as required for the purposes of the operation. Each tray has a projecting knob, about a quarter of an inch high, on its lower surface, at each corner, which is all that can come in contact with any surface upon which the tray may be laid. Hooks fit into projections on the inside of either extremity of a tray, by which the tray may be lifted away from those which lie beneath it.

The whole apparatus is carried in a telescope traveling case, 20¼ × 11 × 9½ inches, and when entirely equipped with every essential for an operation weighs about twenty-five pounds. I have found it a great comfort to be able to grasp such an arrangement at a few moments' notice, and to feel that I was prepared to go on with the very minimum of delay. The sterilizer is made of nickel-plated copper, and the cut on the opposite page gives a very fair idea of its appearance.

321 Lexington Avenue.

Miscellany.

The Clinical Significance of Duplication of the Uterus and Vagina.—At a meeting of the New York Obstetrical Society, held on February 13th, Dr. Brooks H. Wells read a paper in which he traced the development of the uterus and vagina embryologically and from the standpoint of comparative embryology. In the human female the normally complete development or fusion of the Müllerian ducts was occasionally arrested, and there might then be a reversion to certain of the more primitive types, or a maldevelopment which might lead to serious interference with the genital functions and the welfare of the individual. The most common mark of an imperfect fusion of the Müllerian ducts was a hymeneal opening divided into two by a vertical band of tissue. Next in frequency was a more complete vaginal sæptum, then a partition extending partly or entirely through the uterine cavity, attended by a broadening of the fundus and by the more and more complete separation of the cornua, until we reached the extreme of two entirely distinct uteri and vaginæ. The possibility of atresia always existed because of the unequal development of the two sides. The chance of impregnation was not diminished unless there was actual occlusion at some point, and the difficulty or danger of delivery was not very much greater than normal unless the fœtus was held in the rudimentary horn of a double uterus. Dr. Wells reported four cases illustrating the deformities due to maldevelopment.

In the discussion Dr. Dickinson said that an interesting feature of cases of double uterus lay in the fact that when these patients bore children, gestation took place alternately in the right and left uterus. Dr. Cragin narrated several cases in which the vaginal sæptum had interfered with delivery, rendering its incision or the removal of the hymen, in one case, necessary. Dr. Currier told of a number of cases of these deformities which had come under his notice. Dr. Wells spoke of the amusing errors which sometimes arose in these cases because one physician had examined through one vagina and another through the other. An interesting question in gestation in one half of the uterus, in cases of double uterus, was that of whether the uterus would dilate sufficiently for the child to be born. If it did not, the gravid horn should be removed, even at the sacrifice of the child, since the children of such pregnancies were usually weak and ill-developed and did not live long.

American and European Surgery.—A writer in the *Post-graduate* for February, comparing, presumably from abroad, European with American surgery, says:

"Technically American surgery is fully abreast and, in our opinion, rather in advance of that now being done on the other side of the water. Our incisions are smaller and more accurate; our closure of wounds, particularly of the abdomen, are much more carefully done than theirs; our tissues are treated with more respect than they show."

Of appendicular inflammation he writes:

"It seems strange to an American to find appendicitis still treated in the medical wards and still classed as typhlitis and perityphlitis, yet this is true throughout Germany. They make fun of our appendicitis operations, and meanwhile allow their own cases to go on to suppuration. Operation for this condition is only done when suppuration necessitates it, and then the abscess is opened and drained simply, the appendix is not removed. Truly the great surgeons of Europe might get some important information on the pathology of this affection in our own country."

Queen Amelie, of Portugal, M. D., and the Plague.—The *Medical Age* for February says that Queen Amelie, of Portugal, is a real heroine. She is the only crowned head who has acquired by study and real examinations the right to add the letters M. D. to her name. The queen has shown much courage and sympathy for the suffering in connection with the outbreak of the bubonic plague at Lisbon, and was with Dr. Pestana, one of the leading physicians of Portugal, when he succumbed to the disease. The moment Dr. Pestana discovered that he had contracted that terrible malady, the queen went to his bedside and devoted herself to his care. With astounding courage and force of will the sick man assumed the duty of recording his own symptoms. How important this was may be gathered from the fact that panic is believed to be one of the causes of a fatal result. But Dr. Pestana was calm to the last. His last words to the weeping queen were: "I have only five minutes to live; the tetanic spasms have returned. Adieu, madame. I deeply thank your majesty for having honored my deathbed by your presence. Do not approach me, as my breath is dangerous." He then breathed his last in a sort of convulsion.

Big-gun Practice as an Ecbolic.—The *Canadian Journal of Medicine and Surgery* for March is responsible for the following:

"A Boer journal of Vryheld tells a comic yarn which will bear repetition in a medical journal, as it shows the influence of terror on the animal organism. A battery of artillery, wishing to have some practice with the guns, the officers bought fifty goats and had them tied on the top of a kopje. After bombarding them for an hour or so the officers went up the hill to count the surviving goats and found fifty-one! One of the goats had dropped a kid."

[In spite of the progress in modern armament among the Boers, we feel constrained to ask if the "long bow" has yet been entirely discarded.]

A Reception in Honor of Dr. Charles G. Stockton, of Buffalo, was given on Thursday evening, March 8th, by the Medical Club of Philadelphia, at the Hotel Bellevue.

The Mütter Lectureship of the College of Physicians of Philadelphia.—The next course of ten lectures instituted by the late Professor Thomas Dent Mütter, M.D., LL.D., on some Point or Points in Surgical Pathology, will be delivered in the winter of 1902–1903 before the College of Physicians of Philadelphia. The compensation is six hundred dollars. The appointment is open to the profession at large. Applications, stating in full the subjects of the proposed lectures, must be made before October 1, 1900, to the Committee on the Mütter Museum, John H. Brinton, M.D., chairman, northeast corner of Thirteenth and Locust Streets, Philadelphia.

The New York Academy of Medicine.—The programme for the last regular meeting, on Thursday evening, March 15th, included the following papers: Cancer of the Breast, by Dr. Robert Abbe, and Cancer of the Uterus, by Dr. Henry C. Coe.

At the next meeting of the Section in Ophthalmology and Otology, on Monday evening, March 19th, cases will be presented by Dr. Thomas R. Pooley, Dr. W. B. Johnson, and Dr. J. H. Claiborne, and the following-named papers will be read: Remarks on Thrombosis of the Cavernous Sinus, based on a Case still under Treatment, by Dr. H. Knapp, and The After-treatment of Tenotomy, by Dr. Alexander Duane.

At the next meeting of the Section in Medicine, on Tuesday evening, March 20th, the subject of rheumatism will be treated of in papers by Dr. Hughes Dayton, Dr. L. A. S. Bodine, Dr. J. J. Walsh, Dr. T. E. Satterthwaite, Dr. H. W. Gibney, and Dr. W. J. Morton.

At the next meeting of the Section in Obstetrics and Gynæcology, on Thursday evening, March 22d, Dr. J. B. Cooke will read a paper entitled Some Points in the Management of Obstetric Cases in Private Practice.

At the next meeting of the Section in Laryngology and Rhinology, on Wednesday evening, March 28th, the subject of chronic atrophic rhinitis will be considered in papers by Dr. Francke H. Bosworth, Dr. Jonathan Wright, Dr. Clarence C. Rice, Dr. Thomas R. French, Dr. D. Bryson Delavan, and Dr. Charles H. Knight.

A Japanese Graduate in Nursing.—We learn from the *New York Tribune* for March 5th that Miss Shidzu Naruse, of Kobé, Japan, was among the recent diplomates in nursing at the New York Hospital. She comes of a wealthy family of social distinction, and it is her intention to return to Kobé and found a hospital modeled after the most approved American methods.

A Proposed New Hospital.—According to the *New York Tribune* for March 5th, the Board of Managers of the French Benevolent Society will undertake the building of a larger hospital than the society now conducts and supports without pecuniary aid from the State. The sum of $400,000 is required for the purchase of the site and the erection of new buildings. Of that amount $200,000 has been subscribed.

An American Surgeon in the British Forces in South Africa.—A former medical officer of the New York National Guard, writing from Modder River under date of December 19, 1899, where he was serving with Lord Methuen's field force, makes the following interesting remarks, which we quote from the *Army and Navy Journal* for March 3d:

"The Royal Army Medical Department has worked wonderfully well. Every praise is due to Colonel Townsend, who is the senior medical officer. The Mauser bullets are very merciful, but when one comes across the effects of expanding bullets, of which the Boers use many, one can not suppress an expression of one's feelings. Last week we had reverses in all the columns, but this week we hope for better luck. I often wish I were with the old 12th N. G. N. Y., and sometimes when we have had a hard day in the heat and dust, I have wished it were a dream and that I could awaken at the Peekskill camp, where water and beautiful scenery make camp life ideal. Nothing much will be done for some time, as we must all wait for reinforcements. The Boers hold very strong positions and have good guns and the best German, French, and Scandinavian officers, so we can not take everything by storm with inferior numbers. One hundred and twenty thousand men at least will be required, for our lines of communication, both in Natal and the Cape Colony, have to be strongly guarded, as all the Colonial Dutch, with few exceptions, are rebels, and would destroy the railways if they could do so without danger to themselves. England has a hard nut to crack this time. Every medical officer has to go into action with his unit, and as I am attached to the Imperial Scouts, I have a chance to see all the fighting. When the war is over, if I have not lost the number of my mess, I will write again if you can stand such lengthy epistles."

The Society of Medical Jurisprudence.—At the meeting of Monday evening, March 12th, the special order was a paper by Mr. Stephen C. Baldwin entitled The Medico-legal Field of Actionable Negligence.

A Bill to Prevent Irregular Practice in Maryland.—According to the *Boston Medical and Surgical Journal* for March 1st, a bill is now before the State legislature of Maryland restricting the practice of medicine to duly qualified physicians, and providing that "any person shall be regarded as practising medicine within the meaning of this act who shall attempt to heal, operate on, or prescribe for any ailment of another." A public hearing brought out a large number of Christian-Science remonstrants. The wording of the bill, says the *Journal*, is perhaps rather too comprehensive, though it will no doubt tend to suppress the practice of Christian Science.

Potassium Permanganate in Purulent Ophthalmitis.—According to the *Fort Wayne Medical Journal-Magazine* for February, citing the *Journal of Eye, Ear, and Throat Diseases* of unspecified date, a new case of purulent ophthalmitis in the adult is reported to have been cured by the use of a ten-per-cent. solution of potassium permanganate applied twice daily to the everted palpebral conjunctiva.

THE NEW YORK MEDICAL JOURNAL, March 24, 1900.

Original Communications.

WHAT PRECAUTIONS SHALL WE TAKE TO AVOID LEAVING FOREIGN BODIES IN THE ABDOMEN AFTER OPERATIONS?

By HOWARD A. KELLY, M. D.,
BALTIMORE.

In our abdominal surgery in making use of gauze and sponges to hold back the intestines, so as to gain an unobstructed view of the field of the operation, the surgeon is always in imminent danger of leaving one of these foreign bodies within the abdomen, to prove a source of infection or of death in the near or remote future.

Such an accident is most liable to occur in the more prolonged and difficult operations and when there is more or less intestinal tympany. In these cases, in the process of separating many adhesions, numerous pieces of gauze are often packed into the abdomen, and in the lapse of half an hour or more the surgeon, engrossed in the operation, has forgotten the number of napkins and sponges he has used, and becomes therefore wholly dependent upon the count kept by an assistant. The risks are still further increased if it has been necessary to have recourse during the operation to the original stock of supply to furnish more gauze and more sponges.

Most dangerous of all are those cases in which an inexperienced assistant has neglected to keep a careful account of the number of pieces in use and does not hesitate to give a positive assurance that "all are out of the abdomen."

Without doubt, every surgeon of any considerable experience has suffered in this way one or more times.

I well recall in my own experience in Philadelphia performing an exceedingly difficult hysteromyomectomy in which I used drainage, as was the custom then; a day or so later I found a hard body in my drainage tract, which proved to be an artery forceps. This is the only time I have ever known an instrument to be left in the abdomen in my practice. The patient died as a result of a frightful hæmorrhage from the left uterine artery during the operation. Another experience in Philadelphia was in the case of a woman with pelvic abscesses on both sides whose husband had an orchitis when he married her. I was obliged to leave town soon after operating upon her, and upon returning was informed that she was doing badly. On opening up the wound I was fortunate enough to discover a foul marine sponge just under the abdominal wall. This was removed, a drain was left in, and she recovered.

During my residence of ten years in Baltimore three additional cases have come under my personal observation:

The first patient was a woman, aged twenty-six, who had "a tumor in her side."

On examination, there was found a firm, rounded mass, eighteen by ten centimetres, somewhat movable, and not sensitive on palpation, extending from the right anterior superior iliac spine toward the median line and about four centimetres above Poupart's ligament. The pelvic organs were normal, no relationship being made out by vaginal touch between the uterus and the growth.

Operation by my First Assistant Gynæcologist; Median Abdominal Incision.—The tumor was found to be a large fibrous growth springing from the transversalis fascia. The abdominal cavity and the pelvis were not involved. The mass was excised, after much difficulty, from the densely adherent surrounding tissues of the right abdominal wall and several centimetres of the underlying peritonæum were removed with the tumor. The hæmorrhage was excessive, but finally perfectly controlled, and the wound closed with silkworm gut and catgut sutures.

Convalescence.—For ten days after operation the patient's general condition appeared fairly satisfactory. The first dressing was made at this time and healing *per primam* had taken place. The temperature rose to 101.8° F. on the evening of the second day, but after twelve hours fell to 100.4°. For the next seven days the temperature ranged between 98.5° and 100.5°, and the pulse between 90 and 110, varying its rate with the height of the temperature. On the eleventh day the temperature rose to 102.5° and the pulse to 120, and both remained elevated afterward, but with marked diurnal variations, suggesting sepsis. The general condition of the patient was fair; little pain or discomfort was complained of.

On December 5th, twenty-eight days after operation, for the first time a smooth, boggy, movable mass was detected, extending from the median line to the left flank.

Second Operation, Twenty-eight Days after the First.—Under chloroform anæsthesia an incision was made over the swelling and a piece of gauze weighing three hundred and sixty grammes was removed from a cavity apparently completely walled off from the general peritoneal cavity. Much thick, greenish pus was evacuated and the abscess cavity sponged and irrigated. A counter incision was made in the left flank and iodoform gauze placed in the bottom of the cavity and brought out of the lateral opening. The wound was then closed.

After this operation the temperature soon became normal. The wound was irrigated and dressed daily. The purulent discharge gradually subsided and the drain tract granulated vigorously.

Third Operation, on the Forty-third Day.—Suddenly, during irrigation of the wound with fifty-per-cent. boric-acid solution, the patient cried out with pain, and her condition became alarming: the face anxious and livid, lips blue, hands and feet cold, and pulse 130 to 140. The abdomen was negative on examination. As the condition of the patient did not improve after three hours, an exploratory cœliotomy was made opening the cavity of the abdomen; several hundred cubic centimetres of bloody fluid were found, evidently introduced through the drain tract at the time of the irrigation. But few intestinal adhesions were met with, and the peritoneal surfaces were for the most part smooth. Several pieces of iodoform gauze were introduced into the pelvis, the ends being brought out at the lower angle of the abdominal wound.

This was followed by an uninterrupted recovery; the drainage was gradually removed, and her temperature and pulse were normal during the last three weeks of her stay in the hospital. She was discharged "well" on January 16, 1899.

The next accident of this sort occurred in a woman, aged forty-five years, whose abdomen was markedly distended by a large fluctuating growth; she was much emaciated, very weak, and anæmic. The pulse was 130 and thready in character. The urine contained no albumin, but many casts. The diagnosis of a large ovarian cyst was made, the cyst was evacuated by paracentesis, and two weeks subsequently, when she had gained considerably in strength, the tumor, a multilocular ovarian cyst, having dimensions 25 × 29 × 8–10 centimetres, was removed. The operation presented no unusual difficulties. She was simply profoundly exhausted on returning to the ward, but responded to treatment and gained slowly in strength. The wound dressed on the tenth day, was found to have healed *per primam*.

From the ninth day after operation there was some irregularity of temperature, which, before normal, now ranged daily from 97° to 99.5° F. After the twenty-second day these variations became more marked, varying from 97.5° to 101.5° F. The pulse remained rapid throughout, and the general condition did not improve. She had a slight attack of pleurisy in the sixth week, followed by an irritating persistent cough. Some sordes collected in the mouth, yielding slowly to treatment. She was restless at night, extremely nervous, and had a capricious appetite, but there was nothing to suggest an abdominal complication until two months after operation, when a slight prominence in the abdominal wall was noticed. The elevation was six centimetres in diameter and lay six centimetres median to and above the anterior superior iliac spine. Distinct fluctuation was detected at its summit.

Second Operation.—On the seventy-fifth day after the cystectomy, under chloroform anæsthesia, a free incision was made over the prominence and an abscess cavity entered, completely walled off from the peritoneal cavity, and a large gauze pad removed. A considerable quantity of purulent material was evacuated and the wound washed out and packed with iodoform gauze.

Almost immediately afterward the temperature fell to normal, and did not rise subsequently above 99.4° F. The improvement from this time, though slow at first, was steady, the appetite increased and she gained steadily in weight and strength.

She was discharged "well" on March 9, 1899, a hundred and twenty-nine days after admission. Seen recently, about a year after operation, she was found to be in the best of health and about fifty pounds heavier.

I was not so fortunate in the last case, occurring within a year. The patient had an ovarian cyst as large as a man's head and a vermiform appendix sharply flexed and bound down by adhesions. The operation, a simple cystectomy, with the removal of an adherent vermiform appendix, proceeded in an entirely satisfactory manner, and at the end of the operation, upon inquiring of a trusted assistant of large experience whether any gauze was left, he counted carefully and assured me all had been removed.

The patient has suffered for years with severe headache and pain in the left lower abdomen, thought by her physician to be due to sciatica.

For three days after the uncomplicated operation the patient's condition was fairly satisfactory. She was nauseated following the ether anæsthesia, but had a good night, with a pulse ranging from 87 to 104. On the second day she became somewhat restless, and there was frequency of micturition, followed by involuntary voiding. There was no marked abdominal pain.

The temperature during these three days rose once to 100.5° F., the pulse was of good volume, varying in rate from 87 to 110. Nourishment was well taken, and the bowels were easily opened.

The restlessness persisted, however, and a severe burning pain was complained of in the abdomen.

On the fourth day she became more nervous, and the abdominal distress increased when she began menstruating. About noon considerable intestinal distention was noticed, the tongue became parched, and there was some nausea. These symptoms seemed to abate under palliative treatment, but that night, the fourth after operation, the temperature rose to 103.4° F., the pulse to 118, and she became evidently weaker. Urine and fæces were then passed involuntarily and the abdominal pain increased.

The next day the abdomen was opened under chloroform anæsthesia. The intestines were found distended, reddened, and covered with lymph. On the right side of the abdominal cavity a large piece of gauze, adherent to bowel and surrounded with pus, was discovered and removed. The pelvis contained several ounces of bloody serum.

After this second operation the temperature reached 105.2° F.; the pulse was weak, 110 to 124 a minute. There was marked asthenia and she did not respond to vigorous stimulation; the incontinence of urine and fæces continued. The temperature rose to 106° and pulse to 140, weak and running, and she died quietly at 6 P. M.

It will be seen from these records that the foreign body may begin to make trouble shortly after operation, as in the last case cited, when decided symptoms, becoming progressively more alarming, were first noticed on the fourth day. In other instances the gauze and sponge may remain latent for a long period. In two of the preceding cases the first dressing was made on the tenth day and the wound found healed throughout. In one of them the gauze was not removed for twenty-eight days, and in the other for seventy-five days.

The chances of the gauze remaining innocuous are enhanced if the operation is aseptic and the operator and assistants have worn gloves.

In each instance there has been finally an elevation of temperature, at first moderate, then more marked, with considerable daily variation, and an increased pulse rate.

In two cases the presence of a foreign body was not suspected until the symptoms were localized and a definite semifluctuant prominence was found in the abdominal wall with tenderness and reddening.

I have thus pointed out a danger which, in view of my own experience and of the experiences of others, as shown in the excellent articles of Dr. H. P. C. Wilson, Dr. Henry Elsner, Dr. Herman C. Boldt, and others, is a very real one, and imminent in all those cases in which the operation is so prolonged that the technical details absorb the attention of the surgeon, or in which, owing to fat and protruding intestines, unusual difficulties are added, requiring the use of more gauze than was expected at first.

The vital question is how to avoid the occurrence of this most serious accident in the future. If we are to give up and to declare that in rare instances with all our pains it is unavoidable, then I can think of no better plan than that of making a routine use of gauze and sponges impregnated with some such substance as bismuth or iodoform, or dyed with an iron salt, so that as soon as any untoward symptoms are noted the X ray may be used and the foreign body discovered in the abdomen. Not willing, however, to acknowledge the necessity for accidents of this sort even in the rarest instances, I would offer the following stringent rules, to be observed at all operations:

1. In the first place, always commence with a definite number of pieces. I begin my operations, for example, with seven marine sponges and nine pieces of gauze, an ample provision for the average case.

2. Write down upon a slate or a piece of paper the number of pieces of gauze and sponges in use.

3. If more are added, it is the duty of the assistant to instruct the nurse to write them down at once and to receive from her a statement as to how many she has recorded.

4. I would, with Boldt, urge the entire abandonment of small pieces of gauze and small sponges.

5. Avoid packing pieces of gauze up in the abdomen out of sight.

6. The use of a bit of tape, as recommended by Boldt, attached to the corner of the gauze and left hanging out of the wound with a forceps clasped on the end, makes a safe tracer, although this, too, has failed as an absolute safeguard.

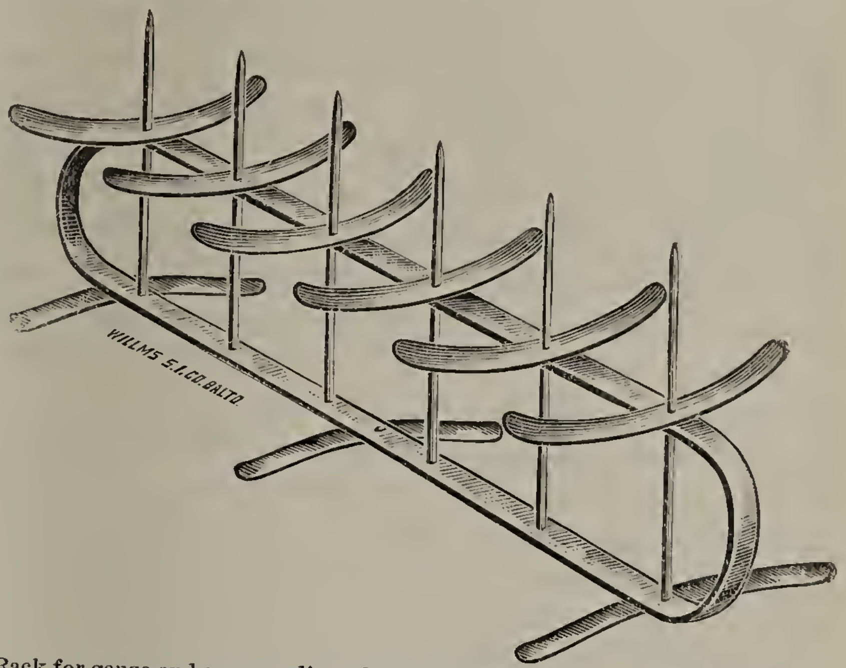
7. If marine sponges are used, they may be inclosed in a loose gauze bag with a tracer similarly attached; sponges held in long forceps do not need a tracer.

8. The operator should put the simple questions, at the close of the operation, How many pieces of gauze are called for, and how many sponges are called for? These questions should be answered without circumlocution or explanation by the simple, direct statement of the numbers wanted. In order to keep my assistants on the alert, and as a means of training them to be extremely careful, I occasionally hold back a sponge or a bit of gauze, and do not give it up until they insist that it is wanting.

9. Never under any circumstances should the count be muddled by cutting the gauze or dividing a sponge.

10. It is my practice to make two people responsible for the number of pieces used, as well as for their production at the end of the operation; these are the assistant, who handles the sponges, and the nurse. In some clinics, where fewer assistants are used, it will be necessary to place all the responsibility on one head, either nurse or first assistant.

11. The discarded gauze or sponges must always be thrown into a receptacle, and never, under any circumstances, mixed with soiled dressings, towels, or sheets, or, worst of all, carried out of the room during the progress of the operation. I have had made, for the purpose of facilitating the counting of these articles, a simple wire frame like that shown in the cut. The discarded gauze pads are thrown over the horizontal bars and the sponges are spiked on the sharp pins. In this way soiled articles collected in a definite place can be counted without handling them.



Rack for gauze and sponges discarded during an operation. The gauze is hung over the flat horizontal strips and the sponges are spiked on the points. There is room for twelve pieces of gauze and six sponges.

12. In addition to all the precautions noted the surgeon must always exercise his vigilance in taking an exact note of everything that is put in the abdomen, and it may be of service to memory to state aloud, "One sponge introduced into the abdomen," "Two pieces are now in the abdomen," etc.

13. An examination should be made in all cases to see by actual inspection and by touch that nothing has been left behind. Such an examination will not, of course, be pushed to an extreme unless there is a missing article to be discovered.

Methylene Blue in Cerebral Excitement.—According to the *Journal de médecine de Paris* for January 21st, Bodoni has shown that methylene blue is capable of calming the excitement of mental patients, and he has administered this drug to such patients by injecting a grain and a half into the thickness of the muscular tissue. M. Vallon and M. Wahl, prompted by Bodoni's researches, tried the drug by the mouth as a hypnotic among the mentally unsound, but the results were not satisfactory.

THE SHELDON MURDER TRIAL:
RÉSUMÉ OF THE EXPERT TESTIMONY FOR THE STATE.

By WILLIAM S. CHEESMAN, A. M., M. D.,
AND
ALBERT H. HAMILTON, PH. G.,
AUBURN, N. Y.

(*Concluded from page 364.*)

IN the light of these experiments we will discuss the pathological appearances in Mrs. Sheldon's case one by one.

1. *The Bullet Hole.*—This was round and clean cut. In all our experiments on the cadaver from contact up to four inches, the holes in the scalp and bone were lacerated and much larger than sufficed for the ball's passage. We do not lay great stress on this point, but so far as it goes it is against the shot having been fired within four inches of the head.

2. *Contusion of Tissues.*—As Dr. Phelps well says, this indicates simply hæmorrhage. It is, therefore, impossible to reproduce upon the cadaver. And it can not, at any rate, assist in determining range. Manifestly, a good-sized arterial or venous trunk may be as readily severed by a distant as by a near shot. So that subcutaneous blood-soakage may in either case be extensive.

3. *The Spot upon the Ear.*—On the tip of the ear, just in the line taken by the bullet, was found a contusion. This was five eighths of an inch long, black, was due to blood in the tissues, and was likened by one observer to a blood blister. A small deposit of lead was found here, and identified by chemical analysis. This lesion was interpreted by the prosecution experts as having been produced by the passage of the ball, which, it will be remembered, entered the skull on a line just a twenty-fifth of an inch above the tip of the ear. Therefore, if our interpretation was correct, the muzzle of the pistol must have been somewhere outside the tip of the ear.

Dr. Phelps, while admitting that the ear was contused during life, denies that this excludes a contact shot, since it may have been contused by the recoil of the pistol. That mere recoil could have produced such a contusion on a soft, freely movable object like the ear tip seems to us fanciful. Besides, there was the lead. Of this Dr. Phelps says: "Lead particles, as well as grains of powder, may escape through the space between the barrel and the chambers and be found behind whatever line may have marked the position of the muzzle." Mrs. Sheldon's ear tip stood out half an inch from the side of the head. The pistol barrel was two inches and a quarter long. So, if the shot was made at contact, the space between barrel and chambers was an inch and three quarters distant from the ear. We are asked to believe that a particle of lead leaves the pistol at right angles through the space mentioned; then, for an unknown reason, abruptly changes its direction in the air and reaches the ear tip an inch and three quarters in front of its starting point, and this while the pistol barrel is in close contact with the ear tip, thus protecting it from any such erratic lead particles (Fig. 3).

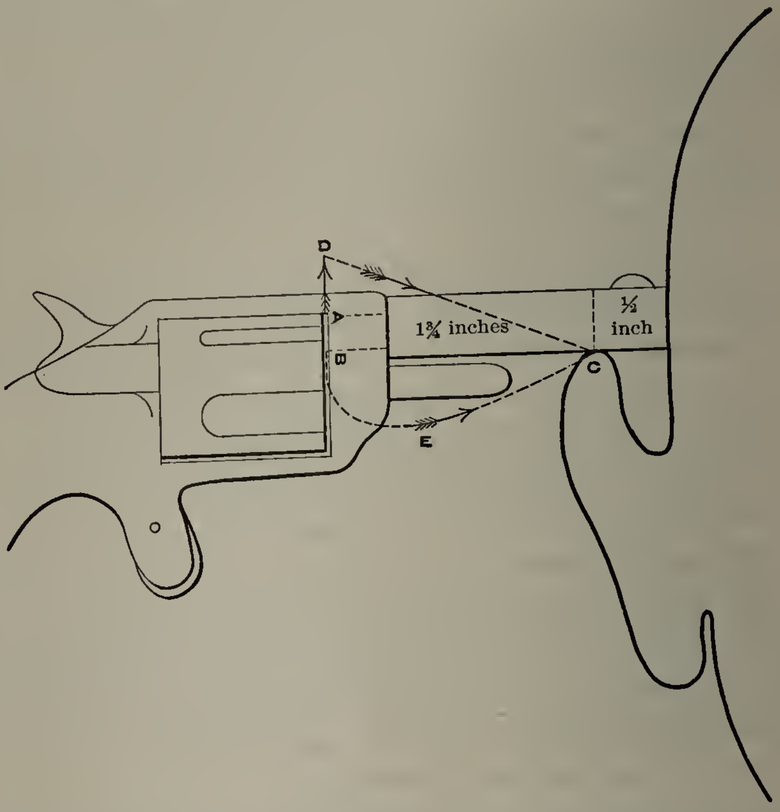


FIG. 3.—Shows a Colt's five-chambered 0.30-calibre revolver under conditions assumed. From some point of the space *A B* a particle of lead is supposed to be projected at right angles to the pistol. It must then for unknown reason turn at an acute angle at some point, as *D*, or at a sharp curve, as *E*, in order to reach *C*, the tip of the ear, which is already protected by the pistol barrel.

On the whole, we see no reason to change our opinion that the spot in question was caused by the bullet, and that it places the point of discharge somewhere out beyond the tip of the ear.

4. *Powder Marks.*—These may be considered as almost the most important criteria for judging of the range at which a shot has been fired. Our experiments show that grains of unburned powder are projected from the Sheldon pistol in ever increasingly wider distribution, from nearly zero at contact up to an area of twelve to fifteen inches at three feet. The accompanying diagram, prepared from records of shots at cadavers, presents these facts visually.

It will be observed that at the ranges within a fraction of an inch the force of the exploding gases blows into the scalp and sometimes into the skull a much larger hole than is necessary for the passage of the ball. The scalp edges are thereby scorched, lacerated, and inverted. Some powder is blown into them, but most of it follows the ball, and is found between the scalp and the skull, and within the skull itself. Not till the muzzle is nearly an inch away does a measurable deposit of imbedded powder grains regularly appear on the skin about the wound. We call particular attention to the fact that at all ranges from six inches and a half to a fraction of an inch the powder grains blown into the skin are practically innumerable, and many can not be washed out. Commenting on this point, Dr. Phelps says: "At ranges of a quarter of an inch to three feet, and even more, in the use of a pistol of this calibre, a certain number are likely to remain immovable, even after thorough ablution. If the site of injury is unprotected by hair, and at ranges of a fraction of an inch to several inches, it is probably inevitable." This admission is important, but any one familiar with the performances of the Sheldon pistol must regard it as very grudging. The fact is that at any of the ranges named the Sheldon pistol simply blows the skin full of powder grains, irremovable by washing, over areas varying with the muzzle distance. The significance of these results can not be evaded by calling in the protection afforded by hair; for the ball in Mrs. Sheldon's case entered just above the tip of the ear, and, granting that the hair obstructed the entry of powder grains above that point, there remains the other semicircle of powder deposit to be accounted for—viz., over ear and temple. If, then, the shot was fired anywhere within the six inches and a half where she could have held the pistol and pulled the trigger with the finger—or, for that matter, if it was fired at nineteen inches, and the trigger pulled with the thumb—why were only three scattered powder *stains* discovered, which washed off? This the defense sought to answer by supposing that the pistol was fired at or near contact, which explains the stress put upon contact shots in the hypothetical question, so puzzling to Dr. Phelps.* If the defense admitted that the pistol could have been fired at any other range, they were lost; thus the issue narrowed down to the question of contact.

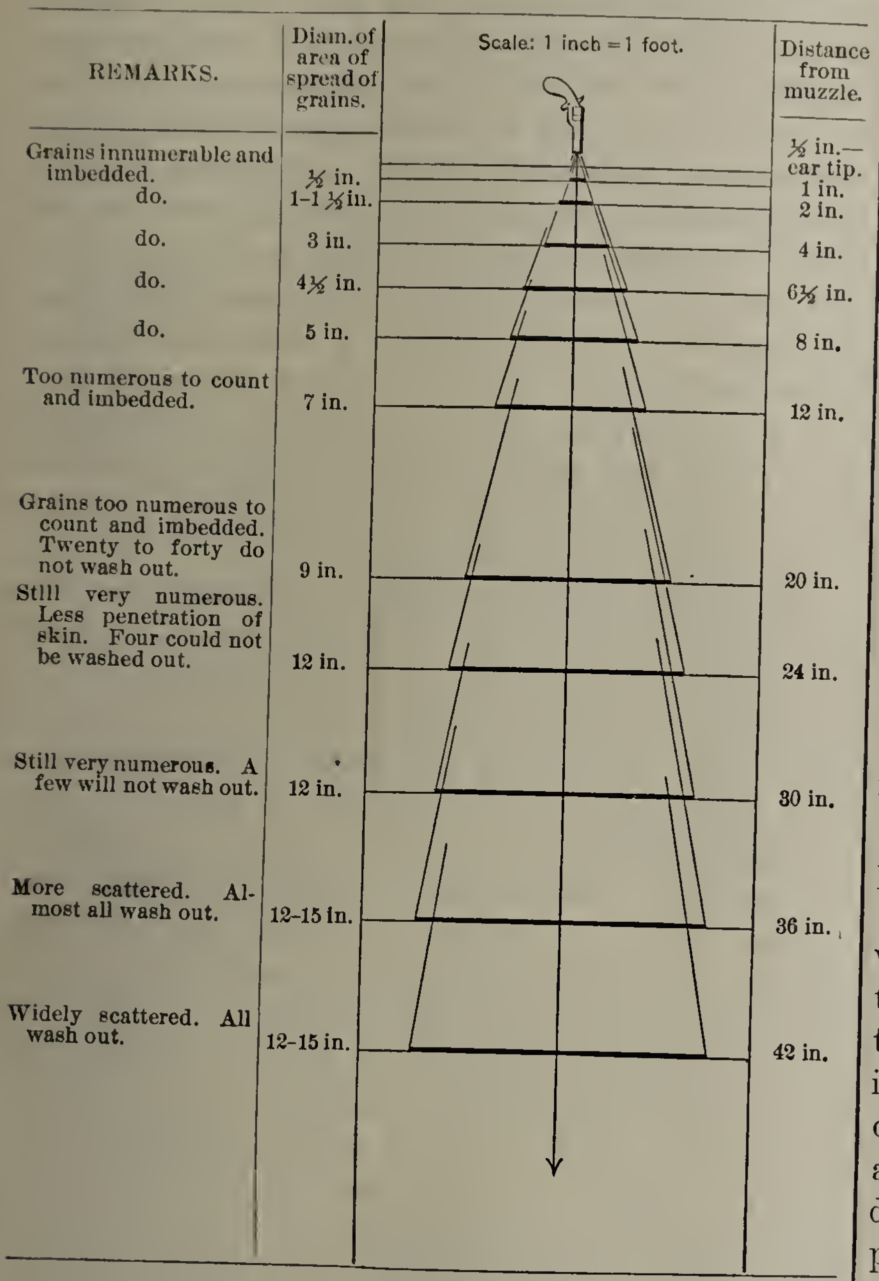

REMARKS.
Diam. of area of spread of grains.
Scale: 1 inch = 1 foot.
Distance from muzzle.
Grains innumerable and imbedded.
do.
do.
do.
do.
Too numerous to count and imbedded.
Grains too numerous to count and imbedded. Twenty to forty do not wash out.
Still very numerous. Less penetration of skin. Four could not be washed out.
Still very numerous. A few will not wash out.
More scattered. Almost all wash out.
Widely scattered. All wash out.
½ in.
1-1½ in.
3 in.
4½ in.
5 in.
7 in.
9 in.
12 in.
12 in.
12-15 in.
12-15 in.
½ in.—ear tip.
1 in.
2 in.
4 in.
6½ in.
8 in.
12 in.
20 in.
24 in.
30 in.
36 in.
42 in.

FIG. 4.

Just how much hair was found burned in Mrs. Sheldon's case should be clearly borne in mind. It consisted of not less than eight, possibly ten or twelve, hairs, and was within an area of a fifth of a square inch, and adjacent to the bullet hole. It was a singeing merely. The coroner did not detect it at all during his first examination of the body, and at the second autopsy it could be seen with the naked eye by the experts for the prosecution only in a strong light, and after it had been located with a magnifying glass.

5. *Burning of Hair.*—The flame of the discharge of the Sheldon pistol extends from eighteen to thirty inches from the muzzle, and after the flame ceases the particles of powder ignited by it go on burning some distance farther, as was shown by targets covered by absorbent cotton, which could be set afire at distances of four feet. This did not show that hair could be burned at distances beyond six inches and a half, but it explained the fact after it had been shown.

The question as to the greatest muzzle distance at which the Sheldon pistol will singe hair is a most important one. Our experience with this weapon showed that at distances from five eighths of an inch to four inches the hair was burned to a crisp down to the scalp, on every side of the wound, in an area of from an inch and a half to two inches in diameter, varying with the distance. Dr. Phelps, in his experiments with a different pistol of the same calibre, found that "at ranges of a quarter of an inch to two inches it was invariable in a series of twenty-three cases, and was oftener than otherwise a mere singeing of the tips, and was limited to one side of the wound, or to an area of an inch or less; at ranges of three to five inches it was no longer constant, and was slight and confined to the margin of the wound." These differences seem explicable only on the ground that different pistols and ammunition produce different results.

At six inches and a half, in experiments on the cadaver, hair ceased to be burned; but, as already stated, the hair of these cadavers was damp. When dry hair was used, it was still burned and shriveled all about the bullet hole, and could be burned at much greater distances, though there was no regularity in the matter. Thus, for instance, in one series of experiments with the old cartridges, singeing of a group of eight or nine hairs was produced three times in succession at twenty-four inches, and not at all in seventeen other shots at ranges varying from nine to twenty-six inches. It was our experience that burning of hair at distances past six inches and a half became entirely a matter of chance. A few grains of the deteriorated powder seemed now and then to cling together, escape combustion until near the end of the flame, then fly burning to a longer range, and, falling among the hairs, singe them. This is a matter of opinion, perhaps; but it was a matter of fact that the Sheldon pistol with the old ammunition could burn hairs at ranges much greater than six inches and a half. Therefore the presence of a few singed hairs in Mrs. Sheldon's case does not necessarily show that the fatal shot was discharged within six inches and a half.

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* It should be remembered, however, that another question, viz., whether or no the fatal shot was fired within six inches and a half, was asked, and not admitted by the court.

Distance at which the Shot was Fired.—Two theories have been offered upon this point—one by the defense, the other by Dr. Phelps. As already said, the defense were driven to claim that it was a contact shot. In order to complete our statement, it is necessary to give our reasons for rejecting this theory. Arranged in parallel columns, the criteria of a contact shot by the Sheldon pistol and ammunition are given, and the lesions discovered in Mrs. Sheldon's case:

CONTACT SHOT.	SHELDON WOUND.
1. Bullet hole in scalp and bone much larger than necessary for passage of ball, and irregular.	Bullet hole in scalp and skull small, round, and regular.
2. Edges of wound lacerated.	No laceration.
3. Skin scorched about wound, and full of powder grains over a narrow margin.	Skin not burned about the bullet hole; no powder here.
4. Smoke deposit an inch to an inch and a quarter in diameter about the hole, and in osseous wound.	No smoke deposit about or in the wound. Skull perfectly clean.
5. Hair blown away in radiating direction from the wound.	Hair lying smooth.
6. Hair, when burned, scorched to the scalp and all around the wound.	Eight to twelve hairs singed merely.
7. Scalp lifted from the skull, and a solid residue of smoke and powder grains beneath it.	Absent.
8. Smoke and powder stains follow ball into skull for variable distance, even to point of lodgment of ball on opposite side.	None found.
9. None.	Contusion on tip of ear and lead particle adherent to it.
10. None.	Powder stains (three, perhaps more in number) on tip of ear and temple.

It should be said of the above phenomena characteristic of contact shots that they vary in value, and that some may or may not be present in a given case. This is true of all symptomatology. It is on an assemblage of symptoms pointing in one direction, and seldom on one pathognomonic sign, that diagnosis rests. We note throughout Dr. Phelps's article a tendency to ignore this important principle.

One of the difficulties of the contact theory was to account for the presence of powder stains on the tip and rim of the ear and the temple. It was sought to explain these by supposing that in such a shot powder grains could leave the space between barrel and chambers and be projected against the face. This is identical with Dr. Phelps's notion regarding lead particles, above alluded to, and was met by the objection that the powder particles must for an unknown reason change their direction in midair. A contact shot on the cadaver was reported by the defense in which three powder grains were found resting on the cheek and temple, but were readily brushed off. It is quite conceivable that in firing at a cadaver lying on a table some powder grains coming from the breech might be thrown into the air, and fall upon any part of the head, or face, or neck. But this is quite a different matter from powder stains which persist after one free ablution (by the coroner), as in the case before us.

We do not intend to reopen a discussion of this question with the defense. With Dr. Phelps we need not discuss it, as we are gratified to note he agrees with us that the fatal shot was not fired at contact. It remains only to examine his theory, tentatively propounded as making suicide possible. He says: "It may be held as proved from the subcutaneous conditions attested that it was not fired at contact; and from the burning of the hair that the distance was not more than five inches. It is merely a presumption that the range was approximately four inches."

But it has already been shown that with the Sheldon pistol hair may be burned at ranges greater than six inches and a half. Let us clearly understand Dr. Phelps's position. He abandons the contact theory, which, if suicide was to be claimed, had probability and naturalness to recommend it, and proposes another which is intrinsically improbable, and which his own admission has rendered untenable. For he concedes that with his pistol at four inches, one half to two thirds of the "exceedingly numerous" powder grains inevitably remain fixed in the skin even after thorough ablution (page 741). And we can assert that with the Sheldon pistol the upper part of Mrs. Sheldon's ear would at this range have been indelibly tattooed with numberless powder grains, and that, in addition, the hair about the wound would have been burned to a crisp. None of these conditions existed.

But in discussion of scientific matters it is well not to magnify differences. Pleasanter and sometimes equally profitable it is to dwell upon matters on which there is agreement. We advert with satisfaction to certain vital points in regard to which Dr. Phelps coincides with us. He admits:

1. That the greatest distance within which Mrs. Sheldon could have held and discharged the pistol was six inches and a half (page 668).

2. That the shot which killed Mrs. Sheldon was not fired at contact (pages 743, 747).

3. That it is "probably inevitable" at ranges of a

fraction of an inch to three feet, that a "certain number" of powder grains—the number varying with the range—remain even after thorough ablution (page 743).

With these admissions Dr. Phelps becomes an unconscious and unwilling, but therefore the more valuable, witness for the prosecution; and it is an agreeable surprise that the results obtained by an independent and even hostile investigator confirm, if they do not actually establish, the contention of the State, that Mrs. Sheldon did not commit suicide.*

GOUT AND RHEUMATISM:

THEIR ÆTIOLOGY AND DIETETIC TREATMENT.†

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The dietetic treatment of rheumatism and gout necessitates first a clear understanding of the ætiological factors that enter into their production. At this point we at once encounter a variety of opinions, both as to the ætiology and as regards the pathology of the two conditions, some of which are probably true while some are erroneous.

The weight of evidence, however, both chemico-physiological and clinical, points clearly to a defective oxidation on the part of the system as the chief predisposing factor in bringing about the pathological conditions that are so well known under the time-honored names rheumatism and gout. But what causes the suboxidation, and why, in the one instance, it assumes the type designated rheumatism, and in another gout, is not fully explained by simply attributing the pathological condition solely to suboxidation.

There is but one chief cause for a suboxidation state of the animal economy—namely, the taking into the system of more oxidizable food products than there is oxygen absorbed through the lungs to completely reduce the proteid constituents to the end products which we are taught should be produced by a normal physiological state of the system.

On the other hand, diminution in the food supply, together with that of a poor quality, may be the determining factor in producing a suboxidation condition of the system and thus act as the predisposing cause in producing the rheumatic condition. In this instance the progressive malnutrition causes an increasing anæmia until, finally, the food that is taken does not encounter within the system sufficient oxygen for its perfect oxidation, and thus suboxidation is excited.

Attributing the pathological condition to a suboxidation state of the system does not, however, explain clearly why in one case the result is rheumatism and in another it is gout. This was attempted at one time by assuming from the general clinical history that those who partook freely of the starches and saccharine substances developed rheumatism, while those who lived largely upon the animal class of foods and used freely alcoholics usually developed gout. There are so many exceptions to this general rule that a simple explanation upon the basis of too much food, or too much of a certain kind, does not satisfactorily elucidate this very intricate problem of suboxidation and its resulting pathological changes in the system. At the same time it must be clear to every close clinical observer that in the majority of instances overindulgence in certain kinds of food products certainly plays a very important part in determining the character of the suboxidation process.

The development of the rheumatic condition can not be explained, as was done at one time, by assuming that the so-called lactic-acid or rheumatic condition is due to the imperfect oxidation of the sugar and starches alone, while the uric-acid or gouty condition is due to the imperfect oxidation of the proteid constituents. While the latter is true the former is not, because we are taught by the physiological chemists that imperfect oxidation of the starches and sugars with the formation of lactic acid is untenable. Assuming that such a condition is true from a purely chemical standpoint, it does not explain the development of the rheumatic condition as often witnessed clinically in those who live almost exclusively upon an animal diet. Therefore, such a theory is absolutely untenable both from the chemico-physiological and clinical data at our command. Hence, we are forced to the assumption that the lactic-acid or rheumatic condition, like the uric-acid or gouty state of the system, is due to imperfect oxidation of the proteid constituents contained in the system. This accepted, our theories can be made to fit all the clinical facts and cases.

In none of the suboxidation conditions does uric acid, or any of the other catabolic products found in the excreta, constitute the disease; they are simply excrementitious products that should be considered in the light of results of the imperfect oxidation or as symptoms, but never as the pathological process.

As there seems to be so much confusion in the minds of many regarding the true position of uric acid, it may not be unprofitable to enter a little more into the detail of the formation of uric acid and its significance in connection with health and disease.

Uric acid is one of the substances by which nitrogen is eliminated normally from the system, and is an almost insoluble and very stable substance. It is dibasic, having two replaceable hydrogen atoms, one of which is easily substituted by sodium, forming an acid urate, or biurate, of sodium. Both of the replaceable hydrogen atoms can be substituted by sodium, but, so far as is known, only the acid salt is a product of the animal economy. This urate is relatively soluble. Uric acid is formed by the oxidation of the proteid molecule or its derivatives, and is a lower oxidation product than urea.

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* We have reviewed Dr. Phelps's objections to our methods and argument (summarized on page 746), and believe each has found an answer in the preceding pages. Certain other criticisms on the conduct of the trial, its prolixity, the personal attacks on experts, etc., concern only the counsel for defense and prosecution, and do not come properly within the purview of this discussion.

† Read before the Society of the Alumni of the City (Charity) Hospital, November 8, 1899.

It has been claimed by some that uric acid is not an oxidation product, and they base their claim on the fact that this acid and its salts are the normal and complete excrementitious products in birds, reptiles, etc., in which animals the oxidation powers are said to be exceedingly high. However, there is nothing to prove the capacity of birds, reptiles, etc., to take in oxygen, or of their blood to distribute this oxygen, and of their system to utilize it, and that it is sufficient to oxidize all the assimilated hydrocarbon and the proteid compounds into their final and complete products. At any rate, to draw such an inference is begging the question. The chemical fact remains that their excreta, as compared with those of the higher order of animals, are products of a lower proteid oxidation. Why, in one species, the chemico-physiological apparatus of the animal economy is so constructed that uric acid and its urates are the final excrementary product, while in another it is urea, is just as mysterious and absolutely unfathomable as the phenomena of life and death. In what follows we shall endeavor to show that in man the production of uric acid in quantities above the normal is due to a condition of suboxidation.

The two most prominent theories advanced to explain the genesis of uric acid in the system are: 1. That it is an oxidation product manufactured in the renal cells. 2. That it is made in some manner in the liver, spleen, etc., but chiefly in the liver. The latter view is the one which has been accepted generally, and on the following grounds: First, that uric acid is found in the blood; second, that in gout it is found in the tissues; third, that after extirpation of the kidneys uric acid continues to be formed; and, fourth, that at the height of digestion, when the liver and spleen are most active, uric acid is most abundant in the urine.

In this connection it may be remarked that in all the experiments which have been brought forward to sustain the theory that uric acid is formed outside the kidney, or in the liver, there have been produced profound abnormal or pathological states of the system. Therefore they should be completely discarded from a physiological standard, as all deductions based thereon are upon a pathological basis, and not normal.

The claim so commonly made that free uric acid is found in the blood is not tenable, for, on coming into close relation with the alkali metals, salts of the same are immediately formed. Therefore, if this nitrogenous organic acid were in the blood, it would be in the form of a urate only, and such a salt has never been found in the blood. The statement that uric acid does exist in the blood is based upon Haycrafft's method for detecting uric acid, or upon others of a similar nature. As they all admit the possibility of oxidizing the proteid elements, and thus producing uric acid in the process for detecting this compound, they can not be relied upon as proving the existence of uric acid in the blood.

On the other hand, again, it has been distinctly affirmed that free uric acid and its biurate salts do not exist in the blood, and the method called upon for explaining the possible presence, in some form, of uric acid in the blood is by the so-called "quadurate" (quadriurate) theory. The following statement, made by the author of this theory, in his description of his method for obtaining the quadriurate, tends to prove that the quadriurate—if it really has a chemical existence—is an accidental rather than a constant product; for he says: "To obtain a product of uniform composition by this process requires a somewhat nice adjustment of the reaction. If the quantity of alkaline carbonate added be faint, the precipitate, on cooling, is apt to be contaminated with free uric acid. On the other hand, if the alkaline carbonate be added too freely, and the resulting alkalescence be excessive, the precipitate is apt to be contaminated with biurate. These risks are greatly minimized by using the alkaline acetates instead of the alkaline carbonates." From this it appears that Roberts failed to obtain the quadriurate with the regular uniformity necessary to establish his theory; in fact, the nice adjustment of the reagents required for the precipitation of the quadriurate might lead one to believe that, with this test, the precipitate was a mixture of biurate and uric acid, in quantities to satisfy the theoretic demands for the quadriurate.

In Watt's *Dictionary of Chemistry*, vol. iv, p. 835, edition 1894, is the following: "NaHA + $\frac{1}{2}$ aq. (dried at 100°) = crystalline powder. Occurs as an amorphous urinary deposit." This statement, together with the fact that the alleged quadriurate is an amorphous deposit and very unstable, makes it appear highly probable that the biurate is still the form of urate most commonly found in the urine. It is not necessary to find a more soluble form of urate than the acid urate, for it is well known that the disodic monohydrogen phosphate, which is often present in the urine in abundance, will hold large quantities of uric acid in solution. It is also known that the uric acid steadily attacks the disodic monohydrogen phosphate, so that when the acid phosphate, which will not hold the uric acid in solution, has replaced the neutral phosphate, the uric acid is precipitated—all of which occurs naturally, and without adding anything to the urine.

The quadriurate, as has been said, is a very unstable compound and one that is easily broken up by washing with water. This being the case, its decomposition and the subsequent demonstration of the uric acid and the biurate in the blood should be easily accomplished. No mention is made, however, of finding the so-called quadriurate in the blood, but it is introduced artificially into the blood serum and synovia, and from this it has been claimed that it can exist in the blood; but failure to demonstrate its presence directly in the normal blood stream is negative proof that it does not exist in that medium. The production of the quadriurate in the system necessitates first the production of uric acid. So far, in connection with the quadriurate theory, we are in total ignorance as to the point where the uric acid is manufactured, also as to where the uric acid attacks the sodium compound to form the theoretic salt, and where the latter finally gains access to the blood. Until these doubtful points have been cleared up satisfactorily, the quadriurate theory is one grand speculative problem, which does not explain the facts as developed by clinical observation.

From all the preceding, it can be justly deduced that uric acid and its urates have not as yet been clearly demonstrated in the normal blood stream. That uric acid and its urates are found in the tissues in pathological conditions is true. This, however, does not necessitate the assumption that uric acid or its urates exist in the blood stream in defiance of all the known laws of chemistry. But it does demand the hypothesis that, as a result of a faulty nutrition, there is developed an imperfect and abnormal transmutation of the proteid compounds; that, as a result, these substances are oxidized at an abnormal position, instead of in the renal cell as normally occurs; that when this is the case there is a sudden production of uric acid and the formation of urates in the protoplasmic masses, and that when this happens all the symptoms are those which indicate a profound irritation and an increased chemical activity. Thus, by assuming a vicarious production of uric acid, a theory which holds true in many other abnormal or pathological conditions in the body, the presence of uric acid, or rather the urates, in the tissues is explained by simple chemical phenomena, and without deviating from any well-defined law of chemistry. All this can be explained without predicating that uric acid or its urates are present in the blood.

The pathological condition which is produced by the extirpation of the kidneys will admit of the formation of uric acid by the vicarious oxidation of the proteid substances in the protoplasm of cells other than those of the renal gland, upon the same principle as given in the foregoing example.

Upon the theory that uric acid is due to a deficiency in the quantity of oxygen reaching the body as a whole, and the renal cells in particular, the manufacture of uric acid by the kidneys should normally be greatest during digestion and least during the intervals; for, during digestion, the carbohydrates, fats, and proteids are being introduced into the circulation in large quantities. The two former are rapidly oxidized, the one in the liver and the other in the lungs, tending to use up the oxygen supply, so that a deficient amount of oxygen reaches the kidneys and a less perfect transmutation of the proteid is the result in the renal cells, while the output of uric acid is augmented. Thus, a normal physiological phenomenon, which is called upon to explain the production of uric acid in the liver instead of in the renal glands, when viewed in this light makes it appear quite plain that no such deduction is justified. It rather strengthens the theory which points to the renal cell as the true source of the uric-acid production, except in pathological states of the system, when it can be made at abnormal points by the vicarious action of the protoplasmic masses.

This theory of uric-acid production by the oxidation of the proteid substances in the protoplasm of the renal cells is by far more logical, is best sustained by all the points in evidence, and fits most accurately all the known facts and conditions. This formation of uric acid is one method for the elimination of nitrogen from the system. It is absolutely necessary to have this acid produced at this particular point, and poured into the uriniferous tubules; for by its action upon the disodic monohydrogen phosphate in the uriniferous tubules the monosodic dihydrogen phosphate is produced, and the production of this acid phosphate of sodium is absolutely necessary to hold the otherwise insoluble phosphate of calcium in solution, thus preventing the formation of calculi in the urinary passages.

The theory that the uric acid is produced in the renal cells in the manner described above is further substantiated by the steady presence of this acid or the urates in the urine, and by its absence from the blood.

When uric acid is herein contrasted with urea as a suboxidation product, it is not meant to intimate that uric acid is the direct antecedent to urea. On the contrary, it is one of the complete end products of proteid oxidation, so far as the animal economy is concerned, just as much as urea, carbon dioxide, and water are final products. Chemically, less oxygen has been utilized to produce this particular form of compound than is required to produce urea and the other higher oxidation products. Physiologically, when produced in excess, it is a suboxidation product, for it is found that the output of uric acid is always augmented by anything which interferes with the utilization of the full amount of oxygen by the system, as compared with the quantity of food stuffs absorbed. A prolonged high tension of the arterial system, under the influence of digitalis, for instance, causes the blood to be driven through the capillary blood-vessels so rapidly that sufficient oxygen cannot be taken up from the blood and utilized for the complete transmutation of the proteid elements of the food; as a result, suboxidation occurs, and the manufacture and output of uric acid by the renal cells are increased. The same is true with every condition of the system which produces a prolonged high tension of the vascular system and a rapid pulse rate. When the intaking capacity of the lungs for oxygen is diminished by mechanical defects in the heart or by pneumonia, pleurisy, emphysema, etc., the oxidation of the proteid substances falls to an abnormally low degree, the excretion of urea decreases, and that of uric acid increases, the latter often to a marked degree. When the carbohydrates or fats are taken in excessive quantities, and especially the former, the oxygenating capacity of the system is exceeded, the more difficult task of oxidizing the proteid elements is imperfectly performed, suboxidation ensues, and, as a result, uric acid increases in the urine, while the urea output decreases. When an excessive amount of the proteid substance is taken, either alone or in combination with the carbohydrates and fats, the oxygenating capacity of the system is exceeded in a similar manner, and the proteids are imperfectly oxidized as before.

When the uric acid rises above the normal, it is simply a symptom found in the urine which indicates an imperfect state of proteid oxidation and a general condition of malnutrition. This suboxidation may be, in a measure, caused by many different conditions acting singly or in combination—causes which may arise either in the nervous, digestive, circulatory, or in the respiratory system. In every instance there is more or less profound impairment in the glandular activity and nutritive tone throughout the whole system. In some instances one organ or tissue will suffer more than another, and thus the symptomatic manifestations are varied and irregular in their development. When the renal cells temporarily cease to act, thus failing to produce uric acid, the associated defective state of the nutrition results in many instances in the various masses of protoplasm throughout the body, which are now in an abnormal physiological state, assuming an abnormal or vicarious action. In this manner the proteid substances are oxidized into uric acid in the cells of the tissues with the immediate production of the urate of sodium. This abnormal oxidation may occur in the protoplasmic mass which is in this state of malnutrition, but it is most commonly met with in the cartilage cells of the metatarso-phalangeal articulation of the great toe. It does, however, occur in other parts of the body and in other tissues than the cartilaginous structures. This development of uric acid in the cartilage cells, or at other points of the body, results in its immediate precipitation at such points as a urate of sodium. This abnormal deposit acts as an intense chemical irritant, and excites a local inflammatory process by which a fibro-plastic exudate is thrown around this foreign body until the urates are finally encapsulated, and gradually all the local symptoms subside.

The problem has further been very much simplified by the fact, now generally recognized, that all the non-nitrogenous food products, such as starch, sugar, and fat, are directly oxidized into carbon dioxide and water, and that they do not yield any toxic by-products to the system. Therefore, we are left to deal chiefly with the proteid constituents as the ætiological factors in the production of these toxic and suboxidation conditions of the system. This much established, we still have no clear and complete explanation for the different degrees and forms of the suboxidation processes which constitute the various diseases, such as rheumatism, gout, etc.

Strenuous attempts have been made in this bacteriological age to associate a specific germ with all pathological problems, and in many instances this has apparently been successfully accomplished. Still, the declaration of the presence of a specific germ as the causative factor in the production of disease does not explain in full the special and characteristic features of the pathological lesions found, or the symptoms by which the different diseases are characterized. Working along this line, several observers profess to have found a specific germ as the causative factor in the production of rheumatism. These observations, however, still lack satisfactory confirmation. Nevertheless, it is reasonable to suppose that in conjunction with overfeeding the action of bacteria is largely responsible for the production of many of the various types of suboxidation that are encountered. They act, however, more by their presence in the alimentary canal, and by their disturbing influence upon the digestive processes, than by their inherent presence within the system. Therefore, as the result of some special kind of micro-organism acting in the alimentary canal, or as the result of two or more varieties acting together, it may be assumed that abnormal or toxic products are produced in the alimentary canal, which, when introduced into the circulation with the food stuffs, act as the determining factors in establishing the special degree or form of suboxidation that we know by the names rheumatism, gout, etc.

This line of argument is sustained, so far as the symptoms are concerned, by the fact that with the introduction of certain chemical compounds into the system definite symptoms follow, as when morphine, strychnine, etc., are introduced. Why morphine, strychnine, etc., are always followed by a pretty uniform train of symptoms depending upon the special one used has never been absolutely explained. Yet no one attempts to deny the fact. In like manner it is reasonable to suppose that the symptoms of disease are the result of the introduction into the system of definite chemical compounds; that these chemical products either emanate directly from the micro-organism or are produced from the proteid constituents by the action of the bacteria upon the proteid molecule. In these suboxidation diseases under consideration the action of the bacteria is on the proteid constituents as they exist in the chyme rather than upon those which exist as integral parts of the body.

Thus we find that the great predisposing factor is the prolonged intake of a larger amount of nutritive pabulum than can be perfectly oxidized; or conditions that so reduce the oxygenating capacity that the food taken can not be perfectly oxidized. Added to this is the action of the bacteria on the proteid constituents contained in the alimentary canal. These two factors acting together determine the form of suboxidation, the character of the symptoms, and the abnormal and by products that are found in the excreta. It is largely by the latter that we are enabled to accurately differentiate between the different forms of suboxidation affecting humanity. In conjunction with these two or chief factors in the production of our suboxidation conditions other things must not be overlooked, such as changes in temperature, hygienic surroundings, nervous disturbances, etc., for they are all factors and help to disturb the perfect working of the glandular system. How this bacterial factor working in the alimentary canal can be absolutely determined is one of the most difficult problems that has confronted the physiological chemist. Until it has been solved the absolute ætiology of these suboxidation processes can not be perfectly elucidated, except in theory. Even in the absence of complete verification this explanation, as here given, adheres closely to all the facts thus far known to modern science. Treatment based upon these facts also yields the largest measure of success. Failure occurs in the management of these conditions when the disorganization of the system has become so extensive before the right treatment is instituted that the removal of the pathological processes, their replacement by new and physiological products, and the maintenance of the ordinary functions of the body impose a greater task than the enfeebled system can successfully cope with. Viewed in this light, we are in a position to consider how best to affect these suboxidation processes by systematically dieting our patients, because we know just what we want to accomplish.

Before taking up the question of diet in detail, we should have a clear understanding of the composition and digestibility of the various food products.

As is well known, all food stuffs are commonly placed in two general classes: the vegetable and the animal. It is further known that they both contain all the constituents essential for maintaining life. They both contain mineral salts, saccharine compounds, fats, proteids, and the iron- and phosphorus-bearing substance known as nucleo-albumin. Neither one, however, contains these five groups of compounds in just the right proportion for the highest type of nutritive activity. The animal class, however, comes nearest to this perfect requirement, as exemplified in milk. But milk is defective in nucleo-albumin; it also contains an excess of the saccharine and fat constituents as compared with the proteid elements. Therefore it is not absolutely perfect. With the vegetable class there is a superabundance of the starch and saccharine elements, and a decided deficiency in the fats, yet they all contain a liberal proportion of the proteid constituents, and in many instances a high percentage of the nuclco-albumin. The latter is especially true of the green vegetables and legumes. In some of the vegetable class the proteid constituents are so large, as compared with the starch, that by the addition of a certain amount of oil, as is done by the Chinaman to his rice, very good results, so far as maintaining health and the development of robust constitutions are concerned, can be secured from a purely vegetable diet. All this goes to prove that man can live either upon a vegetable or an animal diet. It further shows that disease can be cured by placing the patient upon either a vegetable or an animal diet.

There are other factors that must be taken into consideration before we decide which is the best and the most available diet in the treatment of disease. The digestibility must not be lost sight of. The adaptability of the system to this or that form of diet must also be considered. And last, but not least, the tendency of this or that kind of food to excite putrefactive fermentation in the intestinal canal must not be lost sight of. Again, certain foods are more likely to cause undue irritation to the mucous membrane in their passage through the alimentary tract. All these important factors are too often neglected.

As to the digestibility, it has been proved beyond a question of doubt that the animal foods taken as a class are much more easily digested, absorbed, and assimilated. This is explained by the fact that the molecular structure as found in the animal kingdom is much more simple than that formed in the vegetable class. It is monomeric in its construction, while that in the vegetable is multiple or polymeric in its construction. Hence the greater ease with which the animal food can be digested. On the other hand, this ease of digestibility renders the animal class more prone to produce suboxidation than the vegetable class, unless the quantity ingested is restricted so that it is continually kept well within the oxygenating capacity of the system. When this is done, the digestive powers are conserved, the highest grade of nutrition is established, and there can be no danger from suboxidation. On the other hand, the suboxidation state can be made to give place rapidly under an animal diet to one of perfect oxidation. This accomplished, we have our rheumatic or gouty condition well in hand, so far as the dietetic management is concerned. Diet alone is not going to cure the difficulty, but Nature must be assisted in this work by the judicious addition of suitable medication, so that she can make the best use of the well-regulated diet.

The vegetable food stuffs, on the other hand, in consequence of their polymeric construction, are much more difficult to digest, to absorb, and to assimilate. Hence they are not so economic. Yet there is not so much danger of exceeding the oxygenating capacity of the system when on the vegetable diet, because such a large proportion passes through the alimentary canal undigested and unabsorbed. Thus we find a perfect explanation for the good results that are often obtained by placing the patient upon an almost exclusive vegetable diet, or when a change is made from a liberal animal to a liberal vegetable diet. This is especially true when the patient can not be controlled as to the amount of food taken, or where the physician does not fully appreciate the necessity of keeping the amount taken well within the oxygenating capacity of the system. Under these circumstances Nature does what the scientific physician should be able to accomplish in a much better manner by regulating the quantity ingested.

The indigestibility of the vegetable class, and the large amount of waste material to be discharged in the fæces, while it may have a tendency to loosen the bowels, is always a source of danger, because it often produces undue irritation to the mucous membrane of the intestine. If this occurs, a catarrhal condition is excited with its hyperproduction of mucus, thus forming a favorable nidus for the growth of the abnormal micro-organisms that may, and often do, infest the alimentary canal, thus exciting and maintaining an undue amount of putrefactive fermentation. The saccharine elements in excess are further very prone to undergo fermentative processes, thus causing irritation and helping to produce this undue putrefactive fermentation of the proteid constituents. Furthermore, all the cane sugar has to be converted into glucose before it can be absorbed, which is an excessive tax upon the digestive energy. If all these unpleasant results are not induced by the vegetable diet, it may, and does in many instances, yield some very satisfactory results.

Fruits, as a class, should be avoided, simply because of their strong tendency to start up fermentation and thus prevent the utilization of the more substantial kinds of food products, which must be perfectly utilized if we are to overcome these pathological conditions.

The adaptability of the system to various kinds of diets must not be overlooked in this important study of the diet. There is, as we have already found, no question about the ability to live on a great variety of food products, but it often takes the system a long time to adjust itself to forms and kinds of food that it has never been accustomed to utilize. This is especially true in relation to the vegetable class that is so difficult to digest. Once the system has become accustomed to the utilization of them, very good health may be maintained by their use. The best results, however, are secured by the use of the animal as against the vegetable. To secure the highest results under all circumstances requires the utilization of both the animal and the vegetable in combination; in other words, a well-regulated mixed diet, but one in which the animal class always preponderates.

The diet should at all times be free from an excess of the saccharine elements and all substances that easily tend to excite putrefactive fermentation. It should be one that is as little irritating to the alimentary canal as possible. The plain diet largely composed of the animal class is little likely to undergo putrefactive fermentation. With it there is no undue irritation to the alimentary canal. Thus we reduce to the lowest degree the growth and activity of the putrefactive fermentative micro-organisms that may gain access to the intestinal tract.

If at the same time we reduce the total quantity of food ingested so that it will never exceed the oxygenating capacity of the system, we have obliterated or removed the two main predisposing factors in the production of our gout and rheumatism. If we add to this suitable medication to augment digestion and absorption, and stimulate glandular action in general, many cases will make speedy recoveries that otherwise would become chronic and incurable.

While all this reads with perfect ease, it is no simple task that we assume when we undertake to properly regulate the diet, for we have the prejudices of ages to overcome—the inherent tendency of humanity to eat what it likes, regardless of the consequences; also the idiosyncrasies of each individual must be considered and due allowance made for all these varying conditions.

When all this has been accomplished, the variety and the quantity of the food properly adjusted, we find that the diet that is good for the one condition is equally good for the other. The main thing to be accomplished in all cases is first to get the quantity well within the oxygenating capacity, and then aid the system to properly digest and utilize the food pabulum introduced into the system. Then, if recovery is within the realm of possibility, it is bound to speedily follow. Speedily does not of necessity mean in a few days or weeks, but as compared with the time that it has taken to bring about these pathological changes.

THE ADMINISTRATION OF GENERAL ANÆSTHETICS.

By C. ALGERNON TEMPLE, M.D.,
TORONTO.

(Concluded from page 376.)

ETHER and chloroform have been combined, as in the Vienna mixture, which contained one part of chloroform to three parts of ether. Alcohol also has been added, as in the A. C. E. mixture, after Martindale's formula, and in Billroth's mixture, containing three parts of chloroform to one of ether and one of alcohol. Chloroform and alcohol have been used in varying proportions with the object of modifying the physiological effects of the individual drug. These mixtures are usually given in a cone or open inhaler. The ether acts as a stimulant to the pulse and respiration, and does away with the depressant action of the chloroform, where it alone is too depressing. When ether is too stimulating to the respiration, or too irritating to the bronchial mucous membrane, chloroform has the desired depressant effect. The objections urged against this form of anæsthesia is that it is not a definite chemical compound, but merely a mixture. There is a difference in their specific gravity, boiling point, and volatility, and consequently one can not estimate the amount of each drug the patient is receiving, as at first there is an excess of ether vapor, and later on an excess of chloroform. Notwithstanding this theoretical objection, one can often use these mixtures with great benefit where chloroform or ether alone would be unsafe.

The statistics for the last year (1898) report one death in 8,014 from chloroform and ether mixtures, and one death in 4,890 with Billroth's mixture.* In administering these mixtures one must not attempt to anæsthetize the patient too rapidly. The effects are midway between those of ether and chloroform and will depend on the quantity of ether in the mixture. The breathing is moister than with chloroform alone, and somewhat deeper and more audible. Any tendency to quiet breathing generally indicates insufficient anæsthesia. The pulse is quicker and fuller; the pupils are generally slightly dilated, but this, like respiration, will depend upon the quantity of ether. The same accidents may occur as under chloroform or ether, and must be treated in the same way. Chloroform is sometimes diluted with alcohol in equal parts, or with less alcohol, for very young children; or with very delicate adults, where light anæsthesia is only required. This is used with a view of lessening the percentage of chloroform and to keep down to a low point the amount of chloroform vapor as compared to the amount of air inspired. Chloroform and nitrite of amyl have been recommended (one drachm to the pound), although Hewitt advises against this mixture on account of the secondary effects of the amyl nitrite causing relaxation of the arterioles. I have found two to three minims added to the ounce to have a good effect when there has been pallor and weak pulse. I have used it chiefly with children and with satisfaction, and did not see any late depressing effects. I can not close the consideration of this method of anæsthesia without referring to Schleich's formulæ, as reported in the *Medical News*, November 27, 1897, by Dr. M. L. Maduro, of New York:

"It is now some two years since Schleich began making original investigations and experiments upon animals in the field of general anæsthesia, and his results culminated in the production of a book, which was published some six months ago, and was well received by the German members of the profession. Schleich found that all anæsthetics act in small doses as excitants; in large doses they induce sleep, and in the largest doses cause death. It is clear that a narcotic which *rapidly evaporates is rapidly eliminated* by the respiratory organs, and one which does not evaporate as quickly remains longer in the system and becomes more dangerous with prolonged inhalation. It is acknowledged that *a body evaporates more rapidly the lower its boiling point*, and *vice versa*. The question arises: What is the relation of the boiling point of the various narcotics to the temperature of the organism by which they are absorbed? It must be admitted that a narcotic with a boiling point of 15° C. (ethyl chloride) or one which boils at 65° C. (chloroform) must act in different ways upon an organism the temperature of which is 38° C. Schleich, knowing that there ought to be an intimate relation between the boiling point and the temperature of the body, undertook experiments to discover by a physical process a mixture which would satisfy this relation and materially lessen the dangers of general anæsthesia. He found that when the boiling point is higher than the temperature of the body the amount necessary to narcotize is less than when the boiling point and temperature are equal. Again, when the boiling point is higher than the body temperature the deeper the resulting narcosis. The boiling point of chloroform is 65° C.; of ethyl bromide, 39° C., and of sulphuric ether, 34° C. Thus it may be understood why less chloroform than ether is necessary to narcotize, and why chloroform narcosis is deeper than that of ether. Schleich has proved that anæsthesia with ethyl bromide, the boiling point of which is 39° C. (nearest the temperature of body), would be an ideal anæsthetic, were it not for the fact that the advantage of boiling point is not sufficient to overcome the dangerous action of the bromide.

"After making various mixtures of the different anæsthetics, Schleich concluded that it is possible to change the boiling point to the desired degree, and that the mixture will continue to boil without decomposition as long as its temperature is not considerably higher than its determined boiling point. Mixtures of ethers, the boiling point of which closely approaches the temperature of the body, absorbed during respiration will boil when expired with the air in the lungs. It is possible to mix ethers having different boiling points in various proportions, and thus obtain a desired boiling point; and further regulate it according to the proportion of each used. After various experiments upon animals, Schleich succeeded in preparing the three following mixtures, which constitute the new method:

"*Mixture I* (*boiling point, 38° C.*).

Chloroform	45	parts;
Petroleum ether	15	"
Sulphuric ether	180	"

"*Mixture II* (*boiling point, 40° C.*).

Chloroform	45	parts;
Petroleum ether	15	"
Sulphuric ether	150	"

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* Sajous. Vol. iii, p. 205

"*Mixture III (boiling point, 42° C.).*

Chloroform	30 parts;
Petroleum ether	15 "
Sulphuric ether	80 "

"The mixtures may be prepared by the anæsthetizer. The only thing to remark in preparation is that the petroleum ether should have a boiling point between 60° C. and 65° C. Schleich uses petroleum ether because he found in his experiments upon animals that no other ethereal substance can be administered in such large doses without causing serious disturbances. It, however, seems to mitigate the action of the chloroform contained in the mixture and to dilute the other substances without interfering with their action. The method of administration differs little from that commonly employed in giving other anæsthetics, inasmuch as the greatest care in the amount should be observed. Small doses will lead to slow but sure results. Enough stress can not be laid upon this point, which, as we know, is the common mistake in the administration of anæsthetics. With Mixture I thirty grammes should be an average dose for an operation lasting twenty minutes or less. Schleich has manufactured a special mask, but he has now discarded it, to use with equally good results the practical American idea of the paper-and-towel combination. If a more prolonged operation is undertaken, a higher boiling point is selected (Mixture I or II); for then the small excess which can not be immediately eliminated with the expired air will induce a profound sleep with a very small dose. With this method one can regulate the narcosis by the respiration alone. Schleich is enabled to have his patients who are only under a brief narcosis immediately awake after the completion of the operation; for if Mixture I is used (boiling point equals temperature of the body) only a few free respirations are necessary to awaken the patient. After having witnessed quite a number of operations at Schleich's clinic, I was amazed at the rapidity with which the patients both succumbed to and recovered from the anæsthetic. A response to a question could be elicited immediately after the mask was removed from the face. Laxity of the abdominal muscles was complete after an average of five minutes' narcosis. The stage of excitement was generally absent, even in alcoholics. Cyanosis or nausea was never present. Vomiting occurred about as frequently, never more so, as with the use of chloroform. There was no salivation or bronchitis. Schleich relates a case of broncho-pneumonia in a child who previously had had diphtheria, and whom he had occasion to anæsthetize. The child was not made worse, but recovered completely from the anæsthetic within forty-eight hours. In febrile cases narcosis has been induced without any resulting disturbances when the 42° C. mixture was used. The pulse was always of good tension, never increased, and sometimes decreased. After the employment of this method of anæsthesia patients awaken more refreshed than after the administration of ether or chloroform. Schleich has, up to the first of this year, collected some three hundred and sixty cases in which he has used his method of narcosis with uniformly good results. All that he claims for it has been upheld by many of his associates abroad. There is little or no doubt in my mind that this new departure in scientific up-to-date anæsthesia will revolutionize the old methods, and will prove its efficiency by its general adoption in the near future."

The administration of chloroform depends for its safety upon the skill of the administrator more than is the case with other anæsthetics. Dr. George M. Gould, of Philadelphia, reports that the statistics of St. Bartholomew's Hospital, from 1875 to 1890 inclusive, show 19,526 chloroform anæsthesias, with thirteen deaths, a mortality of one in 1,502. In the *Proceedings of the German Surgical Congress*, Berlin, 1891, sixty-six European surgeons report 23,000 cases, with six deaths, or one in 3,776.[*] Foy's statistics show 877,507 administrations, with 204 deaths, or a mortality of one in 4,301. The German Surgical Society in 67 reports from last year describes 32,725 administrations, with 17 deaths, or a mortality of one in 1,924.

The general mortality from chloroform last year was one in 2,645. Dr. McEwen, of Glasgow, however, reports nearly ten thousand administrations, with one death. Sir George McLeod reports 15,000 cases, with one death; and Dr. Buchanan, 9,000 administrations, with one death—an average for the three of about one death in 11,000, which compares favorably with ether for three leading Scotch surgeons. The general mortality is estimated at about one in 2,850.

Success with this anæsthetic will depend largely on the state of nervous excitement of the patient. He should be reassured. The cardiac excitement should subside before any anæsthetic is inhaled. A light mask should be applied over nose and mouth, and the patient should be encouraged to breathe freely through this—no anæsthetic being administered until respiration and pulse are almost normal, and then commencing drop by drop, slowly increasing in quantity until partial numbness of the mucous membrane is produced. Then it should increase until insensibility of the cornea is produced. The operator should avoid being too slow, so as not to saturate the blood with chloroform, which would be subsequently absorbed and act deleteriously on pulse and respiration should an accident supervene; and, on the other hand, should avoid giving it so freely or concentrated as to cause spasm of the larynx, coughing, struggling, or holding the breath. In such case one runs the risk of neuroparalysis of the heart from reflex irritation (which may arise from the nasal or laryngeal mucous membrane), as well as from operation being commenced before anæsthesia is complete—the frequent cause of death, especially in dentistry.

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[*] Sajous. Vol. iii, p. 205.

Another method of administration is the intermittent plan, using from one half to one drachm at a time and putting the patient rapidly under the effects of the drug. The disadvantage of the latter method is that the percentage of chloroform vapor and air varies greatly from time to time, and the patient can rapidly absorb too much by a few deep inspirations. Struggling for breath early generally indicates too strong a vapor, and it should then be diluted. Later on, as the patient is semiunconscious, struggling and muscular rigidity indicate free use of chloroform. In certain regions where sensation is acute, as in operations on the eye, rectum, and in some abdominal cases, anæsthesia should be profound in order to avoid reflex shock with sudden cardiac failure. The aim should be to keep the cornea insensitive and the pupils contracted. If dilatation occurs during anæsthesia one of two things is happening: First, the patient is recovering from the anæsthesia, in which case there is associated sensitiveness of the cornea, struggling, attempts at swallowing or vomiting, and flinching under the manipulations of the surgeon, and the indication is to increase the quantity of the chloroform. Second, a dilated pupil is visible, associated with profound muscular relaxation, insensitiveness of conjunctiva, and also to the manipulations of the surgeon, a blanched countenance, and shallow abdominal respirations. Expiration being prolonged also indicates an excess of the drug, and under such conditions the anæsthetic should be immediately removed and precautions instituted to prevent respiratory or cardiac collapse. Notwithstanding the report of the Hyderabad commission that respiration is the important indicator for safety, most anæsthetists insist on the importance of the pulse and the pupil reflex and color.

Remembering the fact that chloroform undoubtedly affects not only the heart itself, but also is a vasomotor depressor, I strongly urge that one should anticipate danger as far as possible by careful preparation as well as by the hypodermic injections of cardiac stimulants. The foremost of these is undoubtedly strychnine, and this should be given during operation when prolonged. If there is much hæmorrhage or shock it should be administered in ten-minim doses, repeated as required. In this way strychnine is an excellent stimulant, not only to the heart but also to the respiration. In cases of collapse, cardiac or respiratory, the case demands more than the usual dose, as absorption is then slower than in health, and a profound muscular poison is depressing an already exhausted heart. Digitalis, strophanthus, and caffeine are also of service. Amyl nitrite acts powerfully and quickly as a spur if given by inhalation. It is essential to see in this latter case that respiration is being performed either naturally or artificially. Nitroglycerin can be used instead of amyl nitrite in selected cases. Its action is slower but more persistent, and it should be remembered that while it acts powerfully on the heart it relaxes the arterioles. Ether and alcohol have a similar effect, and for this reason care should be taken under such circumstances that the heart has sufficient fluids to stimulate contraction. On this account I would suggest that ergotine might be added to prevent the vascular dilatation.

When the pulse is failing, advantage should be taken of the Trendelenburg position to facilitate the onward flow from the abdominal veins; using artificial respiration if necessary; taking care to see that the mouth is well opened with the gag, and that the tongue is brought forward, or by the extension of the head on the thorax clearing the air-passages from any obstruction, and even doing a tracheotomy if necessary. The other remedy in cardiac failure is normal saline fluid at about 100° F., the amount to be used depending entirely on the condition of the pulse. In moderate cases of collapse rectal injections, if in the Tredenlenburg position, can be administered by the nurse, or submammary injections if given in anticipation of shock. But in sudden cases the intravenous injection is the only one likely to be of service, as the absorption is too slow by the other methods. Respiratory difficulties may occur early during chloroform anæsthesia from the vapor being too concentrated, thus causing spasm of the glottis, coughing, struggling, or holding the breath. In these cases more air should be allowed, and the vapor diluted, increasing the quantity as insensibility is lost. Difficulty may also occur during the anæsthesia from sucking in of the lips in the edentulous, falling back of the tongue, accumulation of blood or mucus in the passages, or from mechanical pressure on the chest or larynx. In these cases the mouth gag, or drawing forward the tongue, clearing the air-passages, or relieving pressure is often sufficient. Holding the breath in the case of nervous persons is often relieved by a short, sharp word of command to "breathe deeply." Artificial stimulation may be given to the sensory nerves by slapping; by allowing ether to evaporate over the abdomen or chest; by pressure on the supraorbital nerve or dilatation of the anus; or by the introduction of ice into the rectum.

According to H. C. Wood, attempts to excite contraction of the diaphragm by electric stimulation of the phrenic nerve are dangerous, as likely to lead to cardiac inhibition. When the heart has fully stopped it may, however, be restored by a weak current of electricity, and again arrested by a strong current. The inhibiting fibres going to the heart are less affected by electricity than the accelerator nerves.* The beneficial effects of the faradaic current are due not to any action it has on the heart's rhythm, but to its stimulating influence on respiration.† The strength of the current necessary to effect stimulation of respiration is less than is required for cardiac stimulation. The poles should be applied along the course of the sterno-mastoid and to the pit of the stomach. In serious cases from an overdose the Trendelenburg position with artificial respiration and the inhalation of oxygen gas; bleeding, with the simultaneous injection of normal saline fluid; electrical currents and hypodermics of strychnine and atropine should be used, depending chiefly on mechanical respiration.

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* Rockwell. Eighth edition, p. 160.

† Sajous. Vol. ii, p. 165.

Nausea, vomiting, and headache occur sufficiently often from anæsthetics to demand consideration here. First, the purity of the anæsthetic is important, as it decomposes on exposure to light; according to Newman and Ramsay, forming hydrochloric acid and carbonyl oxide, and it is this latter substance which causes the after sickness. Herson Leidon * states that "chloroform decomposes into chlorine and carbonic oxide by exposure to gaslight, and thus causes bronchial irritation and asphyxia. Gaslight causes ethylene chloride to form, and fatal coma may ensue in tabetic patients." † Carbonic dioxide and hydrochloric acid are the toxic agents according to Hunkel.‡

Impurities, such as ethylene chloride, can be prevented if slaked lime is added to the chloroform, filtering the supernatant liquid as required for use. Vomiting can be prevented during anæsthesia by sufficient use of the anæsthetic. If pupils dilate and attempts at swallowing occur, the drugs should be given freely until the pupils contract and insensitiveness of cornea indicates complete anæsthesia. By this means the muscles are rapidly paralyzed. As operation terminates one should use the free inhalation of vinegar for ether and chloroform narcosis. After four years' constant use I have found it almost uniformly successful. This drug neutralizes the chlorine vapor given off from the lungs, which is an irritant to the mucous membrane of the pharynx. This method is almost always successful except in cases where blood enters the stomach, and even then vomiting may be postponed for hours, and when it occurs is not prolonged or continued. The patient should be removed to bed and allowed to sleep off the effects. If aroused, vomiting and headache are likely to ensue.

For the nausea, which sometimes occurs, ice in the mouth has been recommended. If much of it is taken and the water swallowed, vomiting is almost sure to ensue. A spoonful of very hot water is useful in some abdominal cases, but usually total abstinence for four to six hours is better. If great thirst, shock, or weakness demands some fluid, rectal alimentation should be adopted.

Mustard has been applied to the epigastrium, and cocaine and morphine may also be used—the former by mouth in combination with bismuth, hydrocyanic acid, or champagne; the latter hypodermically. Lewin * recommends gastric lavage with sodium-bicarbonate solution if vomiting is persistent. Buxton advises for the vomiting after ether four to five minims of chloroform with two to three of vinegar of opium. The room should be warm to avoid any bronchial complication. The administration of oxygen gas shortens the time of returning consciousness and lessens the after effect of nausea and vomiting. Some its use appears to benefit; others are not apparently affected. For the nausea, which occasionally exists without vomiting, tincture of nux vomica is useful.

200 Spadina Avenue.

Deutsche med. Wochenschrift, April, 1890.

† Rhen. *Bull. méd.*, May, 1895.

‡ *Münch. med. Wochenschrift*, April, 1890.

* Sajous's *Annual.*

CEREBRAL COMPLICATIONS CAUSED BY EXTENSION FROM THE ACCESSORY CAVITIES OF THE NOSE.†

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Cerebral affections are the most dangerous complications that frequently ensue as a result of or associated with purulent inflammation of one or more of the accessory nasal cavities. It is to be hoped that since Harke's and Zuckerkandl's anatomo-pathological work on this subject has been presented to the profession the relationship existing between diseases of the nasal cavities and inflammatory diseases of the base of the brain will be more clearly understood.

The pathological changes which one observes in the meninges or brain substance as a result of extension of infection from one or more of the nasal cavities will depend upon the virulence of the micro-organism and the situation of the source of the infection—viz., whether it originated from the frontal, ethmoidal, maxillary, or sphenoidal cavities. Hajek has pointed out that experience demonstrates that a slight inflammation of one or more of the cavities often shows a particular tendency to involve the meninges or cerebrum; yet, on the other hand, closed empyema may exist for years without affecting the meninges, and therefore, besides the cause of the infection, there are certain predisposing factors which must be considered:

1. Congenital defective formation in the bony walls of the nasal cavities.
2. Partial or complete closure of the normal apertures of the cavities.
3. Pronounced virulence of the infectious material.

There can be no doubt that many inflammatory products of the nose are carried to the meninges by the nasal veins, which anastomose with those of the dura mater. Zuckerkandl demonstrated, by injecting a fluid into the superior longitudinal sinus immediately above the frontal cavities, that the veins in the mucous membrane of the frontal cavities and those leading into the foramen cæcum, as well as those of the superior half of the nose, were filled with fluid injected from above. The anterior and posterior ethmoidal veins empty into the superior longitudinal sinus usually directly, at other times they enter the meninges through the superior ophthalmic vein, and less frequently through the inferior ophthalmic; there is also a vein which passes through the lamina cribrosa and enters into the superior longitudinal sinus or into the veins of the olfactory tract.

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† Read before the Montreal Medico-chirurgical Society, November 9, 1899.

Schäfer and Thane state that "colored fluids can be made to pass from the subarachnoid space through the arachnoid villi into the prolongations of the subdural space, which surround those villi within the venous sinuses and lacunæ, and thence into the sinuses themselves"; therefore, if the cavernous and longitudinal sinuses, and particularly the former, are not filled with the normal quantity of blood, there will be a lessened amount of cerebro-spinal fluid in the subdural space and other lymphatic spaces of the cerebrum.

It is well known to nasal surgeons that children suffering from nasal or nasopharyngeal growths are unable to compete, either mentally or physically, with children who enjoy good health. The same also applies to adults, and the following case, which was kindly referred to me by Dr. W. H. Drummond, illustrates the effects of pressure of the nasal veins upon those of the meninges:

CASE I.—A man, aged fifty-eight, a dye worker by occupation, complained of almost constant dizziness and inability to concentrate his mind upon his work. The organs, so far as could be ascertained, were normal. Examination of the nose revealed a slight deviation of the sæptum to the right and marked hypertrophy of both middle turbinals; bands of tissue connected the left middle turbinal with the sæptum; both inferior turbinals were slightly hypertrophied, and there was a chronic nasopharyngitis.

After removal of the hypertrophies from the middle turbinals, the patient experienced complete relief from the attacks of dizziness.

CASE II.—Kindly referred to me by Dr. J. M. Elder. A man, aged fifty-six. Face presented a sallow, unhealthy appearance. Patient complained of suffering from occasional headaches for the past ten years, and was subject to cold in the head, particularly in the spring and autumn months. For the past year the headaches were becoming more frequent and accompanied by attacks of dizziness. On the morning of November 22, 1899, he had such a pronounced attack of dizziness that he "almost fell out of the carriage." He stated that he had had a discharge from the right nostril for the past ten years.

Examination of the viscera revealed no abnormities.

Nasal examination showed deviation of the sæptum to the left, with a bony-cartilaginous ridge extending from the anterior naris to the choana on the left side. There was marked hypertrophy of the right middle turbinal and considerable pus in the right middle meatus.

Exploratory puncture of the right maxillary antrum revealed the presence of a large quantity of pus.

I drained the antrum through the alveolar process of the second bicuspid, and, as pus was still present in the nose after thoroughly cleansing the antrum, I removed the anterior end of the middle turbinal and curetted the ethmoidal bulla; pus flowed freely. There was considerable hæmorrhage following the removal and curettement, which I controlled with several large plugs of sterilized absorbent cotton, saturated in a glycerin-alcoholic solution of suprarenal extract.

Since the operation the patient presents a healthy, ruddy appearance. He has had no recurrence of the attacks of headache or dizziness, and states that he has not enjoyed such good health for the past ten years.

In both of these cases in all probability the effects of pressure upon the nasal veins caused a damming back of blood from the veins which communicate with those of the meninges, and the disturbance in the maintenance of the equilibrium of the basal meningeal veins, which secondarily affected the amount of cerebro-spinal fluid in the subdural space and other lymphatic spaces of the cerebrum, manifested itself by attacks of dizziness. This theory is purely mechanical, but appeals to me as rational.

The Nasal Ætiology of Cerebro-spinal Meningitis.—Weigert was the first to demonstrate, by a bony section of the nose from a case of cerebro-spinal meningitis, that the superior half of the nose and its cavities presented intense inflammatory changes. Weichselbaum confirmed or supplemented Weigert's investigations by making sections of the nose from ten cases which had died from cerebro-spinal meningitis. Out of this number the cavities in five were diseased. Cultures of pus from the meninges and nasal cavities revealed the presence of the *Diplococcus pneumoniæ* and other pus-producing bacilli, such as the *Staphylococcus aureus* and *Streptococcus pyogenes*, as well as the *Diplococcus intracellularis.*

The following case came under my observation in December, 1899:

A girl, aged nine, had suffered from general malaise and headache for a period of two weeks. At the expiration of that time the pain had become more marked in the outer half of the right frontal and parietal region; it was aggravated by noise and photophobia was present. The patient complained of a feeling of nausea, but did not vomit. Temperature, 102½° F.; pulse, 130; family history good; lungs normal. There was a mucopurulent discharge from both nostrils, more copious from the right. The family physician suspected some meningeal involvement, and requested me to make an examination of the nose and ears.

The ears were normal.

Examination of the nose revealed a mucopurulent secretion in both nostrils, particularly in the right middle turbinated space. There was atrophy of both inferior turbinals. The anterior end of the right middle turbinal was markedly enlarged; the ethmoidal bulla on this side was distended and pressed upon the inferior and inner surface of the middle turbinal

I advised both nostrils to be sprayed with a two-per-cent. solution of cocaine in listerine every hour, to be followed a few minutes later by large quantities of equal parts of glycothymoline and water, in order, if possible, to flush out the cavities and prevent any possibility of untoward effects from the cocaine.

A large amount of pus came away in the return fluid. Twenty-four hours after this treatment was instituted the headache and other unfavorable symptoms had disappeared, and the temperature and pulse were almost normal. From the history and symptoms of this case I regard it as one of attenuated meningitis caused by extension of infection from the right ethmoidal labyrinth.

Reports of Huguenin's, Ogston's, and Warner's cases of meningitis following infection from one or more of the cavities are instructive, and a synopsis of the case of the last-named authority may prove interesting:

A man, aged thirty-two, a gardener by occupation, presented himself for treatment, complaining of intense pain in the frontal region, which, however, soon became general. The patient was unable to sleep, and vomited twice during the first twenty-four hours. On the second day coma and convulsions supervened, and death occurred the beginning of the third day. The post-mortem revealed acute meningitis, involving both halves of the basal meninges; the lateral ventricles were full of pus; the dura mater at the base presented a healthy appearance, with the exception of that portion which covers the lamina cribrosa, which was slightly thickened and easily separated from its attachment. The lamina cribrosa was covered with exudate. The frontal cavities were completely filled with pus, as well as the mucous membrane of the olfactory portion of the nose and that of the ethmoidal labyrinth. No bony caries was found.

In Dreyfuss's tables, which show the relationship existing between empyema of the different cavities and inflammation of the meninges and brain substance, there are five cases of death caused by extension of the infection from the antrum of Highmore, eighteen cases of death following empyema of the frontal cavities, ten cases following infection from the ethmoidal labyrinths, and eleven cases following empyema of the sphenoidal cavities.

The many channels by means of which the viruses gained an entrance to the meninges or brain substance are stated very fully in Dreyfuss's excellent tables, but want of time prevents me from reproducing *in toto* his statistics. Suffice it to state that after a careful consideration of these one would conclude that the most frequent intracranial lesion following empyema of the antrum of Highmore is thrombosis of the cavernous sinus, while that which follows empyema of the frontal cavity is intracerebral abscess, and the specific brain lesion following empyema of the ethmoidal labyrinth is meningitis.

After such reports have been recorded as those mentioned, the most exact clinical and anatomo-pathological observations should be made in order that we may be able to demonstrate to our fellow practitioners the great importance of recognizing the relationship existing between the diseases of the brain and its membranes as secondary to empyema of one or more of the accessory nasal cavities.

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THE TREATMENT OF RETRODISPLACEMENT OF THE UTERUS.*

By I. L. WATKINS, M. D.,
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To appear before this society with a subject so familiar to each of you demands on my part some explanation. Especially is this the case since I have nothing new or novel to offer, either in pathology or treatment.

The prevailing fashion now is to spend our time in discussing the more decidedly surgical subjects, and to overlook the minor things in gynæcology. It may not be entirely unprofitable for us to turn our attention for a short time to the more commonplace things, such as we meet with daily in our offices. For this reason, I hope to say something that will excite a free discussion of the treatment of retrodisplacement of the uterus.

It has been customary for the past half century for authors of works on gynæcology to devote a great deal of space to this subject, and almost without exception, it is safe to say, they all differ in some essential point as to the ætiology or treatment. These differences can teach but one thing, namely, that our knowledge of this subject is yet defective.

The varieties of backward displacement are treated of under two heads—retroflexion and retroversion. The varieties known as lateral deviation are unimportant. We may have temporarily a physiological displacement; as, when the bladder is distended with urine, the uterus is forced backward in the pelvis. With conditions favorable, a sudden effort or fall is frequently a cause of this trouble. Prolonged dorsal decubitus, as after parturition, is not infrequently the cause. This, in connection with a subinvoluted organ, is very apt to result in retroflexion. Inflammatory deposits shortening the sacral ligament and destroying the natural tonicity of other muscular fibres will result in this condition. Still another cause, and one which I have not seen mentioned in the books, is imperfectly developed broad, sacral, and round ligaments, with infantile generative organs.

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* Read before the Southern Surgical and Gynæcological Association, December 7, 1899.

These cases are usually found in young girls, or in married women who have not borne children. For want of tonicity in the pelvic muscular tissues, the organ settles back, either bent on itself or otherwise, into the hollow of the sacrum. The condition is very similar to that following the operation of oophoro-salpingectomy. As a result of this we have irregular menstruation, soon followed by endometritis, the uterus limited in its movements and pressing on the sacral nerve. I have frequently noticed this condition following the removal of the ovaries and tubes, and in my opinion many of the annoying symptoms which are kept up so long are indirectly caused by this condition. Inflammatory deposits of either of the prominent ligaments, leaving them shortened, will, of course, produce a similar condition.

As to the cause of symptoms in displacements, whether due to pressure on the sacral nerves or drawing on others, I shall not attempt to say. It is most likely that it is due to some influence on the circulation in these tissues. Too much importance can not be attached to faulty nutrition while considering the causes of any displacement of the uterus. Symptoms of uterine displacement are largely determined by the cause of the deviation. Those due to inflammatory deposits in the ligaments are accompanied by pain in the hips, the lower part of the abdomen, and the back. Reflex disturbances are common. Indigestion, constipation, and palpitation of the heart are among the most common. Those due to falls or jars are usually headaches, pain in the back and leg, and hæmorrhoids. Displacements due to imperfect development of the fibrous structure of the pelvic tissue are usually found, as I have stated above,in young girls or women who have not borne children. They are highly hysterical, and are subjected to a long list of imaginary troubles bordering on insanity—dyspepsia, headaches, constipation, and moments of depression bordering on melancholia. Menstruation is irregular; when it occurs, it is painful and scant. On examination, the os is found patulous, the cervix soft and flabby. The fundus and ovaries are low down in the *cul-de-sac* of Douglas. The endometrium is inflamed for only a short distance above the internal os. The patients rarely have leucorrhœa. On passing the sound, it usually extends farther than was expected. Its removal is followed by the passage of a few drops of blood. This little operation, as a rule, is very painful. I am aware that endometritis is put down as one of the causes of displacement, but, instead, in a large number of cases the endometritis is caused by displacement. Cases coming with a history of long standing show a greater degree of endometrial trouble than those of short duration. Sooner or later many of these patients become masturbators.

The diagnosis of backward displacement is, as a rule, very easy, but it is not very easy to determine the cause in a given case. The cervix is found pointing toward the vaginal outlet. The fundus, with one or both ovaries, is in Douglas's *cul-de-sac*. With one or two fingers against the cervix, the opposite hand on the abdomen, the organ is raised, and the fundus distinctly felt if it occupies the normal anteflexed position. Failing in this, the passage of the sound gives unmistakable evidence as to its position. This is rarely necessary when other manipulations are carefully conducted.

As I have stated above, the treatment of these displacements is by no means settled. Before the days of antiseptic surgery relief from this condition was sought for by the use of pessaries. The styles and varieties were legion. Without a very accurate knowledge of the existing condition, every gynæcologist felt called upon to invent some peculiar instrument to meet the indications. Hence the average professor, when called upon to lecture on this subject, was forced to use not less than a bushel basket to bring his pessaries before the class, in order to show the different varieties on the market. To-day it is somebody's peculiar operation. So, notwithstanding the great progress made in the last few years, the subject of the treatment is yet unsettled. The question as to the best method of correcting this condition is magnified out of all reason in the average text-book. With the patient on her back on a suitable table, with two fingers in the vagina, it is in a large percentage of cases very easy to raise the fundus to the normal anteflexed position. When the sacral promontory is very prominent, a tenaculum hooked into the cervix to draw the organ down from under it may be necessary. When with these manipulations failure results, it is usually due to some adhesions, which are contraindications to further efforts. In determining the best method of treatment in a given case, it is well, if possible, to determine the cause of the condition, as upon this may depend the question of success or failure. In addition to this, there are several questions which should be answered before treatment is undertaken. First: Is there any disease of the pelvic organs that would be benefited by operative measures? Second: Is it a case where a pessary can be fitted without difficulty? Third: Can the patient have intelligent medical care while wearing the pessary? Fourth: Is she willing to give the time necessary for her recovery? Diseased appendages should be removed and the fundus suspended from the abdominal wall. If it is impossible to fit a pessary, this operation should be resorted to, otherwise your patient will not appreciate your efforts, and she will justly look for some one who will operate. It is unwise to send a patient away when she will not be looked after, as too long or improper use of this instrument will produce damage, which will be charged to the one who inserted it. As to the time necessary to wear a pessary for relief, I never attempt to say. At intervals of three to six months I remove it for a few days; if the organ remains in position, I discharge the patient.

The best instrument is a hard-rubber Hodge, which is susceptible to slight changes by oiling it and holding it over the alcohol flame; this in my hands answers every purpose, and should be introduced with the patient on her back. When endometritis or laceration of the cervix with glandular infiltration exists, curettement and amputation of the cervix should be performed. These conditions should, of course, be corrected, whichever method is resorted to. Where strong adhesions or other intrapelvic complications exist, the use of the pessary is not to be considered. The abdomen should be opened, adhesions broken up, neoplasms removed, and the organ anteflexed and attached to the abdominal wall. In the case of illy developed fibrous structure, it is far better to suspend the organ than to attempt to correct it by the use of an instrument. These cases, as a rule, bear pessaries badly, but show marked relief when subjected to a careful operation.

I do not feel justified in taking up your time discussing the numerous operations that have been advocated by their various authors in the past few years. Many of them were conceived in sin, and are not worthy of the age in which they exist. The Alexander operation, so popular in this country, is a much-abused operation. It doubtless has a place in the list, but the cases to which it is adapted should be selected with care. It is difficult to perform, and a large number of reported successes are incorrect. I have done ventral suspension in cases where the Alexander operation had been performed, finding the uterus thoroughly retroflexed. Doubtless others of you have done the same thing. The objections so frequently raised to suspension are, as a rule, due to faulty technique. Difficulty during labor and interference with the bladder are the results of including too much uterine tissue antero-posteriorly, and limiting too much the upward and downward movement of the organ. I have never seen any difficulty during labor after this operation when it has been performed according to the methods laid down by Dr. Kelly.

ERUCTATION, REGURGITATION, AND RUMINATION.

By H. W. LINCOLN, M. D.,

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These three subjects may, I think, be properly spoken of together, as they may occur in a single patient in the order named.

The first consists of the belching of gas at first, later air, which has been previously swallowed. The patient will complain of "gas on the stomach." Most of the belching, however, is due to air. No doubt at first there was more or less gaseous distention; eructation brought relief. Later the habit was formed and we find the typical case. It may, beyond question, be termed a neurosis, there being no lesion, though the symptom presents with various gastric troubles.

Ewald believes that eructation occurs only in hysterical cases—*i. e.*, true gastric nervous belching—due to the fact that the pylorus is stronger than the cardia. Hence, when the stomach is so distended that escape of gas or air is imperative, it escapes upward by way of the least resistance. Contraction of the abdominal muscles plays a large part in this act. Many persons can belch at will, regardless of the time or condition of the stomach. This is not pathological.

We have also œsophageal eructation, in which the swallowed air never reaches the stomach. This is facilitated by contraction of the muscles of the neck.

This nervous belching may prove a great annoyance —may keep a patient out of society or even from properly attending to his business. It occurs quite as frequently in men as in women, if not more so.

The diagnosis is self-evident; the prognosis good.

Treatment.—Suggestion is all-important. The patient must make every effort to suppress the belching. Perhaps a small dose of bromide may aid, from a moral as well as therapeutic standpoint.

Coming now to the next *stage*, if I may so term it, we have to deal with regurgitation, which consists in the welling up into the mouth of large or small amounts of solid or liquid foods. It occurs usually at the close of the meal, sometimes earlier. If, as occasionally happens, it comes on later, the taste varies; for example, an hour after eating the taste is sour—due, according to Bücklin, to butyric or lactic acid; an intensely sour, corroding taste, due to hydrochloric acid; a bitter taste, due to peptones. The taste and odor of sulphureted hydrogen mean some fermentative or putrefactive process.

In the beginning but a few mouthfuls are brought up and expectorated; later the habit and amount lost at each meal increase and may result in general inanition accompanied by severe nervous manifestations. Rarely, I believe, does the small capacity of the stomach bring about regurgitation. Allow me to briefly cite the case of a lady, twenty-four years old, without hereditary neurasthenic or tubercular tendencies. Her stomach proved by diaphany, inflation, and filling with water to be very small, holding about eight hundred cubic centimetres. In this case there is never any trouble except on eating a few mouthfuls too much, especially of desserts, and particularly of ice cream. Then there comes an ungovernable inclination to "spit up" those few extra mouthfuls. The entire meal is never lost, and to my mind the occurrence can be called nothing more than an overflowing of the stomach, identical with the running over of œsophageal pouches. Material from these may easily be mistaken for gastric contents unless it is chemically examined. If œsophageal, the reaction is alkaline; if gastric, usually acid—at any rate, pepsin and rennet may generally be demonstrated.

Regurgitation has been said to be due to cardiac relaxation. This sometimes does not hold true, for by inflation the orifice may be proved intact. It is said also to be found in dilatation. Martin doubts this, for the reason that a worn-out muscle has not the power to contract sufficiently. Still, what about the contraction of the abdominal muscles and pressure, which really amount to the performance of the "expression method," so universally used to obtain test meals? Bücklin found in 116 cases of regurgitation 80 cases of atony. Dilatation was undoubtedly present in proportionate frequency. This gentleman states that in chronic gastric catarrh regurgitation is not found frequently enough to warrant diagnostic connection. To quote his figures (*Archiv für Verdauungskrankheiten*, October, 1899):

Examined 338 cases; regurgitation in 192. Examined 192 regurgitants; 46 cases of chronic gastric catarrh, of which there were 14 with pyloric atony, determined by presence of bile and pancreatic juice in the tests; 13 cases of ulcer, 5 cases of atony; 12 cases of cancer, 8 cases of atony; 121 cases of different neuroses, of which 53 had "atonia ventriculi," etc.

The above would certainly speak favorably for connection between regurgitation and atony. Einhorn says that besides mental strain, worry, etc., acute gastritis may be followed by regurgitation. It occurs, of course, in stagnation, cancerous conditions, and so on. As a rule, I think we understand the malady as of nervous origin.

The diagnosis is not difficult. The anomaly is not very common, though more so, I believe, than is generally supposed. Due principally to the fact that scarcely anything objective may be observed, and trusting to subjective data, the physician is very apt to be misled. The patient will invariably complain of persistent vomiting, with inability to retain even a glass of water. He may even present pain, nausea, headache, vertigo, etc. In the clinic at the Post-graduate Hospital these cases are fairly frequent.

The prognosis is good, as a rule, though the victim may eventually ruminate.

Treatment.—Force the patient to swallow back the food as fast as regurgitated; to eat always in company and slowly. Arrange the diet according to the gastric secretion, using, as far as possible, food which is light, nutritious, and easily digested. Small ice pellets are recommended by Alt. Bromides may sometimes be needed. Electricity externally and internally does good.

Let us turn our attention now to the most serious of these three condition—rumination. It is far less frequent than either eructation or regurgitation—not so rare as was supposed, because, occurring in the lower classes, it passes unnoticed, or at any rate unspoken-of to the physician. Hence it will be seen how impossible it is to get any exact statistics in this regard. All human ruminants, whether educated or otherwise, will strive to conceal their habit. It means the rechewing of a part or the whole of a meal, which is then reswallowed. The condition may go on for many years with impunity. It usually causes no alarming symptoms, although Oser reports a case of fatal issue. Periods of rumination may alternate with periods of euphoria. It may come or go suddenly after some remarkable event in the life of the patient. The beginning is voluntary, said by some to insure proper mastication and digestion. Part may be rechewed, part expectorated. Later the act always takes place involuntarily. Its suppression is claimed to cause pain. If no organic lesion coexists, food tastes better than when first swallowed.

Ætiology.—Heredity, custom, and imitation stand preeminent. Cardiac relaxation has been disproved in ruminants by the normal occurrence of the second deglutition sound. Rumination is a motor dynamic affection of the stomach, occurs among all classes, is frequent among idiots and the insane, and the highly educated are more often sufferers—*i. e.*, brought to the attention of the physician. The proportion is larger among men than women. In the literature on the subject up to 1898, 106 cases in all had been mentioned, in which nine were women.

Clinical Description.—It is usually confined to the period of gastric digestion and is not accompanied by any symptoms of discomfort. When occurring in cases of stagnation and fermentation, the taste is foul. In cancerous cases the rumination may cease as the malignant condition becomes more marked. Gastric symptoms are here due entirely to the neoplasm. The chemical condition of the gastric contents varies from achylic to hyperchlorhydric. Motility, size, and location also vary. It was once maintained that cases were either achylic or hyperchlorhydric, and they were treated accordingly by the respective supporters of these theories. Salivary secretion is generally overactive. With regard to the size of the stomach, a case is on record where the organ when filled held but twelve ounces, and its greatest transverse diameter was two inches and a half.

The history of the disease dates far back. In 1618 the condition was spoken of by Fabricius. It was thought at that time that ruminants were descended of horned parents, or were nourished when infants at the breasts of cud-chewing animals. It was also declared that the stomachs of these unfortunate persons were divided for double chewing.

It was for autopsy to reveal the true condition of things. There has been a claim that patients could regurgitate dishes eaten the day previous; also, by Darwin, that any particular dish could be brought back at pleasure. During digestion fluids first leave the stomach; hence the regurgitation, at a later period, of solids proves simply a phase of digestion, not the patient's wish. Hemmeter advances that a diet entirely of vegetables improperly masticated will more frequently cause rumination than other food articles. Deheo claims the frequent vomiting in pertussis to cause cardiac relaxation.

The diagnosis is not difficult if you can see the patient ruminate.

The prognosis is good as to life—not so bright as to permanent cure. Many of these people ruminate from infancy to old age.

Treatment.—Remove the cause if possible. Beyond that the best thing is a strong will power. Have meals served always in company with some one whom the patient respects. Arrange the diet with strict regard to gastric secretion. Use as far as possible articles of food which remain a short time in the stomach. Warn and guard against the contraction of the abdominal muscles. A good idea, suggested by Hemmeter, is to administer at meal time some extremely bitter preparation. He has used quinine with success. Permit me here to suggest a combination, as follows:

Fluid extract of condurango, Fluid extract of quassia, Compound tincture of gentian,	of each, 20 minims;
Tincture of nux vomica, Tincture of capsicum,	of each, 10 "

A patient once regurgitating this mixture will hesitate the second time.

Internal faradization acts well. Alkalies or hydrochloric acid, according to gastric indication, may be used. Morphine and opium have been used, but with no very great success, and in these cases there is great danger of the habit being contracted, which would be far more detrimental to the patient than the rumination.

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A CASE OF ACETANILIDE POISONING.

By O. R. SUMMERS, M. D.,

MIDDLETOWN, IND.

On Sunday, February 4th, at 6.30 p. m., Mr. W. came to my office, stating that his wife, Mrs. W., was suffering from a severe frontal headache, and requested me to send her something to relieve it. Accordingly, I gave him six four-grain acetanilide powders, directing him to give her one powder upon reaching home, in half an hour to give her another if pain was not relieved at the end of this time, and in an hour to give her another powder. About 8.30 p. m. I received a hurried call to the home of Mr. W.—that I come to his house at once, as he thought his wife was dying. I responded immediately, and on arriving at the house I found the following condition of affairs:

Mrs. W., aged twenty-six years, of spare build, mother of four children—the youngest one, aged nine months at the present time, at the breast. The family history was good, with no traces of heart trouble. The patient had been suffering all the afternoon with an intense frontal headache. In the evening Mr. W. gave the powders as directed—one powder when he reached home, and one half an hour later, making eight grains of acetanilide given.

About fifteen or twenty minutes after the patient had taken the last powder she complained of nausea and giddiness. The pain in the head suddenly ceased. In a short time respiration became next to impossible. I found upon examination the pulse 140 and almost imperceptible, respiration 35, temperautre 95° F.; there was cyanosis of the lips and finger tips. The arms, hands, and legs were cold. The body was covered with profuse cold perspiration, the pupils were dilated, and at intervals there were strong convulsive movements, with partial loss of consciousness and great retching. I administered stimulants, such as whisky and strychnine nitrate, and kept up artificial respiration for about two hours.

Dr. F. L. Thornburg was then called in for counsel. We continued the above-mentioned treatment, and by eleven o'clock the patient was greatly improved and resting fairly well, and we returned home. I was again called to the home of Mr. W. at 11.30 and found the patient much worse than when we had left her at eleven o'clock. We again pursued our treatment as before, and within a short time the patient was again resting easily, and at one o'clock I returned home. I called at nine o'clock Monday morning and found the respiration 20, the pulse 90, and the temperature 100° F. The patient was very nervous. She was confined to her bed four days, being unable to leave it on account of vertigo.

I mention this case, first, from the fact that it is the first case of the kind coming under my notice. Second. The smallness of the dose of acetanilide. Third. The severity of symptoms produced. Fourth. I have given the patient much larger doses of the drug many times, which fact proves there was no idiosyncrasy for the drug.

Therapeutical Notes.

Pills for Hemicrania.—The *Settimana medica* for November 25, 1899, gives the following formulæ:

1. ℞	Zinc phosphide	2.25 grains;
	Reduced iron	18.00 "
	Extract of nux vomica	1.80 grain.

M. Divide into eight pills. Two or three to be taken in the course of twenty-four hours.

2. ℞	Zinc valerianate, Iron sulphate, Asafœtida, Aqueous extract of rhubarb,	18 grains.

M. Divide into twenty pills. Three to be taken daily.

An Ointment for Fissured Nipples.—According to *Progrès médical* for February 3d, Crinon cites the following from Vinay:

℞	Aristol	1 part;
	Vaseline	20 parts.

M. To be applied after each act of suckling.

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WOMEN NURSES IN THE ARMY.

In the February number of the *Woman's Medical Journal* there appears a very interesting article by Anita Newcomb McGee, M. D., an acting assistant surgeon in the army (so appointed to enable her to take charge with proper authority of the women nurses of the army, the Army Nurse Corps). Dr. McGee tells of the needs of the army in the matter of nursing at the outbreak of the war with Spain and of the achievements of the brave and skillful women employed as nurses, under the very sensible plan sanctioned by the surgeon-general, in dispelling many prejudices against the employment of women as army nurses. It seems that soon after the opening of the war the Daughters of the American Revolution, of which order Dr. McGee was the vice-president-general, rendered great service to the country by acting as an examining board to select women nurses for the army. It may safely be said that in hardly any other way could the Daughters have justified their existence as an order more convincingly or more gracefully.

At the outset it was not expected that the services of women would be needed elsewhere than in the general hospitals, but they soon proved their usefulness so conclusively that regimental surgeons and other medical officers of bodies of troops ordered to the actual theatre of war began to ask leave to take their women nurses with them. They were allowed to do so, and the results showed that the misgivings widely felt as to allowing women in camp were not well founded. The women faced hardships with the fortitude of men, and their presence was not in the least embarrassing. In particular, they were of eminent service in teaching cookery to the men of the Army Hospital Corps.

Various religious sisterhoods did good work during the war in furnishing women qualified to act as nurses, but no organization of trained nurses rendered any noteworthy assistance. "In spite of the overcrowding which had previously been complained of in the nursing profession," says Dr. McGee, "there was much difficulty at the time of greatest stress and need in securing enough suitable applicants to fill the demands from the camps." It is to be hoped that such a state of things will never occur again, and it is reasonable to expect that it will not, for Dr. McGee tells us that the members of her corps of women nurses are satisfied with their treatment, pay, and emoluments, and that the list of reserve nurses, subject to government call, but not under pay when not in active service, is looked upon as a roll of honor.

CLUB MEDICAL PRACTICE: A CRITICISM AND A SUGGESTION.

From the *Dominion Medical Monthly* for February we learn that "the battle of the clubs" is being fought in Victoria, B. C. The medical practitioners of Victoria, doubtless stung at last into action by the increasingly impudent exactions of local "benefit" societies, recently organized a medical society having as the chief plank in its platform the rule that from the beginning of the current year all members should abstain from participation in lodge practice. The members of the leading benevolent societies, struck with alarm, thereupon met in solemn conclave and passed resolutions of indignant protest and others having for their object the replacement of the members of the Medical Society of Victoria by other physicians so far as the rendering of medical aid to benevolent and friendly societies was concerned. The combined fraternal and benevolent societies further caused to be inserted in the provincial papers an advertisement for two or more qualified physicians to act as their medical officers.

A few reflections upon "contract practice," which is making such serious inroads into the professional subsistence of the large mass of general practitioners, may not be out of place. Let us first consider the standpoint of the general practitioner in his individual relations with the public. What is the physician's stock in trade with which he earns his living as a member of the community? It is comprised in the three following items: 1. Invested capital, represented by the money and time involved in graduating, and this includes the cost of his maintenance up to the age of twenty-one, which is the earliest age at which the law permits him to practise; the cost not only of his technical training, but of that high general education also which is essential to his attainment of the proper standard of skill and ability, and also of the heavy initial cost of establishing himself in practice. 2. His actual labor—*i. e.*, the time spent and the wear and tear of gray matter endured in attendance on his patients, which, it must be remembered, knows no "closing hours," but keeps him constantly on the rack even when not actually engaged. 3. A deep and serious sense of responsibility, which entails the continuance of his student career through life, the labor involved therein producing no direct remuneration, and this is both general in relation to the increasing progress of medical knowledge, and special in relation to the particular cases he may happen to have on hand. These three factors represent undoubtedly a very costly commodity, of which the patient seeks the usufruct.

Now, it is well known that there is a variation in the fees charged by every practitioner for the same work performed on behalf of patients of differing financial capacity. From the public point of view the doctor is considered to be "charging all that he can, and more when he can get it"; whereas the true statement of the case is that his higher fee is the only one which presents him with any adequate remuneration for his services, while the lower ones represent the philanthropic spirit of the profession, not understood by the public because not practised by them as a rule in their respective callings, and are a concession to the means of the patient. When reductions in ordinary commerce are made, they are made either from personal good feeling or because of indirect business advantages accruing thereby. The concessions made by the physician, on the other hand, are made in obedience to his conception of the trust imposed on him by the sacredness of his profession as a humane vocation. Therein lies a gulf between the practice of medicine and any merely business pursuit.

Now as to benefit and fraternal societies. Their object, we take it, is twofold: 1. To encourage providence and foresight. 2. To aid the distressed and needy. The first aim is attained by inducing the individual while in health to "lay by against the inevitable rainy day"; while the second is achieved by the process of "evening up," "taking the rough with the smooth," as it were, the unfortunate ones getting the benefit of the contributions of those more lucky than themselves. So far so good. On this basis there is nothing *per se* to complain of in the principle of club practice. Where, then, does the shoe pinch?

The mischief comes in when men of essentially different financial capacities are banded together by payment of a uniform subscription, and that subscription in every instance inadequate to meet the average bill for attendance charged, even at the greatest concession commonly made from the physician's highest, or standard, fee, short of the bestowal of charity. The fact is lost sight of that a contract salary which would "even up" to a fair remuneration for the actual amount of work done in a club of men of approximately identical financial capacity would not so "even up" for the same amount of work done in a club containing the same number of members of much greater means. And this not because the latter were being overcharged, but because the former were having made to them that concession which it is a privilege of the medical profession to make where it is reasonably called for, though an imposition when exacted from it under other circumstances. Consequently it follows that a benefit society of mixed classes, with a uniform subscription for its members, is a means in many instances of bestowing a degrading charity upon unworthy recipients at the expense of the medical profession.

Is there any way by which practice among benevolent societies could be put upon a satisfactory working basis? We think there is. Let all the members be divided into classes according to their financial standing, and let the members of each class pay to a strictly medical fund an average composition fee, to be calculated on an actuarial basis as the premiums of life-insurance societies are calculated, the itemized tariff of fees for visits, operative work, etc., being fixed by the society at the lowest generally acceptable standard for patients of that class to which they are rendered. Then, when a member of the society was ill, he would have no difficulty in securing the attendance of any one of the medical officers who had signified their willingness to accept the scale of remuneration laid down by the society for the class to which the patient belonged. This method would fulfill the only justifiable purposes of the club—viz., the inculcation of thrift and provident foresight among its members and the securing of advantages for the unfortunate by means of the principle of cooperation, while it would bring fair remuneration to the physician, which he could accept without any sense of degradation, and would, moreover, give to the patient the inestimable advantage of the choice of a physician who was *persona grata* to him—a by no means unimportant factor in therapeutics. We commend this suggestion to the affiliated benevolent societies of Victoria, and to any others that may find themselves threatened with trouble in regard to medical attendance.

A PREMONITORY SIGN OF BRIGHT'S DISEASE.

If we knew that a person was likely to be attacked with Bright's disease, but was not yet affected with it, doubtless it might be warded off in many instances. It is hard to see any connection between the occurrence of the Cheyne-Stokes type of respiration during sleep and the supervention, several years later, of chronic nephritis. However, M. O'Donovan (*Semaine médicale*, 1899, No. 44; *Wiener medicinische Blätter*, December 21st) reports three cases of such a sequence of events.

THE ACTION OF THE NAUHEIM BATHS.

Much as the Nauheim treatment of heart diseases has accomplished, it is well to ascertain its limitations and the conditions that contraindicate its employment. Dr. H. Hensen (*Deutsche medicinische Wochenschrift,* 1899, No. 35; *Wiener medicinische Blätter,* November 2d) finds that carbonic-acid baths increase the blood pressure, and thinks they are contraindicated in cases in which the integrity of the myocardium is so impaired as to unfit it for the strain, also in cases in which there is danger of apoplexy or some other hæmorrhage on account of the heightened tension.

INJURIES OF THE CARPAL BONES.

A case showing the nicety of diagnosis that may be arrived at with the help of the Röntgen ray is recorded by Nélaton (*Revue d'orthopédie,* 1899, No. 2; *Centralblatt für Chirurgie,* March 3d). A fall on the outstretched hand, with the wrist strongly flexed, the force of the fall coming on the ends of the metacarpal bones, resulted in a fracture of the os magnum, with subluxation of the semilunar bone. In this case and a similar one three months' treatment with massage as its chief element gave better results than would have been likely to occur from a cutting operation.

THE WAKAMBA ARROW POISON.

This is a poison used by the natives of German East Africa. According to Professor Brieger (*Deutsche Medicinal-Zeitung,* October 30th), it acts upon the heart like digitalis. Its active principle is a crystalline glucoside so exceedingly poisonous that 0.00075 of a grain, administered to a guinea-pig weighing rather less than a pound, manifested its specific effects in twenty minutes, and caused the animal's death in fifty minutes. An alleged antidotal bark termed "dawa" proved powerless against it.

GELATIN ENEMATA IN INTESTINAL HÆMORRHAGE.

Among the varied applications of the new-found hæmostatic, gelatin, is its employment in intestinal hæmorrhage. The *Presse médicale* for December 16th, without mentioning the source of its information, says Dr. Guttmann was called to a child, thirty-six hours old, which was literally bathed in its own blood, which evidently came from the rectum. He sent for some sheet gelatin, dissolved it in warm water, administered half of the solution as an enema, and ordered the rest to be given by the mouth in small doses. The child had one more bloody passage, but after that there was no more bleeding, and recovery took place.

A LOW INCISION FOR APPENDICULAR ABSCESS.

Now and then what seems to be an error may give us a useful hint. Such an occurrence is suggested by Dr. Leonard Weber in the *Medical Record* for March 10th. He says that so far back as in 1867, in performing the Willard Parker operation, he made the incision about the same as if he had intended to tie the common iliac artery. When he found that he was working below the abscess and behind the peritonæum, and could feel and see the iliac pulsating, he thought it prudent to desist. Accordingly, a drain was inserted to the bottom of the wound, and within forty-eight hours the abscess, advancing in the direction of the least resistance, burst into the wound. Dr. Weber suggests that by such an incision in the operation for removing the vermiform appendix abdominal hernia, infection of abdominal muscles, etc., would readily be avoided.

EPILEPTIC BULIMIA.

Great hunger is known to follow an epileptic seizure in many instances, but this should not be confounded with such hunger occurring as the precursor of a seizure, as is pointed out by M. Féré (*Revue de médecine,* 1899, p. 497; *Deutsche Aerzte-Zeitung,* March 1st), who calls it the *faim-valle épileptique.* It is sometimes associated with a well-marked epileptic attack, sometimes with a partial disturbance of consciousness. The patients complain of great hunger, and devour large quantities of any article of food they can lay hands on. It is rare for them to long for any particular dish.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION'S FIRST VOLUME OF *TRANSACTIONS.*

We have received the first volume of a series destined undoubtedly to be more and more widely known as embracing much of the best literary productions of the medical profession of the great Mississippi Valley. Not only in its substance, but in its careful editing and beautiful appearance, is the volume exceedingly attractive. The publication committee, consisting of Dr. Henry E. Tuley, Dr. Lewis S. McMurtry, and Dr. Dudley S. Reynolds, is entitled to the highest commendation.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported for the two weeks ending March 17, 1900:

DISEASES.	Week ending Mar. 10.		Week ending Mar. 17.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	13	6	19	9
Scarlet fever	174	19	193	15
Cerebro-spinal meningitis	0	6	0	3
Measles	874	30	729	18
Diphtheria	264	46	256	45
Laryngeal diphtheria (croup)	14	7	17	14
Tuberculosis	223	163	230	188
Chicken-pox	25	0	33	0
Small-pox	0	0	7	0

The Mütter Course of Lectures on Surgical Pathology at the College of Physicians of Philadelphia.—The course of Mütter lectures for 1899–1900 will be delivered in the hall of the Mütter Museum of the College of Physicians of Philadelphia by Dr. John B. Roberts, on Tuesdays and Fridays, from March 27th to April 27th, inclusive, at 8.30 P. M. The subjects to be treated are as follows:

March 27th: A Brief Review of the Development of Reparative or Plastic Surgery.

March 30th: A Rapid Survey of the Anatomy (Constructive, Regional, and Artistic) of the Human Face.

April 3d: Characteristic Features of the Operative

Surgery of the Face. The Fundamental Principles of Successful Plastic Operations.

April 6th: The Removal of Disfigurements due to Pigments, Cicatricial Distortions, Fistules, Congenital Fissures and Errors of Development, Tumors, and Skin Diseases.

April 10th: The Correction of Deformities of the Mouth and Lips.

April 13th: The Reconstruction of the Lips and Cheeks.

April 17th: The Correction of Deformed Noses.

April 20th: The Construction of New Noses. (Total and Partial Rhinoplasty.)

April 24th: The Operative Treatment of Deformed or Deficient Ears.

April 27th: The Cosmetic Surgery of the Eyes.

The Sheldon Murder Trial.—We have received the following note from Dr. William S. Cheesman, one of the authors of an article the publication of which is concluded in this issue: "Lest there be any misunderstanding, I should like to state that the authors of the article on the Sheldon murder trial, begun in your issue of March 17th, speak not for themselves alone, but with the approval of the other surviving experts for the prosecution. These are Dr. J. D. Tripp and Dr. J. P. Creveling. Dr. C. O. Baker and Dr. E. S. Forman have died since the trial. All these gentlemen were engaged equally with us in the work described, and the results are theirs as well as ours."

The Buffalo Academy of Medicine.—At the last meeting of the Section in Pathology, on Tuesday evening, the 20th inst., Dr. H. R. Gaylord was to read a paper entitled The Present Status of Recent Investigations on Cancer.

The St. Louis Medical Society of Missouri.—At the last regular meeting, on Saturday, March 17th, the following papers were presented for discussion: Fifty Years' Study and Practice of Rhinology, continued—Events of the Years 1866, 1867, and 1868, by Dr. Thomas F. Rumbold; and Post-febrile Insanities, relating particularly to *la Grippe* and Typhoid Fever, by Dr. J. K. Bauduy.

Changes of Address.—Dr. Frank Irving Disbrow, to No. 40 West Thirty-fifth Street, New York; Dr. J. Solis-Cohen, to No. 1824 Chestnut Street, Philadelphia.

Society Meetings for the Coming Week:

MONDAY, *March 26th:* Medical Society of the County of New York; Lawrence, Massachusetts, Medical Club (private); Cambridge, Massachusetts, Society for Medical Improvement; Baltimore Medical Association.

TUESDAY, *March 27th:* New York Dermatological Society (private); Metropolitan Medical Society, New York (private); Buffalo Academy of Medicine (Section in Obstetrics and Gynæcology); Rome, New York, Medical Society; Medical Society of the County of Lewis (quarterly), New York; Boston Society of Medical Sciences (private); Richmond, Virginia, Academy of Medicine and Surgery.

WEDNESDAY, *March 28th:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Auburn, New York, City Medical Association; Berkshire, Massachusetts, District Medical Society (Pittsfield); Philadelphia County Medical Society.

Births, Marriages, and Deaths.

Born.

CHASSAIGNAC.—In New Orleans, on Thursday, March 15th, to Dr. and Mrs. Charles L. Chassaignac, a daughter.

FREEMAN.—In Everett, Massachusetts, on Tuesday, February 27th, to Dr. and Mrs. George F. Freeman, a daughter.

Married.

BUSENSHUTTE—ACKERMAN.—In Brooklyn, on Tuesday, March 20th, Dr. William Busenshutte and Miss Maude Ackerman.

GESSNER—HAYES.—In Lake Charles, Louisiana, on Tuesday, February 27th, Dr. Hermann B. Gessner, of New Orleans, and Miss Jessie A. Hayes.

LINES—GAMARD.—In New Orleans, on Tuesday, March 20th, Dr. Ezra A. Lines and Miss Helena R. Gamard.

MATHER—POE.—In Baltimore, on Saturday, March 17th, Lieutenant George Herbert Mather and Miss Eleanor A. Robertson Poe, daughter of Dr. William C. Poe.

MORRISON—STEELE.—In San Francisco, on Wednesday, February 28th, Dr. John McI. Morrison and Miss Sadie Steele.

WINANS — GILL. — In Rochester, on Wednesday, March 7th, Dr. William Wallace Winans and Miss Maude Lillian Gill.

Died.

BAILEY.—In Brooklyn, on Saturday, March 10th, Frederick De Forest Bailey, Jr., son of Dr. Frederick De Forest Bailey, in the eighth year of his age.

BEEBE.—In Boston, on Sunday, March 11th, Dr. Arthur Appleton Beebe, in the twenty-eighth year of his age.

BOGMAN.—In Atlanta, on Monday, March 5th, Dr. Edward Young Bogman, formerly of Boston, in the fiftieth year of his age.

GRAVES.—In Woburn, Massachusetts, on Tuesday, March 13th, Dr. Frank W. Graves.

MADDOX.—In Perthshire, Mississippi, on Sunday, March 4th, Dr. James H. Maddox.

MAYO.—In Boston, on Friday, March 9th, Dr. U. K. Mayo, in the eighty-fourth year of his age.

MENZIES. — In Waterville, Maine, on Saturday, March 10th, Dr. William Menzies.

NOLAN.—In Brooklyn, on Sunday, March 11th, Dr. John Nolan.

ORRELL.—In Brooklyn, on Sunday, March 11th, Alexander Nellis Orrell, only child of Dr. Edward P. Orrell.

PECK.—In Brooklyn, on Thursday, March 8th, Dr. Aaron E. Peck, in the sixty-fifth year of his age.

PENNINGTON.—In Newark, New Jersey, on Wednesday, March 14th, Dr. Samuel Hayer Pennington, aged ninety-four years.

ROUSSEL.—In New Orleans, on Friday, March 9th, Esther Elizabeth, only daughter of Dr. William D. Roussel, of Patterson, Louisiana.

SEARLS.—In Lakewood, New Jersey, on Wednesday, March 14th, Virginia White Searls, wife of Dr. Wellington B. Searls.

STETSON.—In Everett, Massachusetts, on Monday, March 12th, Dr. John P. Stetson, of Boston.

STRONG.—In Kankakee, Illinois, on Friday, March 16th, Dr. Albert B. Strong, of Chicago.

Pith of Current Literature.

Journal of the American Medical Association, March 17, 1900.

Symptomatology, Diagnosis, and Treatment of Neoplasms of the Kidney. By Dr. L. L. M'Arthur.

Renal Calculi. By Dr. M. L. Harris.

Pathology of Renal Neoplasms. By Dr. D. N. Eisendrath.

The Physician as a Witness in Court. By Dr. William J. Herdman.—The writer refers to the skepticism of the public as to the reliability of expert testimony. He reviews the various suggestions which have been made and concludes: "The suggestions taken from all these sources that are found to harmonize may be epitomized as follows: The experts should be appointed by a trial judge, and their compensation should be made a part of the expenses of the court. Abundant opportunity to investigate all the facts in the case should be afforded them. Their opinion should be in writing, signed, and sworn to. Any dissenting expert opinion to be also in writing and to contain the grounds of dissension. The experts may be sworn as witnesses and cross-examined, but the range of the cross-examination is not to extend beyond the limits of the subjects embodied in the opinion which they have been asked to express."

Infantile Diseases from the Standpoint of Biology. By Dr. Joseph Clements.

May not Gonorrhœal Vulvovaginitis be Acquired by Children Indirectly? By Dr. Charles O'Donovan.

The La Grippe Exanthemata. By Dr. Harriet E. Garrison.

The Nutritive Function of the Bronchial Arteries in Growth. Disease and Repair of Pulmonary Tissue. By Dr. D. Lichty.

Some Points in the Treatment of Severe Crush Injuries of the Extremities. By Dr. John P. Lord.—Great stress is laid upon antisepsis, and the author prefers formalin, "which," he says, "is destined to take a place of first rank in the treatment of all septic conditions."

Treatment of Gunshot Wounds of the Abdomen: Some New Statistics. By Dr. H. H. Grant.

Professional Education and Ethics. By Dr. A. E. Baldwin.

Case of Hepatic Abscess Presenting Some Points of Interest. By Dr. Hermann B. Gessner.

Gastrectomy. By Dr. W. S. Thorne.—Patient, female, aged fifty-two years; a history of gastric and intestinal indigestion for several years. After examination the "diagnosis lay between a floating kidney undergoing degenerative changes and a cancer of the stomach." Operation was decided upon and cancerous deposit found upon the lesser curvature. Gastrectomy. Time of operation, one hour and forty minutes, which the author believes can be lessened. Loss of blood moderate. The Murphy button was used, as it "shortens the time of the operation." But the author is doubtful as to its being the best method of effecting union in gastrectomy. As to the value of the operation, experience is as yet too limited to judge.

Patient survived the operation forty hours. Temperature after operation, 98.1°. Lowest pulse rate, 140. Temperature remained subnormal to the end.

Medical Record, March 17, 1900.

Some Points in the Therapeutics of Heart Diseases. By Dr. W. H. Thomson.—The writer is of the opinion that ultimate failure in the treatment of many chronic heart diseases is frequently found in the placing of too great a reliance on nervine medicines, such as digitalis, strophanthus, nitroglycerin, etc. He believes that we should aim to restore nutrition rather than to stimulate function, and believes that fresh-air sanatoria, similar to those proposed for the treatment of tuberculosis, are still more demonstrably applicable for the prevention and cure of chronic heart failure. Iron he "never fails to administer," and one-twenty-fourth-grain doses of bichloride of mercury, three times a day for a week, are advised in chronic endarteritis. Iodide of sodium is preferable to the potassium salt, and the cutaneous stimulation of the carbonic and saline baths is of great service.

The Inoculation Wound of Lues. By Dr. Charles Warrenne Allen.

Chorion Epithelium and Decidua in Tubal Gestation. By Dr. B. S. Talmey.

Some Remarks on Whooping-cough as seen in Dispensary Practice. By Dr. Walter A. Dunckel.

Six Nephrectomies. By Dr. F. V. Cantwell.

Medical News, March 17, 1900.

The Significance of Earache in Children. By Dr. T. H. Halstead.—The author's conclusions are that: 1. Earache in children is generally caused by acute inflammation of the middle ear, suppurative or catarrhal. 2. Infants and young children may have suppuration in the middle ear without giving satisfactory evidence of pain, or without rupture of the drum membrane. 3. Purulent otitis media is nearly always present in acute infectious diseases of the gastro-intestinal and respiratory tracts in young children, and probably stands in a causative relation to gastro-enteritis and broncho-pneumonia. 4. The cause of death in many acute and chronic infectious diseases, in meningitis, and in the exanthemata, is the result of unrecognized and untreated abscess of the middle ear.

Case of Pulmonary Tuberculosis Successfully Treated by Drainage and Iodoform, with Apparent Recovery. By Dr. Alexander Hugh Ferguson.

The After-treatment of Fractures and Dislocations. By Dr. D. N. Eisendrath.

Instruments and Apparatus used in the Diagnosis of Gastric and Intestinal Diseases. By Dr. H. W. Lincoln.

Tympanomastoiditis. By Dr. Erndon Fritz.

Boston Medical and Surgical Journal, March 15, 1900.

Injuries about the Shoulder at Birth. By Dr. J. S. Stone.—The writer has become convinced that, in most of these cases, "injury to the brachial plexus is by far the most important factor," direct injury to the bone and joint being of only secondary importance. After stating that obstetrical paralysis is of Erb's type, and that the deltoid is the muscle most seriously affected, the author reviews in brief the theories as to the causation of this paralysis, and agrees with Fieux and with Carter that the paralysis is due to nerve stretching and, in extreme cases, to nerve tearing.

The position of the arm in this paralysis is characteristic. "It hangs at the side, rotated inward strongly, with the elbow slightly flexed, the forearm pronated, and the wrist and fingers flexed."

Of infantile dislocations of the shoulder, the true congenital dislocation (due to lack of intra-uterine development of the glenoid cavity and the head of the humerus) and the traumatic dislocation (produced during delivery) are extremely rare. The vast majority of the cases must be regarded as paralytic.

As to treatment, support for the arm is essential. Later on electricity and massage have their uses. When the paralysis persists surgical intervention may be of benefit. However, if not recovered from within a few months the prognosis is bad.

Steam in the Treatment of Chronic, Hyperplastic, and Senile Endometritis, Putrid Abortion, and Puerperal Sepsis. By Dr. W. F. Johnson.—As to technique, a fenestrated uterine catheter is joined to a small boiler, the steam to be at 212° F. "In this way dangerous uterine hæmorrhage can be arrested permanently and painlessly without an anæsthetic, and serious operations—for instance, hysterectomy for fibroid tumors—may be avoided." Cases follow.

Philadelphia Medical Journal, March 17, 1900.

Selections from the Lane Lectures. Diseases of the Arteries. (Concluded.) By Dr. T. Clifford Allbutt.

A Case of Tetanus Treated by Subdural Injections of Antitoxine and Hypodermic Injections of Carbolic Acid. By Dr. Ernest Laplace.—The patient, a man, aged thirty-two, ran a rusty nail into the sole of the right foot. Symptoms of tetanus were manifested ten days after the accident. On the fifth day of the disease the patient was trephined on the left side, a little posterior to the motor area, and twenty cubic centimetres of antitetanic serum were injected slowly under the dura. No appreciable reaction. Two days after, forty cubic centimetres were administered. Twenty-four hours later, opisthotonus set in. The spasms were violent, resulting in marked cyanosis. Hypodermic injections of five drops of pure carbolic acid in fifteen drops of water every three hours were then given. On the tenth day the symptoms moderated gradually, and on the twenty-fifth day the patient was able to sit up and walk about; recovery. No untoward brain symptoms permanently followed the injections.

The Spontaneous Disappearance of Senile Cataract, with Report of a Case. By Dr. Walter L. Pyle.

Hairpin Removed from the Bladder through a No. 12 Kelly's Cystoscope. By Dr. Hiram N. Vineberg.

Connective-tissue Tumors of the Abdominal Wall. By Dr. Albert L. Stavely.

Glosso-labio-laryngeal Paralysis, with Report of a Case. By Dr. Francis P. Morgan.

Peroneal Type of Progressive Muscular Atrophy. Report of Two Cases. By Dr. Theodore Diller.

Report of a Case of Gangrene of the Tonsil. By Dr. Alexander C. Howe.

The Lancet, March 10, 1900.

The Surgery of the Stomach. By Dr. A. Mayo Robson.—In this, the first of the three Hunterian Lectures delivered by the writer before the Royal College of Surgeons, he treats in a thorough and most interesting manner of simple exploratory operations, of gastrotomy and the mode of its performance, and of the surgical treatment of gastric ulcer and hæmorrhage from the stomach.

Practical Observations on Cancer of the Breast. By Sir W. M. Banks.—See abstract of the *British Medical Journal* of even date.

The Sanitary Conditions of Irish National Schools. By Dr. A. Roche.

A Case of Rupture of the Brachial Plexus. By Dr. Mayo Collier.—The writer reports the case of a man who had an epileptic seizure while driving a street-sweeping machine. He fell and the wheel passed over his right shoulder, rupturing the brachial plexus. He was comatose when first seen and cerebral hæmorrhage was suspected. The motor and sensory paralysis was limited to the right arm, however, and differed in character from that usually seen in cerebral hæmorrhage, corresponding almost exactly to the distribution of the brachial plexus. The pupils were unequal, due to injury of the right cervical sympathetic. Four excellent photographs showing the distribution of the anæsthesia, etc., accompany the article.

A Suggestion for a Method of Opening the Pericardial Sac, Founded upon a Case of Purulent Pericarditis. By Dr. C. Ogle and Dr. H. Allingham.—The writers report a case of purulent pericarditis in a man aged thirty-six years. The pericardium was opened on the twelfth day of the disease and an incision was made along the fifth left cartilage; two inches of the cartilage were removed, and after dissecting down to the pericardium the sac was opened. About sixteen ounces of thin pus spurted out and large flakes of tough lymph were removed with the fingers. The sac was irrigated, its edges sewn to the skin, and free drainage instituted. Although the heart's action improved, death took place fourteen hours after the operation. After calling attention to the freedom with which the heart may be handled without injury, the writers suggest that the heart could be easily approached by opening the pericardium from below through the diaphragm. In this way sponges on holders could be introduced and swept around the heart and thus remove all adherent lymph.

On the Application of Electricity in Medical and Surgical Practice. By Dr. H. L. Jones.—This article deals with the apparatus used in electrical therapeusis.

Tuberculous Disease of the Kidney: its Ætiology, Pathology, and Surgical Treatment. By Dr. David Newman.—This conclusion of the writer's article deals with the prognosis and treatment of this affection. He concludes that though the mortality following operation is very high, yet a sufficient number of cases recover to make it justifiable.

Complete Ossiculectomy (Removal of Remains of Drumhead, Larger Ossicles, and External Attic Wall) in Chronic Otitis Media. By Dr. R. Lake.—The writer's article is based upon a table of results of fifty cases of complete ossiculectomy, and is of interest chiefly to the aural surgeon.

Gunshot Wound of the Abdomen, with Injury to the Intestine. By Dr. C. Reissman.—The writer reports a case under the above title, in which recovery took place without operation. From it he is led to doubt the general rule that all perforating wounds of the intestine must be dealt with by an immediate laparotomy.

British Medical Journal, February 17, 1900.

An Address on the Rôle of the Municipality in Public Hygiene. By Sir Charles A. Cameron, C. B.

An Address on Medical Practice in European Countries. By Dr. Thomas Kilner Clarke.

An Address on Recent Legislation in Relation to the Medical Profession. By Fletcher Beach, M. B., F. R. C. P.

An Analytical Account of Fifty-seven Cases of Puerperal Infection. By Dr. W. Edgar Macharg.—The author's analysis is largely statistical and tabular. Only nine of the patients received serum treatment. In six there was no apparent result; of the three others, there was a slight fall of temperature in one (which finally proved fatal), "the result in another was doubtful," and in the third distinct improvement followed. Six of the nine died (which six, is not stated). The author despairs of any real advance in the treatment of puerperal infections, except by surgical intervention, and anything short of complete removal of the uterus would be worse than useless. If the ovarian vein has been invaded, the affected portion of the vessel should be removed.

A Case of Puerperal Septicæmia in which a Favorable Result was obtained from One Injection of Antistreptococcus Serum. By H. W. Webber, M. S. Lond. —The author first saw the patient on December 11th, a week after she had been delivered by a midwife. Her temperature was then 105° F., and her pulse 120. There was a profuse vaginal discharge of a rusty-brown color and a peculiar foul, pungent smell. Under the use of uterine irrigations the patient seemed a little improved at the end of three days, though the foul discharge continued. On the morning of the following day, however, she was in a very bad condition, only partly conscious and with a brownish frothy material issuing from her mouth. Later in the day ten c. cm. of Burroughs, Wellcome, & Co.'s antistreptococcus serum were injected beneath the skin of the abdominal wall. The patient was then delirious, her temperature was 103°, and her pulse was 130. The next morning the temperature had fallen to 101°, and the pulse to 100, and she was much improved in every way; in particular, the vaginal discharge was smaller in amount and had lost its foul odor. A few more irrigations were administered, and she slowly recovered, but for a time she was without control over the bladder and rectum, and was in a mental state bordering on melancholia.

On the Use of Antistreptococcus Serum in Puerperal Septicæmia and Erysipelas. By A. J. Anderson, M. B. —Mr. Anderson gives the histories of one case of puerperal septicæmia of a mild type and of two cases of erysipelas. All of them ended in recovery under the serum treatment. The author finds that the serum is powerfully depressing to the circulation, and he fears to give more than one injection in twenty-four hours.

A Case of Placenta Prævia and Rupture of the Uterus; Recovery. By Dr. James Pearse.—The rupture, which was situated posteriorly and low down, was discovered when the hand was introduced to extract the placenta after delivery by podalic version. The woman was apparently moribund, but she recovered without any further treatment than regular and careful feeding and keeping the bowels confined.

A Case in which a Pulmonary Abscess was Successfully Drained. By Charles A. Morton, F. R. C. S.

The British Medical Journal, March 10, 1900.

Practical Observations on Cancer of the Breast. By Sir William Banks.—In this, the first of the Lettsomian Lectures, the writer gives his experience with cancer of the breast, and states his belief that the disease occurs with greater frequency at the present day than formerly. He calls attention to the paramount importance of early diagnosis, and believes that the questions of heredity and constitution must always be carefully considered. Finally, while not believing every case of cancer to be of traumatic origin, his experience teaches him that in the present state of our knowledge traumatism as a cause can not be disregarded.

The Surgery of the Stomach. By Dr. A. W. Mayo Robson.—See abstract of the *Lancet* of even date.

The Causes and Treatment of Movable Kidney. By Dr. C. Mansell Moulin.—This article is an abstract of the first Hunterian Society lecture.

A Contribution to the Surgery of Perforated Gastric Ulcer. By Dr. A. B. Mitchell.—In this article, which is based upon the results of thirteen operations for perforated gastric ulcer, the writer reviews the subject and discusses the cases reported by him. Of these thirteen cases, only six recovered.

Perforating Gastric Ulcer, with Notes of Two Successful Cases after Operation. By Dr. P. R. Griffiths. —The writer reports two cases of perforating gastric ulcer in which operation was successfully performed.

Gastro-jejunostomy for Gastric Ulcer. By Dr. W. J. Greer.—The writer reports the case of a woman, aged twenty-eight years, upon whom he performed gastro-jejunostomy for simple gastric ulcer. The small intestine was joined to the stomach by means of a medium-sized Murphy's button. The opening was nearer to the greater curvature than to the axis of the stomach. The writer expresses his satisfaction with von Hacker's position, which was used in this case.

Gazette hebdomadaire de médecine et de chirurgie, February 25, 1900.

The Diagnosis of Typhoid Fever in the Puerperium. —Dr. Lepage speaks of the great difficulty of diagnosticating typhoid fever in its early days, when it appears after childbirth. The accoucheur thinks primarily of sepsis and treats his patient accordingly. The author reports a number of cases in detail and reaches these conclusions: The serum diagnosis of typhoid fever is especially valuable in puerperal cases, since it eliminates at once septic processes starting from the uterus, yet a septic infection due to the streptococcus or staphylococcus may go hand in hand with a typhoid fever.

Gazette hebdomadaire de médecine et de chirurgie, March 1, 1900.

Appendicitis with Lumbar Abscess opening into a Bronchus; Recovery.—Dr. Jeanmire reports a case of appendicular abscess which pointed in the right lumbar region, where it was opened by an incision. Profuse expectoration with cough continued, the sputum being very fœtid. This gradually diminished and finally disappeared.

Gazette hebdomadaire de médecine et de chirurgie, March 4, 1900.

Metatarsalgia. By Dr. M. Péraire and Dr. F. Malby.—The authors quote extensively from the literature of the subject, attributing to rheumatism, heredity, the graver nervous disorders, malaria, and pregnancy ætiologic power. Infantile paralysis and pes varus may also evoke the disease. Two forms are recognized, the benign and the grave, with a mean form between these extremes. The first shows intermittent stages of pain, is purely neuralgic, and is aggravated by neurasthenia. The middle variety usually appears after a traumatism and has exacerbations. Its prognosis is somewhat less favorable than in the benign variety. In the grave form, the plantar pain is continuous, which is increased by walking and fatigue. Flexion of the first phalanx upon the metatarsus produces pain similar to pressure upon the sole of the foot. This variety may follow an injury or gonorrhœa. The gait is necessarily slow. It lasts for a long time and the prognosis is serious, spontaneous recovery being rare. Orthopædic treatment for all these varieties may first be tried. If it is unsuccessful, surgical measures must be employed—liberation of the head of the affected metatarsal bone, section and removal of it. Special shoes must then be prescribed.

La Presse médicale, February 21, 1900.

Hypertrophic Tuberculous Stricture of the Small Intestine. By T. Tuffier.—The author believes that intestinal stricture that is not cancerous is generally due to tuberculous disease; the so-called fibrous, or cicatricial, stricture is commonly of bacillary origin. He divides strictures of the small intestine into three varieties—the purely cicatricial, those that are fibrous from the outset, and the hypertrophic. The third variety, by far the rarest, is characterized by a mixture of bacillary lesions and ordinary inflammatory reaction. Upon a tuberculous invasion of the mucous, submucous, and muscular coats there is engrafted common inflammation arising from such invasion together with arrest of fæcal matter. In such cases the stenosis is the result of a true fungous enteritis; it is the proliferation and thickening of the intestinal walls that effaces the lumen. The author then relates the particulars of a case. He gives a picture of the specimen removed and of microscopical sections, and concludes with a summary of forty-five cases of intestinal stricture treated by operation, thirty-seven of which were cured, including every one of eight cases of the hypertrophic form.

La Presse médicale, February 28, 1900.

The Hepatic Form of Typhoid Fever.—Dr. H. Roger relates two cases of typhoid fever which presented a sudden fall of temperature, the one on the twelfth, the other on the fourteenth day of the disease, followed on the succeeding day by vomiting of a bilious character and a diarrhœa with stools of a yellowish-green color. There was absence of meteorism, and no other indication of perforated intestine except progressive weakness, which ended fatally. At autopsy, the liver, in both cases, was found enormously enlarged, of a doughy consistence, and of a uniform reddish-yellow color; on section, the large vessels were seen to contain fluid blood while the parenchyma was bloodless, homogeneous, and resembled fatty degeneration. Microscopic examination and chemical analysis confirmed this opinion. Experiments on dogs by injecting acetic acid into the common bile duct, brought about a similar hypothermia with marked histologic changes in the liver. Dr. Roger concludes that a sudden sharp fall of temperature occurring at the time of the roseolar outbreak must find its explanation in the degeneration of the liver. This, together with a severe jaundice, bilious diarrhœa, and vomiting of bile, speaks for the clinical entity which the author describes as the hepatic form of typhoid fever.

A Case of Progressive Nuclear Ophthalmoplegia.—Dr. Ausset and Dr. Raviart report the case of a child of seven years of age, with a complete paralysis of the left oculomotor nerve and a paresis of the same right nerve, a slight inflammation of the right optic nerve, paralysis of the inferior branch of the right facial, dysarthria, lingual paresis, a staggering gait and a right hemiplegia, with undisturbed sensation. All these symptoms became progressively worse, bulbar symptoms predominating. A solitary tubercle or a glioma was diagnosticated. At the autopsy, a solitary tubercle was found occupying the lower right optic region near the foot of the right peduncle. It had grown very large, occupying nearly the entire skull, encroaching posteriorly upon the foot of the left peduncle. It pressed upon the anterior quadrigeminal tubercles and the exit of the third nerves, although the former were not invaded by the neoplasm. The aqueduct of Sylvius was distended by cerebro-spinal fluid and the superior portion of the island of Reil was invaded. The authors trace the symptoms to the pathological findings.

A Simple Method for Staining Tubercle Bacilli.—Dr. Lafforgue recommends placing the cover-glass, after fixing, in Ziehl's cold fuchsin for thirty seconds; then getting rid of the excess of fuchsin by inclination of the cover-glass without washing, then placing it in a one-tenth-per-cent. solution of citric or tartaric acid until the color becomes rosy. Next, wash once and rapidly in alcohol, then in distilled water; counter-stain in aqueous methylene blue or weak carbolic. Sections may be put through the same process, but the acid solution must be twice as strong. Leprosy bacilli may be stained by the same means.

La Presse médicale, March 3, 1900.

Pneumonia due to Contusion.—Dr. A. Sougnes says that a contusive pneumonia differs from a traumatic pneumonia in that the lung is injured only indirectly in the former, while in the latter it follows a penetrating injury to the lung or is due to a foreign body or to a fragment of a broken rib. He relates a case in which an acute lobar pneumonia followed within a few days in a soldier who slipped from a car step and fell upon his back. There is no difference in the course or symptoms of such a pneumonia from an ordinary one, and its sole interest lies in its ætiology.

Habitual Spasmodic Constipation and its Treatment.—Dr. R. Romme says this form of constipation is usually seen in neurasthenics, whose abdomens are not distended but flat, and the sides of whose abdominal walls are strongly contracted. There is no tenderness, or a little in places. The sphincter is in a state of tonic contraction. Treatment is hydriatic—hot compresses or lukewarm douches over the abdomen, lavage of the large intestine, and a careful diet. Drugs are usually without effect.

L'Indépendance médicale, February 28, 1900.

Psychic Disturbance Cured by Hypnotism.—Dr. Paul Facez relates the case of a Jewish woman who became much affected during the Dreyfus trial by the anti-Semitic outbursts. She was suffering from diabetes at the time. The excitement became intense; she had delusions of persecution at the hands of anti-Semites, which were accompanied by auditory and visual hallucinations. The main treatment was hypnotic. She was completely cured of her mental ailment, but her glycosuria has persisted.

L'Indépendance médicale, March 7, 1900.

Pathology of Syphilis of the Testicle.—Dr. Cornil says that caseous degeneration of the testicle may follow syphilitic infection, tuberculosis, or traumatism. Luetic orchitis appears in two forms, interstitial and gummatous. In the former variety it develops from five to twenty years after the initial lesion, after an injury or spontaneously. It becomes larger and more sensitive than normal, then diminishes in size and sensitiveness, but remains hard. Finally, it atrophies and loses sensation entirely. Gummata are situated for the most part in the parenchyma of the organ, but they can involve the tunica vaginalis. They are variable in size and may involve, especially if unilateral, the greater part of the testicle. A gumma may, on section, be seen to occupy the periphery when it is hard and vascular; or it may appear as a central, semitransparent, inspissated mass; or the whole central mass of the testicle may be red and caseous. Their main characteristic is their hardness, but they are to be differentiated from tuberculous masses at times only by inoculation experiments. Congenital syphilis of the testicle always shows itself as an atrophied testicle which on microscopical section, shows a hypertrophy and a new formation of connective tissue in the seminiferous tubules, the same lesion that is found in congenital syphilis of the liver, spleen, kidney, or lung.

Lyon médical, March 4, 1900.

Right Homonymous Hemiplegia of Post-typhoidal Central Origin.—Dr. M. Annequin reports such a case. He concludes that hemiplegia is a rare complication of typhoid fever and is usually curable when it does not begin as an apoplexy; the association of a central hemiplegia with a peripheral neuritis (as in the reported case) is very rare; the absence of the least intellectual disturbance in a paralysis of central origin is striking; the grouping of the symptoms in this case makes the probable localization of the lesion in the anterior part of the posterior arm of the internal capsule at the point of junction of the trunk of the facial nerve and the pyramidal tract of the left hemisphere.

Acute Suppurative Inflammation of the Psoas. Trephining the Pelvis.—Dr. G. Gayet reports a case of this nature of puerperal origin. The diagnosis having been made, an opening was made just below the arch of the pubes. Pus was evacuated, but the drainage was not good. The ilium was then trephined at a point situated about halfway on a line uniting the anterior and posterior superior iliac spines. Entrance into a large pocket of pus was thereby gained. Good drainage was thus obtained from the crural wound and the opening made by the trephine. The operative result was good, although the patient died two months later. The author says the operation is simple, easy, giving a good immediate result, and he would caution only against too free irrigation of such an abscess cavity, and he would emphasize the necessity of complete immobilization immediately after the operation.

Deutsche Medizinal-Zeitung, March 5, 1900.

Conceptions of Sleep in Health and in Nervous Disease.—Dr. A. Erlenmeyer calls attention, in an interesting paper, to the conceptions as to the length of time spent in sleep by healthy persons and by those afflicted with nervous disease, neurasthenia especially. He points out that in health there may be the conception that, even after a considerable period of sleep, there has been no sleep at all. This may occur, for instance, during a railroad journey when a person awakes as the train stops, having no recollection of having passed other stations or of having been asleep. This is the form, he says, in which the lack of perception of sleep is most common in nervous disease. The patients complain of inability to sleep, while they have actually slept all night oblivious to all purposeful disturbances. The practical bearing of the paper lies in the author's warning to watch such patients carefully before dosing them immoderately with hypnotics which they do not require.

Deutsche Medizinal-Zeitung, March 8, 1900.

Hysteria Virilis.—Dr. Retslag reports a case of a man who suffered for many years from intestinal disorders and who was attacked from time to time with feelings of great anxiety and distress, palpitation, and universal weakness. He would always fall and had a sense of paralysis in the arms and legs, but consciousness was never disturbed. Under dietetic and suggestive treatment he recovered from his melancholia and his gastro-intestinal disturbance, and has had but one light hysterical attack.

The Use of Aspirin in Nervous Diseases.—Dr. L. Goldberg has found aspirin in doses of fifteen grains very efficacious in facial neuralgia, vertigo, tinnitus aurium, headache, and rheumatic affections. A single dose only need be administered to secure relief.

Wiener klinische Wochenschrift, March 1, 1900.

Vesical Suture in Suprapubic Cystotomy.—Dr. Georg Lotheissen prefers suture of the bladder in cases in which a suprapubic cystotomy has been performed for stone or for a foreign body in which the urine does not contain too many pathological elements. He claims earlier recovery from the operation and alleges that the dangers, especially that of urinary infiltration, are no greater than when the bladder is drained. He accepts von Hacher's rule—to individualize in each case and not to suture the bladder completely when there is marked thickening of the bladder wall, when the urine is not clear and is alkaline, and when secondary nephritic changes are to be feared. Suture is contraindicated in severe cystitis, rupture of the bladder, hypertrophic vesical walls, and kidney complications. The author reports three cases in which the bladder was tightly sutured by tier sutures, recovery following in thirteen, fourteen and eighteen days, respectively.

The Biology of the Malaria Parasites.—Dr. Xaver Lewkowicz, after a study of four hundred and forty-six cases of malarial fever in Cracow, says that there are recognized four distinct varieties of parasites which can evoke the disease: 1. The large tertian parasites. 2. The large quartan parasites. 3. The small tertian parasites which he regards as being ætiologic for the malignant or tropical tertian forms of the disease, called by the Italians æstivo-autumnal. 4. The crescentic forms, pathognomonic of the fever with long intervals. The author's studies incline him to the belief that there is but one form of malarial parasite, which is the view of Laveran, but that this organism is subject to variations which are not stable and which can merge from one into the other.

Therapeutic Studies on Sanatogen.—Dr. Edward Rybiczka reports on the use of this new albuminoid compound. It is a grayish-white, dry powder, with a slight odor and a not unpleasant taste, which dissolves in warm water. It is composed of ninety-five per cent. casein and five per cent. glycero-phosphate of sodium. The advantages of the compound, says the author, are its high nutritive properties, its easy digestion and assimilation, and its scarcely perceptible taste. It stimulates the appetite in different kinds of disease, it acts as a sedative, especially in the insomnia of neurasthenia, it increases the weight, and, in one instance, the hæmoglobin was increased under its use. The patients to whom it was given had a sense of well-being.

Wiener klinische Wochenschrift, March 8, 1900.

Radiographic Pictures of the Normal Aorta.—Dr. G. Halzknecht finds, after an exhaustive study on the living, the dead, normal and abnormal patients, that a shadowy fluoroscopic picture starting from the cardiac region visible from the rear as a broad, even band, intensely dark and pulsating with the heart, rounded at the top and lying at the height of the sterno-clavicular articulation, is a constant picture in the normal human being, and can only be the projection of the ascending aorta and its arch.

A Case of Congenital Hypertrophy of the Pylorus causing Stenosis.—Dr. Franz Housy reports a case of this kind which was cured by a gastro-enterostomy with the use of the Murphy button.

The Biology of the Malarial Parasites.—Dr. Xaver Lewkowicz concludes his elaborate paper with clinical considerations. He is inclined to ascribe to the crescentic form the ætiological power in the cases of long intervals (rigesimotertiana), and is not yet willing to depart from his belief of the unity of forms of the parasite. He does not agree with Koch that fresh cases of malaria develop only during July, August, and September, the warmest months. He believes that if the so-called chronic cases are vigorously treated during the winter months, when they have no attacks, not only can they be prevented from having recurrences the following year, but that a subsequent malarial epidemic in that district may be prevented.

Wiener klinische Rundschau, March 4, 1900.

Diseases of the Eye occurring in Influenza.—Dr. Michael Mohr gives a concise historical account of the various influenza epidemics and their ophthalmic complications. Among the eye affections noted in recent years he speaks of hyperæmia of the conjunctiva, conjunctivitis of croupous form, episcleritis, subepithelial keratitis, and other varieties of corneal disease. (To be continued.)

Malignant Œdema.—Dr. Alois Brabec concludes his report on the case of malignant œdema *sui generis*. He says the distinguishing characteristic of this form of the disease is that it constitutes an œdema without pus formation and without pus, but with a purely hæmorrhagic dropsical fluid. It advances not by way of the vascular system or the lymph channels, but in the subcutaneous connective tissue. It remains a long time, therefore, as a local process and causes death on account of the impossibility of stopping its progress, so that in the course of time large areas of the body are affected. Access of the affected part to the air in order to give the bacteria as unfavorable a medium as possible for their growth, amputation or disarticulation are the only means of treatment.

Experiences in the Surgical and Medical Treatment of Cholelithiasis. By Dr. Carl Ewald.—(Continued article.)

St. Petersburger medicinische Wochenschrift, February 10, 1900.

Two Cases of Thrombosis of the Transverse Sinus.—Dr. Rudolph Warnach, in reporting two cases of thrombosis of the transverse sinus following otitis media, the one infested by the streptococcus, the other by the staphylococcus, the former recovering, the latter dying, after operation, emphasizes the necessity of surgical intervention in these cases. The former case was in an old man who had many complications, while the latter was in a young man otherwise well. The prognosis was favorable in the second instance, while it was dubious in the first. The author points out, too, the desirability of ligating the jugular vein only when it is thrombosed, otherwise it may be productive of harm.

The Leprosy Sanitarium in Wenden.—Dr. Kiwull writes an interesting description of the institution and its management.

St. Petersburger medicinische Wochenschrift, February 17, 1900.

A Case of Total Exclusion of the Intestine.—Dr. A. von Bergmann says that entero-anastomosis or partial exclusion of the intestine is to be performed in cases of inoperable tumors of the intestine which have not become attached to the abdominal wall and have not perforated. The presence of fæcal fistulæ is an indication for total intestinal exclusion. Even when the tumor has not ulcerated through, total exclusion may be performed by the method of Wölfler by cutting through the gut above the tumor, closing the distal end, and guiding the intestinal contents through a lateral implantation of the peripheral end to any free piece of gut below the neoplasm. Experience has shown that the belief that fæcal circulation absolutely ceases in intestine partially excluded is erroneous, and the author narrates a case to prove this assertion. He records a case of total exclusion carried out for the relief of three fæcal fistulæ resulting from a large perityphlitic abscess. The result was a perfect cure.

St. Petersburger medicinische Wochenschrift, February 24, 1900.

Delusions of Married Women, especially that of Infidelity of the Husband.—Dr. Brosius calls attention to these delusions as manifestations of a psychosis, usually paranoia, and urges the importance of recognizing the mental state before it leads to domestic disaster.

Prager medicinische Wochenschrift, March 1, 1900.

Extraction of the Bactericidal Elements of Leucocytes. By Dr. Friedrich Weleminsky.—(Continued article.)

The Position of Permanent Hospital Physicians in Bohemia. By Dr. J. Horner.

Riforma medica, February 24, 25, 26, 27, and 28, 1900.

A Study of Hydrocele. By Nicolino Federici.—This is a clinical study of hydrocele of the tunica vaginalis. In speaking of the use of injections of iodine, he mentions the fact that Gueillot cites a case where the injection of iodine was followed by a transitory parotiditis due to the absorption of iodine. The method of total excision advocated by Bergmann has various disadvantages. It is very difficult, for example, to isolate the various elements of the spermatic cord. There is a possibility that the tail of the epididymis, or the epididymis itself, or the testicle, will be injured by the compression due to the formation of new tissue in the cicatrix at the lower portion of the epididymis and of the testicle. Even after this operation, the hydrocele may recur. However, in spite of its disadvantages, it is considered the more secure method, and is preferred in cases where the hydrocele is unilateral.

Owing to the difficulty of sterilizing the trocar, the simple procedure of puncture may be a means of infection, and it is always a doubtful measure so far as permanent cure is concerned. He says that some patients would rather subject themselves to repeated punctures than to submit at once to a radical operation. The method of producing a closure of the sac by introducing foreign bodies into the tunica for the purpose of irritating the lining membrane is also now known to be worthless. The method of Molteni, by means of electrolysis, may be employed in cases of closed hydrocele, but must be rejected in cases where there is a communicating cavity. Jaboulay's method and that of Doyen have the disadvantage that a space is left which may eventually become filled with fluid. The method used in preference to all others in the writer's clinic is that of Hueter. An incision is made at the lower part of the swelling, and a counter opening is made in the upper pole of the sac, over a long forceps, which is introduced from below and serves as a guide. Then a drain is introduced.

The irritation which is produced by the drain is more than sufficient to excite the formation of adhesions between the serous surfaces of the sac, and hence to cure the hydrocele permanently. Very rarely the formation of these adhesions is so slow that it is necessary to recur to a single injection of a solution of iodine. The report of a series of cases follows.

Riforma medica, March 1 and 2, 1900.

A New and Cheap Thermostat of Simple and Easy Construction. By C. Tanzig.

The Vagus Nerve in Relation to the Malignant or Complicated Forms of Measles. By Emilio Cioffi.—The writer thinks that there is a tendency on the part of both laymen and physicians to regard measles as a benign disease, which always terminates in recovery. It may be remembered that in some epidemics—*e. g.*, in Berlin during the years 1863–1867—the death-rate from this disease was forty-one per cent., and in Hungary, in 1860, even fifty per cent.

Among the children who survive there are, in addition, a certain number who after a few months, perhaps years, die of tuberculous meningitis, of pulmonary tuberculosis, or of some other insidious sequel of the disease. Perhaps no other infectious disease can be followed by such grave consequences. The statistics of mortality in Italy show that more persons die of measles than of scarlatina or of diphtheria. The writer thinks that physicians are too prone to give a favorable prognosis in measles, and that it is lucky that some of them have not worked in a severe epidemic of the disease. How often does it happen in such an epidemic that the physician tells the parents that in a few days the eruption will fade and the child will get well! But how frequently this child will be near death within twelve hours! The purpose of the present paper is to describe the various forms of malignant measles and its various important complications, and to inquire into their relation to the vagus nerve.

The writer then goes on to describe the gangrenous and the so-called black or hæmorrhagic measles, and cites several cases to illustrate these types of the disease. He states that in a certain number of cases of malignant measles death occurs very suddenly, and he asks whether the vagus nerve has anything to do with this sudden heart failure. He reviews the physiology of the cardiac nerves, and states that the vagus protects the heart from influences which necessitate its overaction—namely, dyspnœa, a rise of blood pressure, and a rise of temperature. If the temperature rises and the frequency of the heart is increased, the cardiac muscle is threatened with exhaustion after a time. But the rise of temperature also excites the inhibitory vagus centre, and thus the heart is somewhat relieved. In contrast to what happens in other infectious diseases—*e. g.*, scarlatina, diphtheria, typhoid, etc.—the heart in measles does not show the presence of dilatation, nor of fatty degeneration, and hence we can not speak of nutritive changes in, nor of failure of, the cardiac ganglia in measles. Hence the sudden death in these cases is solely referable to the extrinsic nerves of the heart. After the vagus centre has been stimulated for a time by the action of the elevated temperature, and after the centre in the medulla oblongata has for a certain time maintained the equilibrium between the vagus action and that of the temperature, there comes a time when the hyperpyrexia, the high blood pressure, and the effect of the bacterial products cause such an excitation of the centre as to result in its paralysis. Then the heart stops in diastole. In cases which terminate in sudden death the heart beats very fast, then gets slower, becomes imperceptible, and finally stops. This takes place in cases which end fatally on the second or third day of the illness. In other cases, where the conditions seem more favorable, and which last longer, the heart stops suddenly without a perceptible lessening of the frequency of its beat.

The same thing occurs in paralysis of the vagus due to diphtheria. When we consider that, in addition to the influence of the fever, the inhibitory centre is probably also excited by the toxines of the bacteria which are responsible for the disease, it is evident that the vagus centre faces formidable enemies. The author believes that when the micro-organism of measles shall have been found, it will be very easy to demonstrate experimentally that the toxines of the germ have a selective action upon the nerve supply of the heart. (To be continued.)

Gazzetta internazionale di medicina pratica, February 28, 1900.

Myxœdema, a Diabetes of Thyreoid Origin? By Nicola Dominicis.—This is a summary of a communication to the Royal Academy of Medicine of Naples. The writer reviews the pathology of myxœdema, and the results of the experimental work with thyreoidectomy and with thyreoid feeding. The two theories which are usually accepted concerning the pathogenesis of myxœdema are (1) that the thyreoid gland secretes in health a substance which is necessary for the maintenance of the nerve centres, and (2) that it produces a substance which destroys toxines which are formed in the organism in the course of metabolism. The latter theory is indorsed by Paladino, who believes that the symptoms which follow thyreoidectomy are caused by the absence of this substance, or antitoxine which protects the nerve centres from the influences of the toxines. The lesions found in the liver and in the spinal cord in myxœdema due to thyreoidectomy are very much like those seen in the same organs after the removal of the pancreas.

It has been demonstrated experimentally that when fresh thyreoid juice is directly injected into the blood or into the subcutaneous tissues it temporarily arrests the sequelæ of thyreoidectomy (Vassale). The author thought this experiment was a proof of the antitoxic action of the thyreoid secretion, and in order to test this question began a series of special experiments in 1891. He found that when the blood of a healthy animal was directly transfused into an animal suffering from experimental myxœdema, the symptoms of the latter ceased after half an hour or a little longer, and returned again in three or four days. If this was repeated, the animal would act in the same way, but would finally die of the disease.

Next he tried to transfuse the blood of animals whose glands were extirpated into other animals which had been similarly dealt with. To his surprise, he found that this blood, which was supposed to be laden with toxic matters which caused the phenomena of myxœdema, would also produce an abatement of the symptoms in the animal injected. Baldi obtained similar results. The inevitable conclusion is, therefore, that no toxic substance which can be destroyed by the thyreoid secretion exists in the blood. The results of thyreoid therapy vary greatly in the hands of different observers. The author believes that thyreoid extract is only a palliative measure, and this only when perfectly well borne by the system.

He concludes that myxœdema is a complex of lesions in all parts of the body which is accompanied by a variety of clinical manifestations. He thinks it may be considered as a *special type of diabetes* in which the primary lesion is situated in the thyreoid gland, and the secondary pathologic changes affect the nerve centres and all the other tissues of the body. Like diabetes, it is accompanied by severe lesions, and finally by destruction of the pancreas. It may be termed thyreoid diabetes, as the other is called pancreatic diabetes.

Unlike pancreatic juice, which is merely an essential of digestion, thyreoid extract compensates for the loss of the gland secretion until incurable pathologic changes occur in the vital organs of the body.

Vratch, February 5, 1900.

A Contribution to the Question of Suprapubic Cystotomy. By Dr. V. I. Lisiansky.—The author reports fifty cases of suprapubic cystotomy for stone. He discusses the various methods of closing the wound in the bladder and in the abdominal wall after the operation, and says the most desirable method is that which is the most secure, and which results in the shortest and least troublesome convalescence.

The question is, whether it is better to leave the wound of the bladder and of the abdominal parietes open after the operation, or whether to suture it by one of the various methods. There is no doubt that the results of suprapubic cystotomy with suture have decidedly improved during the past ten or twelve years. The statistics of primary union of such wounds after suture vary from thirty to eighty-six per cent. of successful results. In considering the merits of the suture, it is not only necessary to take into consideration the question of primary union, but also the efficiency of the suture in general—*i. e.*, the question whether the suture retains the wound's edges in apposition, hence whether the suture has fulfilled the requirements which have been set for it. In the hands of some surgeons the vesical suture has given some excellent results, and thus we hear its praises sung by certain operators. Solomka, for example, regards the suture as an essential part of the operation, and claims that it renders convalescence shorter and recovery more certain. The author can not agree with this. As long as it is impossible to seal the cavity of the bladder hermetically by means of a suture (and this is as yet not feasible, in spite of the great development of the technique of the operation), we can not say that suture should be used in all cases. The bladder is a very movable organ, and is not well covered by peritonæum at the site of the incision. All this militates seriously against secure and prompt union. The author bases his position in this matter upon sixty-eight cases of suprapubic cystotomy for stone, and two cases of the same operation for other conditions.

He finds that the urine penetrates through the sutured wound in small quantities, and at fairly frequent intervals. In spite of this, primary union usually takes place if the urine dose not contain pus, and if the patient is well nourished. Even if the urine contains pus, there is a certain amount of probability of primary union, if the patient is a strong and well-nourished subject. Finally, in certain cases, the infectious material which is present in the urine conquers the resistance of the organism. The urine invades the space of Retzius and a septic pericystitis follows. It is important, in suturing the vesical wall, not to sew through the mucosa, but to make the stitches pass through the other layers of the bladder wall. This precaution is necessary, not only because otherwise additional facility is given to the urine to escape, but also because stones have been known to form on the silk thread in the cavity of the viscus when the suture has been improperly applied. Of course the bladder wall must have a certain thickness to make this method of suturing possible. When the bladder wall is thin, the surgeon must take great care not to puncture the mucosa. In fact, a certain amount of denuded surface is necessary for a secure healing of the wound, and hence, if the wall is very thin, it is certainly better not to suture the wound at all. The method of Antal—freshening of the walls of the bladder adjacent to the wound—may be employed in such cases, but the author has never tried it.

If the wound is stretched, the knots in the ligature may penetrate into the cavity of the bladder, and thus give rise to the formation of stones. The writer always uses an interrupted suture of silk, the distance between the knots being about half a centimetre. He does not use the continued suture. In some cases he affixes the sutured wound of the bladder to the posterior surface of the recti muscles by means of two ligatures, a method which was first suggested by Professor Rasumovsky. Sometimes he draws these ligatures through the entire thickness of the abdominal wall, and ties them on the surface of the skin over a pad of sterile gauze. This facilitates the removal of the ligatures after the wound has securely healed, and is especially recommended in cases where we are not sure that we have not pierced the mucosa in applying the sutures or the supporting ligatures. The method of affixing the vesical wound to the posterior surface of the abdominal wall is not a new one, having been suggested and employed by Ebermann. Other surgeons—*e. g.*, Pavlov, Troyanov, and Salischieff—suture the edges of the vesical wound to those of the abdominal incision, when it is inadvisable to close the former. The general opinion seems to be that the fixation of the vesical wound to the abdominal parietes protects this part of the bladder from motion, and assists in obtaining a firm closure of the sutured surfaces. In the main the writer agrees with this, but he speaks of a case where the patient had a violent paroxysm of coughing, which caused the wound to stretch and allowed some urine to escape. He thought that in this case, if the bladder had remained free, the movement of the abdominal muscles produced by the cough would have had no effect upon the viscus.

In cases where there is fever, purulent cystitis, or where the vesical wound is bruised by the stone, and also in cases where the complete suture of the bladder wall is impossible or very difficult for technical reasons, the author applies a partial suture to the incision in the bladder. He leaves an opening of sufficient size, inserts a drain, and places the patient in Assendelft's position—namely, supine on the abdomen. He usually fixes the partially sutured incision in the bladder to the posterior surface of the abdominal wall, and brings out the two ligatures in the way indicated above. This is done because certain patients can not lie on their abdomen for any length of time, and must be placed on the back, thus exposing the perivesicular cellular tissues to extravasation of urine.

The chief element of success in suprapubic cystotomy is undoubtedly the filling of the bladder thoroughly and completely with fluid. The author finds that this is not always easy, especially in younger men with rather sensitive urethral mucous membrane. In such cases he is in the habit of injecting a 1-to-480 solution of cocaine into the bladder, but even this did not always help. On the other hand, in older individuals the bladder is much less sensitive to distention than in the young. Here there is another danger—that of overdistention, and even of rupture of the viscus, owing to the thin and often atrophied condition of its walls in persons advanced in years. As a rule, about one hundred to three hundred and fifty cubic centimetres are injected, varying according to age. In filling the bladder there is usually a certain amount of air injected with the fluid. This air collects on top and can be made out on percussion by the tympanitic sound which it produces. The bladder should also be palpated to make sure that it has been filled as nearly as possible. In case of doubt, make the incision, and then feel the bladder and determine whether it has been properly distended.

Of the complications which may accompany the operation, he mentions the accidental opening of the peritonæum, the occurrence of severe hæmorrhage, and of diarrhœa. If the peritonæum has been opened the operator must sew it up at once, and there usually will be no complications. Hæmorrhage may often be controlled by tamponade of the wound. Diarrhœa is an unpleasant complication, and patients have died after the operation because of the presence of an uncontrollable diarrhœa. The writer does not use the colpeurynter nor packing of the intestine before the operation, as these measures, though helpful, are troublesome to execute. An analysis of the first six cases of the series is appended to the article, which will be continued in the following number of *Vratch*.

A Defense of Osteoplasty in Amputations. By Dr. S. I. Spassokukotzky.—The author pleads for the broader application of osteoplasty in amputations of the extremities, and repeats the views which he expressed in a former article in 1898. He reports five cases of amputation at the knee for crushing injuries due to railway accidents and for gangrene. The chief, if not the sole, purpose of osteoplasty in such cases is to create a stump which, like the heel and the knee, can support the direct weight of the body in walking.

A simple amputation of the thigh does not give these conditions, and therefore it is necessary, in cases where it is impossible to save any part of the knee, to employ Gritti's operation. In the writer's first case this operation was performed in two parts, and the patient recovered with a good stump.

The second case was a crushing injury of the lower extremity, involving the parts below the knee. Unfortunately, the operation was not done until osteomyelitis had set in. Biers's operation was performed with good result. In the remaining three cases the same operation was performed with excellent results. In these cases the patients were peasants, and it was important that they get a stump which will serve them well without the expensive and elaborate appliances of the instrument maker. In all these cases the patients wore simple wooden-leg stumps which they fashioned themselves. His conclusions are that the excellence of the functional result justifies the surgeon in taking the extra care which this operation demands. He says that the difficulty of the operation is by no means such as has been claimed. In fact, the remarkable ease with which he performed the osteoplasty after a little practice astonished even the young physicians who assisted him. As to the duration of the operation, he states that it took but forty-five minutes to amputate both limbs by the method of Biers in one of his cases—a time sufficiently short to refute the accusation that this operation is too lengthy.

Concerning the Theory of the Endothelial New Growths. By Dr. L. V. Sobolev.—The author takes as his text a case of multiple endothelial tumors, where the new growths were scattered throughout the entire gastro-intestinal tract. He considers the case as worthy of mention both because of its morphological peculiarities and because in the entire range of literature he has not been able to find a single case of primary endothelioma of the intestine. It is not astonishing, therefore, that the pathology of this tumor is as yet but little known. The author could find but a single case of endothelioma of the stomach, reported by Fick, who, in turn, quotes a case of similar character, reported by Jungmann. The literature of endothelioma in general is very abundant, however, and every year this still unsolved mystery of ontology excites more and more interest on the part of investigators. At the same time the views of these investigators on this subject seem to become more and more unanimous. Thus nearly all pathologists at the present time classify endothelioma as a separate variety of tumors belonging to the connective-tissue group, which are distinguished from sarcoma by certain morphological peculiarities, and also by their benign course. They are called endotheliomata because they originate in endotheliomatous tissues. The author contends that these tumors should be placed in a class of their own in the classification of new growths. On this point pathologists differ, inasmuch some—*e. g.*, His, Hertwig, Waldeyer, and Hinsberg—maintain that endothelium is derived embryologically from the same layers as epithelium, while others—*e. g.*, Letulle, Ranvier, Marchand, and Roloff—stand for the theory that endothelium is derived from connective-tissue cells.

The history of the case reported is as follows: A woman aged twenty-eight, single, entered the hospital on February 28, 1898. She complained of constipation, eructation of gas, and pain in the epigastrium, which had lasted for nearly a year. Three months since there was added to this anorexia and severe vomiting. A month before admission there appeared œdema of the face and of the feet. In addition, she complained of disturbances of menstruation, of a burning pain during micturition, and of frequent desire to urinate. Her father died of cancer. She was a woman of medium height, extremely emaciated, the skin and mucous membranes were pale. In the region of the stomach there was felt a firm tumor with an irregular surface, which was evidently connected with the firm, somewhat movable body, which can be felt on deep pressure under the right border of the ribs. The urine is turbid, and the sediment contains hyaline casts sometimes covered with pus corpuscles, a large number of pus cells, and a few blood-corpuscles. The diagnosis was cancer of the stomach of the right kidney and of the ascending portion of the colon and inflammation of the bladder and ureters. In spite of the treatment, the patient got constantly weaker, and the vomiting and constipation did not cease. She died on the 27th of March in the presence of symptoms of heart failure. (To be continued in the following number.)

A New Nasal Speculum for Children. By Dr. J. I. Katz.—The writer describes a modification of Fraenkel's nasal speculum which is specially adapted for children. The author's speculum has shorter and narrower blades than Fraenkel's. The lower part of the fenestrated blades is bent outward at right angles instead of curving gently toward the handle as in the prototype. This the author considers an important improvement, inasmuch as it gives a better view of the interior of the nares, and marks off the extent to which the speculum may be introduced without injury to the parts. When the speculum is introduced these angular parts lie just over the upper lip. The arms of the blades thence run parallel and are connected with the dilating mechanism of the instrument in the same way as in the original model. The chief advantages of the proposed modification are that no part of the instrument comes between the eye of the examiner and the cavity of the nose, throwing shadows upon the mucosa, and making the passage of thick instruments—*e. g.*, powder blowers, tampons, etc.—difficult, and also that the maximal distance between the blades is larger, a distinct advantage in operative work.

A Contribution to the Question of the So-called "Sudden Cataract."—A Case of Rapid Clouding of the Crystalline Lens during an Attack of Hysteria. By Dr. I. I. Maslennikof. The author continues the description of the case which he began in a former issue of the journal. The patient was a woman, aged twenty-seven, who was in good health, except that she was subject to hysterical attacks. The writer inquires into the cause of this sudden clouding of the crystalline lens. It is known that in certain diseases which are accompanied by general muscular spasms—*e. g.*, eclampsia, etc.—there may be clouding of the lens, due to violent spasms of the muscles of the eye. In fact, it has been observed that the ætiology of cataracts is connected with the occurrence of convulsive seizures of various kinds, but the exact relation between these events is as yet unknown. It is not clear whether the lens becomes clouded in such cases in consequence of muscular spasms which tear the capsule, tear the zonula of Zinn, and change the intraocular pressure, and are accompanied by spasm of the blood-vessels, or whether the cataracts are due to changes in nutrition due to alterations in the composition of the contents of the eye chambers, or due to the presence of poisonous substances, the result of the disease itself. There is a great difference of opinion among authorities on this question, but the majority take the last-named view concerning alterations in nutrition. The writer asks how this theory can be applied to his case, where the patient was perfectly well organically, and only suffered from a functional disease—hysteria. In this disease, it is true, a great variety of ocular disturbances have been observed and reported. The author thinks that an explanation of the sudden clouding can be more easily reached if we do not insist that hysteria is a purely functional affection. In fact we do not know the real ætiology of hysteria and neurasthenia, and it is possible that these so-called neuroses are due to disturbances in the nutrition of the system which specially affect the nerves. It can be easily imagined that a series of hysterical attacks which repeat themselves at intervals during several years may of themselves produce a weakening of the resistance in the lens, in its capsule, or in the ligament of Zinn, without the presence of disturbances of nutrition other than hysteria. In one of these attacks, perhaps a very severe one, it is possible that the lens can give way, and become clouded suddenly. In conclusion the writer cites the seven other cases of sudden cataract of the eye which he has been able to find in literature.

Miscellaneous.

Precipitate Labor in a Primipara aged Forty-three.—The *Edinburgh Medical Journal* for February cites the following:

"Knepper records an interesting case of precipitate labor in the *Vierteljahreschrift für gerichtliche Medicin*, Berlin, 1899, Heft 4. The woman, who had been informed of the difficulties of a labor by her neighbors, consulted a doctor and a midwife as to the indications of impending labor, so that she might be prepared for the event. When proceeding to go to bed one night, her husband being present in the room, she suddenly felt what she considered to be a call to stool. While in the act of placing herself upon the chamber pot, the child was precipitated from her into this utensil. The doctor and midwife, who arrived in the course of a few minutes, found her standing by the side of the bed holding the infant in her arms. The umbilical cord was still attached to the placenta *in utero* and to the child, being stretched by thus having to support the weight of two petticoats and a dress, which she was wearing. The child was living, and a strong, well-developed female, weighing six pounds and a half, and nearly twenty inches in length; circumference of the head, thirteen inches. There was no caput succedaneum, nor any mark of injury upon the child, except a small superficial abrasion over the right parietal bone. There was no blood upon the floor or upon the mother's clothes, while in the chamber pot there were only about two hundred cubic centimetres of a slightly blood-stained fluid, evidently liquor amnii. The frenulum showed a very slight tear, but otherwise the maternal parts were uninjured. Her pelvis was not unusually large. The mother and child both did well, although the former suffered afterward from symptoms of prolapse of the anterior vaginal wall."

The Treatment of Fractures by Systematic Movements and Massage and without Immobilization.—Dr. Lucas-Championnière (translated for the *Medical News*, January 6th) recalls the fact that in 1894 he formulated and began to teach a complete method of massage and systematic passive movements in the treatment of recent fractures.

As his experience has grown wider he has seen better and better results from the treatment. In his service at present in the Hôtel Dieu, as well as in the Hospital Beaujon, there are always a large number of fractures under treatment, and this method is always employed with results that leave nothing to be desired. Large numbers of practitioners in France and in foreign countries have accepted the new method favorably, although, of course, as might be expected, the great majority of surgeons have strenuously opposed it, since it was completely contradictory to the hitherto formulated principles of treatment of fractures. One of the surgeons who has best grasped the extreme importance of this method is Dr. Caldwell, an American, who has recently published a paper embodying certain practical points which he gathered in the author's service in Paris.

Moderate movement favors the repair of fragments of a bone. When movement is permitted the callus will be greater in quantity, will be more solid, and will be more rapidly thrown out. Any large amount of movement would inhibit the process of repair, or at least seriously interfere with it. Moderate movement preserves the vitality of the limb and the suppleness of the articulations, the muscles, and the tendons. It entirely prevents the occurrence of any muscular atrophy. In every case, therefore, in which moderate movement does not threaten to cause the occurrence of deformity the limb should not be immobilized. On the contrary, an attempt should be made to keep up passively if not actively the movements that are necessary to the vitality of the parts.

In addition to this passive movement, massage, which especially favors the repair of traumatic lesions of muscles, tendons, ligaments, and articulations, may always be applied in practice on the single condition that the parts involved in the fracture do not thus become the subject of untimely interference with repair. We may apply massage to fractures immediately after an accident on condition that this massage is of the special kind that can be performed while the fractured member is properly supported. Massage, if undertaken in the ordinary manner, or if administered too energetically, would certainly result lamentably. The massage for a fracture ought to be applied to all parts of the limb, along the muscles, over the ligaments, and upon the hæmorrhagic effusions, but never just over the site of the fracture nor directly upon the fractured ends of the bones. The massage ought to consist of gentle, repeated pressure, always in the same direction from the periphery of the limb toward the trunk. It should be sufficiently prolonged. The length of the time spent at massage will depend somewhat upon the character of the lesion and the sensitiveness of the patient, but at least from a quarter of an hour to twenty minutes once a day should be devoted to it.

The massage should never give pain. It should always be followed by an attempt at passive movements of the joints of the limb, which procedure must also be accomplished without pain.

The first effect of massage should always be to cause anæsthesia of the part, so that all pain that has existed previously should disappear after its employment. The massage causes rapid resorption of all exudations and especially of hæmorrhagic effusions. It preserves the suppleness of the part and prevents muscular atrophy. It exercises without doubt a most favorable and deep-seated action upon the nutrition of the limb, preserves its vitality, and keeps its functions in readiness for service instead of permitting them to degenerate by disuse.

When a member has been massaged and passive movement has been practised for the treatment of a fracture, the repair of the break is much more rapid than if apparatus for absolute immobilization were used. The deformity is much less marked because from the very beginning the muscular contraction, which is so powerful an agent in the production of these deformities, has been made to disappear. Finally, the member which has always remained supple, which has suffered no interference with its articulations, and no atrophy of its muscles, is not only more quickly but more completely cured by the treatment. On the other hand, after the application of apparatus, especially of irremovable apparatus, a long period must elapse in order to complete the cure, and a second treatment by passive movement must be undertaken to overcome the consolidating action which the apparatus has produced.

These principles of treatment, the author says, should be applied to all fractures. There is only one contraindication. If deformity threatens to result, that and that only should prevent the surgeon from using this method or hamper him in its application. We can treat absolutely without any apparatus by massage and mobilization alone the large majority of the fractures of the wrists, of the radius, and Colles's fractures. The larger number of fractures of the clavicle are amenable to the same method. In four years at the Hospital Beaujon the author has had in his service more than sixty cases of fractures of the clavicle. He has treated all of them without apparatus, using only a simple sling, and not once has he had occasion to apply any other form of treatment. All the fractures of the upper extremity of the humerus as far down as the insertion of the deltoid may be treated in this way. All the fractures of the lower extremity of the humerus, all the fractures of the elbow, including those of the olecranon, most of the fractures of the fibula, a large number of the fractures of both malleoli, many of the fractures of the knee, and all of the fractures of the scapula are best treated in this way.

Besides these, many of the fractures which can not be treated with absolutely no immobilization yield better results when treated by a mixed method. The apparatus should be used after a preliminary massage and removed from time to time in order to permit of further massage. Even in fractures of the femur and of the humerus one can apply this mixed method in a large number of cases. By this means we can lessen and in a large measure do away with the inconveniences connected with the use of fixed apparatus, some form of which may be indispensable. In a number of cases the author has even practised massage in compound fractures as soon as cicatrization of the wound was complete.

The secondary treatment of members in which luxations have taken place should also consist of massage and passive movements, which have not only proved of invaluable service in such cases, but have never in the author's experience exposed the patient in the slightest degree to the danger of a recurrence of the dislocation.

Actinomycosis of the Liver.—M. Letten (*Gazette hebdomadaire de médecine et de chirurgie*, January 25th) recently attended in his hospital service a woman, thirty-five years of age, with very considerable ascites, and in whom there existed in the region of the umbilicus a small fistula whence flowed a sanguinolent discharge containing actinomyces. The patient died the day after admission, and on autopsy it was found that the fistula communicated with an extensive abscess situated in the right lobe of the liver. There were in the viscus also many other small abscesses, all containing actinomyces. A careful examination of the pharynx, tongue, jaw, etc., failed to disclose any point of entry for the parasite.

Remote Results of Electrolysis of the Urethra.—Desnos (*Gazette hebdomadaire de médecine et de chirurgie*, September 28, 1899) says that two methods of electrolysis have been employed in stricture of the urethra; in one, the rapid method, currents of more or less great intensity are used, and it is sought to resolve the thickening in one *séance* of several minutes; in the other method, on the other hand, the intensity of the current is very feeble; but the *séances* are repeated at intervals and the duration of the treatment is protracted. The rapid method induces cure in a certain class of strictures; but whenever there is very marked induration, a very extensive or multiple stricture, it is necessary, in order to overcome it, to employ currents of such intensity that they threaten the integrity of the urethra. The slow method is that of Newman; its results last for a long time. After ten or twelve years, M. Desnos has found urethras electrolyzed by this method free from any return of the stricture, and covered by a mucous membrane that preserved its normal aspect. The long duration of the treatment seems to be the principal obstacle to its more extended employment.

Inflation of the Middle Ear by a New Method.—Dr. Lucien Lofton (*North Carolina Medical Journal*, October 20, 1899) records a case of very marked improvement of chronic middle-ear disease, one out of fifteen cases successfully treated by him by a method of inflation which he first described in October, 1896, but which does not appear to have met with the attention it would seem to deserve. The following is a description of Dr. Lofton's method, quoted from his original paper, the reference to which is not, however, given:

The instrument comprises one of the newer forms of stethoscopes with the chest receiver detached. In its stead a hard-rubber flattened mouth piece is substituted, being placed gently, but firmly, between the lips of the patient, while the ear apparatus is adjusted to his ears. The middle ear is then inflated by simple lateral suction rapidly executed by the patient. The force thus generated from without inward, and *vice versa*, causes the adherent drum to vibrate or to swing to and fro. On a normal drum the force is so concentrated as to cause great discomfort. Should it be desired to inflate one ear, this may be accomplished by squeezing one or the other rubber tube. This manner of inflating the middle ear is considerably more reliable than is Politzerization, Valsalva's method, the external ear pump, or the catheterization process.

The method advised leaves no way for the air to escape save through the course intended. The ear pieces are supposed to fit snugly and firmly, and the suction which takes place is equivalent to several ounces of pressure. If so desired by the specialist, patients may use this instrument alone. Probably the most reliable stethoscopic attachment is the one suggested by Lewis Snofton.

The Prevention of Tuberculosis.—Dr. S. Case Jones (*Journal of Tuberculosis*, January) concludes a paper as follows: For the proper restriction of bovine tuberculosis in a State or province we would recommend legislation under the following general divisions:

1. Provide means by proper laws of giving State or provincial boards of health the authority to investigate concerning the existence and cause of tuberculosis in cattle, and the danger to the public health therefrom, giving such boards the power to apply the tuberculin test to any animals in the State for the purpose of diagnosis, or of quarantining all tuberculous cattle, or causing their destruction.

2. Extend the powers of the State Board of Health to local boards of health, instructing them to pass local ordinances requiring that any milk or dairy products sold or offered for sale in any municipality shall be from herds that have been examined or tuberculin tested by a competent veterinary having authority from the State Board of Health, who shall certify that the herd supplying the milk or dairy product is free from all disease.

3. Make a law to prevent the importation into the State of any cattle for dairy or breeding purposes until they have passed the tuberculin test.

4. Require by law the slaughter of all fat or beef cattle which are sold or used for food at a public abattoir, and under competent State inspection, both ante and post mortem, putting a tag on each carcass or quarter of carcass, setting forth the date of inspection and slaughter, the quality of meat, and the name and number of the licensed inspector. The said abattoir inspectors to be appointed and licensed by the State Board of Health.

Poisoning by Potatoes.—Pfuhl (*Deutsche medicinische Wochenschrift*, November 16, 1899; *Medical Review of Reviews*, December, 1899) reports the case of fifty-six German soldiers who were stricken together with symptoms of acute gastro-enteritis. The sickness began with chills, followed by fever, headache, colic, vomiting, and diarrhœa. A number of the men collapsed, and all were much prostrated. More or less jaundice developed. None of the cases ended fatally, nor were there any relapses or sequelæ. Investigation showed that the soldiers had all eaten of sprouting potatoes, and it was supposed that they had been poisoned with the alkaloid solanine, although the troops had eaten sprouting potatoes before, but without bad results. The potatoes were always carefully peeled and the sprouts largely cut out. They were then cut up and allowed to stand all night in water. In the morning they were rinsed off in running water and cooked for twenty-five minutes.

Several similar instances of potato (or solanine) poisoning have been known in Germany, and it has long been asserted that potato eyes or sprouts contain solanine, an irritant and narcotic poison.

The cases reported on the Continent show that solanine is present in the potato to a slight but varying extent, and that in all probability its formation is dependent in some way upon the process of germination. While ordinarily the amount is too small to be poisonous, it may, under unknown conditions, be markedly increased. Pfuhl thinks mild cases of indigestion, diarrhœa, etc., might in some cases be accounted for by the previous ingestion of potatoes having an increased proportion of solanine.

Black-water Fever.—Strachan (*Journal of Tropical Medicine*, February), writing from Lagos, West Coast of Africa, says:

"Numerous papers have appeared on hæmoglobinuria or black-water fever, but, unfortunately, none of them have cleared up the cause of the disease nor suggested the method whereby it gains entrance into the human system. Its clinical history is well known, but opinion is divided as to whether it should be regarded as a manifestation of the malarial poison or not, but there is a minority, influential and I think increasing, which regards it as a disease distinct from malaria. Until careful and exhaustive study of the blood has been made by skilled observers, this question will, I fear, remain unsettled. In the meantime there are certain facts in connection with the study of the disease which force themselves on the attention: 1. In the malarious countries where black-water fever is found, we know that malaria prevails at certain periods of the year, while at others it is comparatively absent. This is certainly not the case with black-water fever, at least in this part of Africa. I have endeavored in the past two years to get records of the cases, but it has been difficult to do so, and last year's record is not complete. However, I have this year, with the cooperation of some of the government medical officers, been able to obtain a record of most, if not all, the cases that have occurred in Lagos Colony. The result is to show that cases of black-water fever occur all through the year, and quite independently of the presence or absence of malaria. 2. That quinine is not an essential in the treatment of the disease, and that the greater number of cases have been treated successfully without it, the salicylates being generally employed instead. 3. That it appears to be a self-limited disease, which is dangerous to life from the terrible destruction of blood-corpuscles which occurs while it runs its course. 4. That it may attack persons who never take quinine, and that habitual quinine takers may escape it. 5. On an investigation of the cases occurring here it is curious to note that the greater number of those attacked are Germans and Roman Catholic priests and nuns. Beyond the fact that both these classes of people do very hard work, I am unable to find that any conditions peculiar to both and different from those obtaining among the rest of the European community exist. (The theory as to infection by some, at present unknown, living organism by means of tick bites should be borne in mind, and investigation in that direction made.) 6. Persons already anæmic certainly appear, if attacked, to be less likely to recover, but in the twenty cases which have been noticed here in the past two years only two have died. 7. Repeated attacks are by no means uncommon; it would almost seem that one attack predisposes to another; but more evidence on this point is wanting."

The Hydriatic Treatment of Fevers in Childhood.—Dr. Simon Baruch (*Archives of Pædiatrics*, January), in a paper read before the November meeting of the Section on Pædiatrics, New York Academy of Medicine, held that cold water should not be classified as an antipyretic, as this had led to many erroneous views regarding its therapeutic uses. He was of the opinion that judicious hydriatic treatment could be advantageously employed as a substitute for most of the antipyretic drugs. As a general rule, a child could be completely immersed for ten minutes in a bath at a temperature of 90° F., the head and face being bathed twice during this time with water at 60°. When removed from the bath the child should be wrapped in a blanket. The bath should be repeated every three hours, reducing its temperature five degrees each time until 75° or 70° had been reached, and then continuing the bath at this temperature as long as the rectal temperature of the patient kept at 103° or above. Ordinarily, under such treatment the child would fall asleep, and give every indication of improvement. In many infectious diseases there was an atonic condition of the cutaneous vessels which contributed to the tendency to cardiac weakness; hence, the great value of the hydriatic treatment, which acted directly and powerfully upon the peripheral vessels. When the toxic elements in the blood disturbed the vasomotor centres, the pulse became soft, compressible, and even dicrotic, and the heart was called upon to compensate for this inadequate circulation by increasing its beat. Eventually the heart became exhausted. The superiority of the hydriatic treatment lay in the fact that this ever-present danger of heart failure could be best combated in this way. It should be remembered that the cutaneous vessels were capable of holding two thirds of the entire blood supply of the body. The resistance to the heart offered by the vasomotor system in its normal condition was comparable to the friction of the driving wheels of a locomotive upon the rails—in both this resistance acted as a most important regulating agent. In the early stages of all febrile diseases of childhood the full bath described was indicated, and yet simple ablutions often sufficed to secure the desired effect. It was a serious and too frequent error to fear the shock to the system of the application to the body surface of water at a temperature much below that of the body. Experience had shown that the shock was just what was wanted to arouse a fainting woman. The common practice of passing a damp sponge over the heated skin of a fever patient was of doubtful value. Gentle mechanical irritation, as with a coarse cloth, while cold water was allowed to flow over the body, would be found far more efficient in most cases of fever.

In the many fevers of childhood he was accustomed to direct that the child be sponged off hourly with water, beginning at a temperature of 90°, and reducing it one degree each time until 60° had been reached. The effect of such treatment could be maintained by means of the "abdominal compress," which consisted of three folds of toweling wrung out of water at a temperature of 70°, applied snugly, and covered with thin flannel. This should be renewed hourly. In pneumonia he had found the "chest compress" at 60°, renewed every hour or two, a very valuable adjuvant. It aroused the heart, causing the cyanosis to disappear, temporarily at least. When the first effect of the bath had passed off the application acted like a poultice, and its sedative effect would be found very grateful. Parents often objected to such hydriatic treatment, but if the applications were begun at 100° and gradually reduced to 60°, the steady improvement in the child would ordinarily overcome all objections on the part of the family. Cold full baths were not well borne in scarlet fever.

Dr. Baruch said that if the temperature was very high and the patient very much depressed, the linen compress should not be wrung out as dry as where there was less fever. Linen should always be used, not cotton, the latter not being sufficiently absorbent. Having wrung out the linen compress, it should be laid out upon a piece of flannel of similar shape—*i. e.*, with places cut out to fit under the arms. While oiled silk protected the bedclothing it interfered with the proper action of the compress. The compress must be very snugly applied so that no air circulated between it and the skin. This guarded against prolonged chilling of the patient.

The Sheet Bath.—Where objection was made to the full bath, Dr. Baruch said he was accustomed to make use of the "sheet bath," beginning with a temperature of 100° F. for children, or 90° for adults. An old linen sheet or tablecloth should be used, and it should be wrung out very lightly. The patient having been wrapped in this, water at a temperature of about ten degrees lower should be poured successively upon different parts of the body, and each part rubbed with the hands until it no longer warmed up. By such a bath it was possible to obtain very nearly the same effect as from a full Brand bath.

Wet Pack.—The "wet pack" was a more soothing application. A sheet was wrung out of water at a temperature of about 75° or 80° F., and the patient wrapped up in it. Over this a blanket was snugly applied. After a short time the effect of such an application was like that of a poultice. The patient usually remained in it for about ten minutes. After this the patient should be given an ablution—rubbing with the hand moistened with water at 60° or 70°, and then finally dried.

Irritant Action of Balsam of Peru.—M. Hallopeau and M. Bacaresse (*Gazette hebdomadaire de médecine et de chirurgie*, December 21, 1899) record an instance in which an ointment of balsam of Peru, applied to a case of dermatitis due to scabies, as less irritating than sulphur, had to be abandoned within four days, owing to the formation of pustules which, although at first small and few in number, ultimately became phlyctenular. As the same material had been used at the Saint Lazare with success, it seems impossible to ascribe the results to alteration therein. The authors suggest idiosyncrasy, and conclude that balsam of Peru is contraindicated equally with sulphur in cases accompanied by dermatitis.

Letters to the Editor.

THE DETERMINATION OF SEX.

114 WEST THIRTEENTH STREET, NEW YORK,
March 12, 1900.

To the Editor of the New York Medical Journal:

SIR: In your issue of March 10th you call my attention to the letters of Dr. Herman and Dr. Holden. You were right in thinking the point made by Dr. Herman had *not* escaped my consideration. My object in writing my paper was to induce cooperation in securing results, and not to stir up controversy in the profession. I tried to be concise and avoid all useless details. In reply to Dr. Herman, my rule is *not* disproved by the birth of *more* males than females, inasmuch as many, many women (who are *not* consulted as to their special wishes in the matter) practise a little stratagem—*i. e.*, they hope to defer maternity and trust that *ten* days may make them immune or put off the conditions they are not willing to assume. By a little tact they *defer* the risk. Maternity resulting, in spite of the precautions, males are the result in a very large percentage of such births. Again, the old adage has it that "exceptions prove the rule." The point I made was that the one with the higher rate of vibrations would rule the sex, regardless of any other factor, as he or she would be the more positive. I am glad to learn of M. Thury's rule formulated for stock raisers, as it is a very telling corroboration of the *theory* I advanced on this important subject. Dr. Napheys's article quoted could not have had a wide circulation, else I should have seen some reference to it. Or else it did not strike the medical fraternity as the analogy did in my case.

I had no *human* precedent to follow. One of our most noted professors in the medical profession (and in New York, too) once told his students "never to despise a truth, no matter how humble its source." Hence my observation and following of a truth, of humble origin certainly. Nevertheless, I have had the satisfaction of *verifying* the theory *many* times in the twenty-four years I have been practising medicine. In those years I have tried to persuade my patients to learn to control the sexual functions by reason rather than instinct. I certainly have succeeded beyond my most sanguine expectations, as many to-day are in the enjoyment of good health that once were almost physical wrecks. It is gratifying, too, to learn that the Swiss stock raiser certifies to the correctness of the *theory* in twenty-nine consecutive cases. The only originality I claim is for applying the rule used in the animal kingdom to the animal side of the human being, and for drawing attention to the fact that animals have their times and seasons, ruled by instinct, while man (God's highest creation) allows his *instinct* to dominate his reason. As progress is the order of the day, I am working to reverse this state of affairs. I advocate knowledge for all who are liable to suffer through ignorance, and believe this to be the only way to lift the sexual question to a higher plane. It certainly must appeal to all thinking men and women that all manifestations of power and force in the universe are due to fixed laws.

That we have been slow to trace out the law in regard to the determination of sex has been our misfortune, possibly not our fault. Under the old Jewish law women were commanded to go apart after the menstrual epoch seven days (if my memory serves me correctly) for cleansing purposes. Human nature is the same through all ages, and no doubt those Jewish women were as tactful as the women of to-day, and the seven days were lengthened into ten—on one pretext or another; so that pregnancy occurring then would produce males, as theorized. As my purpose in writing on the subject is eminently a humane one, and facts being stubborn things, I can only reiterate: "Try these rules in your own practice and prove them."

J. Griffith-Davis, M. D.

Vicksburg, Miss., *March 14, 1900.*

To the Editor of the New York Medical Journal:

Sir: Possibly a study of the customs of the Jews, under the active administration of the Mosaic law, may help in the study of determination of sex at will as expounded by Dr. J. G. Davis. We are told that the Jewish women were "unclean" for seven days after the menstrual period. The eighth day—the "pivotal" day —was therefore the first day on which the "guest" could be "invited." If we consider that we are dealing with a semi-barbaric people, a people of robust physique, a people to whom such "guests" came frequently, we can easily imagine that the "invitation" was given at the earliest opportunity, and that it was an *urgent* "invitation." If this were followed up we should, according to Dr. Davis, find a race of Amazons and "chappies."

The "curious phenomenon" of males of a decidedly feminine type and females decidedly masculine would certainly have been of sufficient interest to be put on record. We should read of an army of women subduing the "Promised Land," or the army of effeminate men would have been wiped out of existence.

This is only a probability, but I think equally probable as that a *host* and *hostess* can have a "tomboy" for a "guest" by issuing an "invitation" on a "pivotal" day.

E. F. Howard, M. D.

Book Notices.

Text-book of the Embryology of Invertebrates. By Dr. E. Korschelt, Professor of Zoology and Comparative Anatomy in the University of Marburg, and Dr. K. Heider, Professor of Zoology in the University of Berlin. Volume I. Porifera, Cnidaria, Ctenophora, Vermes, Enteropneusta, Echinodermata. Translated from the German by Edward L. Mark, Ph. D., Hersey Professor of Anatomy in Harvard University, and W. McM. Woodworth, Ph. D., Instructor in Microscopical Anatomy in Harvard University. Pp. xvi–484. Volume II. Phoronidea, Bryozoa, Ectoprocta, Brachiopoda, Entoprocta, Crustacea, Palæostraca. Pp. xv–375. Volume III. Arachnida, Pentastomidæ, Pantipoda, Tardigrada, Onychophora, Myriopoda, Insecta. Pp. xii–441. Translated from the German by Matilda Bernard. Revised and Edited with Additional Notes by Martin F. Woodward, Demonstrator of Zoology, Royal College of Science, London. London: Swan, Sonnenschein, & Co., Ltd. New York: The Macmillan Company, 1899. [Price, each volume respectively, $4, $3, and $3.25.]

The preparation of an English edition of this well-known text-book was begun by Professor Mark and Professor Woodworth in 1895. After finishing part i they were unfortunately obliged to relinquish the work, which has, however, been completed by Miss Bernard and Dr. Woodward. Part i appears as volume i of the English edition, but parts ii and iii of the German work have been subdivided and slightly rearranged to appear in three volumes, ii, iii, and iv, of more convenient size.

The translation of the first part, appearing five years later than the original, was of course enriched by numerous additions from both translators and authors. The further delay in the appearance of the remainder of the work has again been taken advantage of in an earnest endeavor to include references to all important work of the intervening time.

The rendering of the German into English has been done faultlessly for the most part, German idioms being completely lost sight of in a clear and uniformly pleasing style. The much-translated word *Anlage* has, however, suffered in the usual way. Professor Mark and Professor Woodworth have used "fundament" throughout, while the later translators, believing that its meaning is by no means constant, have rendered it in a variety of ways to suit the context. The *Anlage* difficulty will probably end in the word being left untranslated.

Finally, not the least striking feature of the volumes is the presswork. The text is free from any evidence of carelessness, and the figures are particularly clean-cut and well reproduced.

Mental Affections. An Introduction to the Study of Insanity. By John Macpherson, M. D., F. R. C. P. E. New York: The Macmillan Company, 1899. Pp. x–3 to 380. [Price, $4.]

This book is arranged as follows:

Part I. Introductory, including chapters on morbid heredity and the evolution and determining causes of insanity.

Part II. Physiological and pathological, devoted to a *résumé* of the more important physiological and histological aspects of the nervous system and to considerations on psychology and pathological symptomatology.

Part III. Clinical symptomatology. This part is arranged as follows: Idiopathic mental affections, including mania, melancholia, circular insanity, and paranoia; confusional insanity. Toxic insanity, under which are described the forms appearing after physical exhaustion and shock, from microbic toxines and self-intoxication, and from voluntary intoxications; general paresis, cretinism, and myxœdema. To the insanity of the degenerate are given separate chapters in which are treated imbecility, idiocy, premature dementia, moral insanity, imperative concepts and perversions, and *folie-à-deux.* The two final descriptive chapters are given up to insanity connected with the neuroses and to insanity caused by brain disease.

The book is written on much broader lines than most manuals on mental diseases of its size, and is fully abreast of modern psychiatric thought. It gives clear and correct descriptions of the various types of mental alienation and is consequently a sensible clinical handbook. But its distinguishing characteristic and greatest merit consist in its philosophical tone. Alienists are beginning to see that the older and more elaborate classifications of mental disease are unscientific and unnecessary; that, instead of there being a great number of these diseases, the distinct types are really few, and that the countless clinical variations are superficial and not fundamental differences; that a predisposed brain is the basis of insanity, and that the manner of its expression will vary with the individual and with environment. We are inclined to believe that the practitioner will profit much more from a book which makes these principles plain than from one which is chiefly taken up with clinical delineations. And for this reason we hope Dr. Macpherson's production will find many readers.

Nervous and Mental Diseases. A Manual for Students and Practitioners. By CHARLES S. POTTS, M. D., Instructor in Nervous Diseases, University of Pennsylvania, etc. Series edited by BERN B. GALLAUDET, M. D., Demonstrator of Anatomy and Instructor in Surgery, College of Physicians and Surgeons, Columbia University, New York. Illustrated with Eighty-eight Engravings. Philadelphia and New York: Lea Brothers & Co., 1900. Pp. 3 to 455. [Price, $1.75.]

THIS little volume performs what it promises. It gives a brief and correct outline of diseases affecting the mind and nervous system. From a purely literary point of view, it is more difficult to cover a wide field in a small book than in a larger one. In the present instance the author has been particularly successful in the brevity, accuracy, and clearness of his presentation.

The volume will undoubtedly prove useful to those for whom it is intended.

Nervenleiden und Erziehung. Von Prof. H. OPPENHEIM, Berlin. Vortrag, gehalten im physiologischen Verein zu Berlin. Berlin: S. Karger, 1899. Pp. 56.

IN this lecture, delivered before the Berlin Psychological Society in July, 1899, Professor Oppenheim calls attention to the various pedagogical and hygienic means by which children with defective nervous heredity can best be made fit for the struggle for existence.

Thyreoid Medication. By A. FLOURENS. With Sixteen Reproductions from Photographs. Bordeaux: G. Gounouilhou, 1900. Pp. 32.

IN this brochure are gathered the histories of imperfectly observed cases of myxœdema, exophthalmic goître, cretinism, etc. The reports are similar to those published generally two or three years ago. But why the writer thought them worthy of publication in pamphlet form it is difficult to see.

Die Orthopädie im Dienste der Nervenheilkunde. Von Prof. Dr. ALBERT HOFFA, in Würzburg. Mit 80 Abbildungen im Text. Jena: Gustav Fischer, 1900. Pp. 5 to 159.

IN this volume are given the results of treatment by operative, mechanical, and gymnastic means of two hundred and sixty-four cases of nervous disease, notable among which were cases of writer's cramp, sciatica, facial paralysis, poliomyelitis, and cerebral palsies.

Of special interest are the chapters devoted to tendon transplantation for the relief of contractures and for the restoration of functions in poliomyelitis and in the infantile cerebral palsies. This procedure has already gained an important place in orthopædic surgery, and its possibilities and indications are entitled to a wider recognition than they have as yet received. Dr. Hoffa's book is full of useful suggestions both to neurologists and to orthopædic surgeons. It seems, however, as though the author was somewhat over-enthusiastic as to some of the results he professes to have obtained.

Miscellany.

The Association of American Physicians.—The fifteenth annual meeting will be held in Washington on May 1st, 2d, and 3d, under the presidency of Dr. Edward G. Janeway, of New York, besides whose address the preliminary programme includes the following: A Discussion on Endocarditis and its Relation to Other Diseases—Referee, Dr. William Osler, of Baltimore; Report of Cases of Pernicious Anæmia, with a Special Reference to the Blood Findings, by Dr. Frank Billings, of Chicago; Some Conclusions arrived at after a Study of One Hundred and Four Cases of Pernicious Anæmia, by Dr. Richard C. Cabot, of Boston; Clinical Notes on Cases of Pernicious Anæmia, by Dr. Frederick P. Henry, of Philadelphia; A Case of Filaria with Specimens of the Adult Parasite, by Dr. W. T. Councilman, of Boston; Cases of Diarrhœa Associated with the Presence of *Strongylus intestinalis* in the Stools, by Dr. W. S. Thayer, of Baltimore; Actinomycosis, by Dr. J. H. Wright, of Boston; Proliferation and Phagocytosis, by Dr. F. B. Mallory, of Boston; The Relative Infrequency of Acute Transmissible Diseases during the First Year of Childhood, with a Discussion of the Probable Reasons for the Same, by Dr. A. C. Abbott, of Philadelphia; Recurrent Vomiting in Children, by Dr. J. P. C. Griffith, of Philadelphia; Would it not be a Gain to Both Pathology and Practice if a Direct Interaction between the Morbific Agent (Noxa) and the Reparative Effort were Recognized, and the Conception of an Intermediate, So-called Inflammatory Process Abandoned? by Dr. Andrew H. Smith, of New York; Clinical Types of Uric-acid Diathesis—Treatment, by Dr. J. N. Danforth, of Chicago; Communication on the Relation of Uric-acid Secretion to Epileptic Attacks, by Dr. James J. Putnam and Dr. F. Pfaff, of Boston; An Experimental and Clinical Study of Acid Intoxications, by Dr. C. A. Herter, of New York; Report of a Case of Acute Ascending Paralysis, showing Hæmatoporphyrinuria, by Dr. Charles G. Stockton, of Buffalo; Notes on Diabetes. 1. On Casts in the Urine during Diabetic Coma. 2. On the Occasional Low Specific Gravity of Diabetic Saccharine Urine, by Dr. James B. Herrick, of Chicago; The Attitude of the Physician and Surgeon to Appendicular Symptoms complicating Typhoid Fever, by Dr. H. A. Hare, of Philadelphia; Observations on Appendicitis, by Dr. Ira Van Gieson, of New York; Subpectoral Abscess, by Dr. J. H. Musser, of Philadelphia; Aneurysm of the Aorta with Rupture into the Superior Vena Cava, recognized during Life, by Dr. Alfred Stengel, of Philadelphia; The Circular Fibres of the Heart (Mitral Sphincter) as a Factor in Functional Disturbances of the Heart with Mitral Insufficiency, by Dr. Morton Prince, of Boston; Minor Forms of Cardiac Dilatation, by Dr. Beverley Robinson, of New York; Presentation of a Case of Addison's Disease under

Treatment with Suprarenal Extract, by Dr. W. W. Johnston, of Washington; Graves's Disease without Exophthalmic Goître, by Dr. W. H. Thomson, of New York; Some Observations on Human Temperature in Disease, by Dr. Norman Bridge, of Los Angeles; Sanitarium Treatment of Pulmonary Tuberculosis, and its Results, by Dr. E. L. Trudeau, of Saranac Lake; and The Elimination of Deleterious Substances from Antitoxic Sera, by Dr. William H. Park, of New York. Papers will also be read by Dr. W. H. Welch, Dr. I. Adler, Dr. I. B. Ward, Dr. C. Withington, Dr. F. P. Kinnicutt, and Dr. J. S. Thacher, the titles of which will be announced in the final programme. Any other members desiring to contribute papers are requested to send the titles of them to the president, Dr. E. G. Janeway, 36 West Fortieth Street, New York. It is desired that a number of papers should be presented to be read by title and to appear in the transactions in order that the value of the volumes of the transactions may be increased.

The American Proctological Society will hold its second annual meeting in Washington on May 2d and 3d, under the presidency of Dr. Joseph M. Mathews, of Louisville.

A Proposed X-ray Society.—We learn that on Monday, March 26th, there will be a meeting in St. Louis, in rooms 31–33 of the Insurance Exchange Building, to organize an American society for promoting the study and surgical application of the Röntgen ray.

Medical Missions.—This is the subject assigned to one of the delegates to the Ecumenical Conference, to be held in New York from April 21st to May 1st, namely, Dr. Edwin Sargood Fry, M. B. C. M., of Edinburgh, Scotland.

In many centres in India a general practitioner is available, but there are large districts where no such aid is at hand. Medical missions have succeeded in gaining entrance for missions where other means have failed. Considerable advance was made in medical missions in 1841 by the formation of the Edinburgh Association for Sending Medical Aid to Foreign Countries, which two years later assumed its well-known title of the Edinburgh Medical Missionary Society, of which Dr. Fry is now the secretary. The society provides its students of both sexes, who are drawn from various denominations, both at home and abroad, with full medical and surgical education at the University of Edinburgh or the Extramural School of Medicine, together with a thorough practical training in the various departments of missionary work. Its present home is the Livingstone Memorial Medical Missionary Training Institute. Dr. Wong Fan, of Canton, under this society's auspices, was the first Chinese graduate of a European university. For direct missionary work abroad, the society has maintained for many years an important training institute at Agra, India, under one of its own students, the Rev. Dr. Valentine, and since 1861 and 1884 similar institutions at Nazareth and Damascus. The Agra institution trains Christian native students to become medical evangelists to their own country. The principal of the institution, the Rev. Colin S. Valentine, LL. D., F. R. S. C. E., began his successful career in connection with the United Presbyterian Mission in 1861. It was through his influence that the native state of Jeypoer was opened to Christianity. The Agra institution was opened in 1884 and affiliated with the Edinburgh Medical Missionary Society in 1885, and it has since been supported by the society. The latest statistics show that there are 197 men and 54 women holding British medical diplomas in the service of 39 British foreign missionary societies, making a total of 251 British medical missionaries. Out of the total, 87 are at work in India. The need of medical missions in India is emphasized by the knowledge that it contains nearly half a million of lepers. The proportion of lepers brought into leper asylums who become Christians is said to be large, and the indirect influence on the surrounding heathen is considerable, for such work is an object lesson which they can not explain away. Medical aid is one of the very few forms of help which the Hindu is at liberty to receive.

An Episcopal delegate, Dr. Charles F. Harford-Battersby, of Forest Gate, Essex, England, will also take part in presenting the subject of medical missions. Dr. Harford-Battersby is the youngest son of the late Canon Harford-Battersby. In 1890 he sailed for West Africa as a medical missionary on the upper Niger, of the Church Missionary Society. He was a member of the Sudan Mission party under the leadership of the Rev. J. A. Robinson and Mr. Graham Wilmot Brooke. A decided impression was made on the Mohammedan community, and Dr. Harford-Battersby's incipient medical mission was a great help. After three visits to the Niger he was obliged to give up the work owing to repeated severe attacks of fever. On returning home, in 1892, he took counsel with other medical men as to the necessity for some training in the elements of medicine and surgery for missionaries. This resulted in the formation, in 1893, of Livingstone College, of which Dr. Harford-Battersby became the first principal. He was married in April, 1893, to Miss Clapton, who has also been a missionary on the Niger. While acting as principal of Livingstone College he had many opportunities of helping on the missionary cause in other ways. He became a member of the Committee of the Church Missionary Society, on which he has served ever since, and is now chairman of the medical board of the same society. Since the appointment of Bishop Tugwell to the Diocese of Western Equatorial Africa he has acted as the bishop's secretary in England. Within the last few years he has been the honorary secretary of the Native Races and the Liquor Traffic United Committee, of which the late Duke of Westminster was the president.

Livingstone College provides a two years' course, which is laid out for the training of medical missionaries and has helped in the preparation of seventy men connected with various societies, but it marks the distinction between its students and regular medical missionaries. Dr. Harford-Battersby officially represents Livingstone College and the Native Races and the Liquor Traffic United Committee, but the paper which he has been asked to read at the conference will deal chiefly with the medical mission work of the Church Missionary Society.

The Late Dr. John Cargill Shaw.—The New York Neurological Society records with sorrow the death of Dr. John Cargill Shaw, one of its members and its third president, serving for the two years 1878–1880. Dr. Shaw was of English stock and came to this country at the age of seventeen years. Following his graduation from the College of Physicians and Surgeons, in 1874, he served in the Long Island and St. Mary's Hospitals, of Brooklyn, and for four years he filled the office of superintendent of the Flatbush Asylum with signal honor, and here laid the foundation of his profound knowledge of psychiatry. As president of the New York Neurological Society he was an indefatigable worker, and his untiring energy was of great service in the early days of the society. His many professional duties of late years forced upon him a less prominent position in the affairs of this body, but his literary work has made him known at home and abroad.

We desire to record our appreciation of his talents and his never-failing cooperation in the interests of neurology and psychiatry.

[Signed.] SMITH ELY JELLIFFE,
LANDON CARTER GRAY,
B. ONUF.

The Cultivation of Trees in New York.—A dispatch to the *New York Times* announces that the Henry bill for the cultivation of trees in the parks and streets of New York has received the indorsement of the Assembly Cities Committee.

The Tri-State Medical Society of Iowa, Illinois, and Missouri will hold its annual meeting at the Planters' Hotel in St. Louis on Tuesday and Wednesday, April 3d and 4th, under the presidency of Dr. O. Beverly Campbell, of St. Joseph.

Modern Surgery in Warfare.—The *Army and Navy Journal* for February 24th says that a comparison of the medical service now established in European armies, or in the Boer army, or even in the Turkish army, with that of former times shows the progress in the humanizing tendencies of civilization. In the whole of Greek literature, though such a vast proportion of it deals with war, there are not six allusions to the medical arrangements of an army. Homer speaks of doctors, so to call them, tending wounded heroes, but Thucydides does not. In the Middle Ages, doctors "of sorts" accompanied a feudal army, perhaps, for they are mentioned occasionally. Joinville speaks of them once. Duke Leopold, of Austria, broke his thigh badly. The wound began to mortify. Leopold did not think of calling in professional aid. With his own hands he held an axe in position while his chamberlain struck it with a hammer. The duke lived just long enough to note the success of the operation. One can judge from this of the advance we have made in army surgery.

The Method of Sherlock Holmes in Medicine.—The *Medical Bulletin* for February quotes the following from the *British Medical Journal* of unspecified date:

"Dr. G. W. Balfour recently expounded the method of Zadig to the York Medical Society. The method is practically identical with that of 'Sherlock Holmes,' the prototype of whom, it is well known, is a distinguished Edinburgh surgeon. Professor Van Duyse, of Ghent, appears to have found the method useful, and in opening the Ophthalmological Clinic of the University of that city not long ago he gave his hearers some illustrations of its application. A lady came to him complaining of intense pain in one eye, when he at once said to her, 'Madam, you keep birds. Four days ago you cleaned out their cage; since then your eye has been bad.' The patient was astounded at this instantaneous diagnosis, which seemed to her almost miraculous. But the thing was very simple. A husk of grain had become implanted in the cornea; the lady had evidently blown into the seed glass, and a husk thus set floating about had stuck in her eye. The cornea showed a grayish halo at the site of the lesion, and was somewhat puffy at the edge; vascular reaction was beginning to show itself on the neighboring part of the ocular conjunctiva, and clinical experience had taught the observer that four days was about the time necessary to produce this state of things. In another case the patient was a nursemaid, aged from sixteen to seventeen, who came with a little boy, aged from twelve to fourteen months, in her arms. She was suffering from trachoma, which had become acutely inflamed and was suppurating. Dr. Van Duyse at once forbade her carrying the child, and she promised to obey. When she returned two days later, however, the surgeon, on seeing her, frowned, and said in a severe tone: 'In spite of my prohibition you have been carrying the child. I shall be obliged to let your master and mistress know what is the matter with you.' The girl stoutly denied that she had been carrying the child, but Dr. Van Duyse insisted that hardly twenty minutes before she had been carrying it on her right arm, and had handed it over to some one else at the door. The girl, amazed at the almost supernatural insight of the surgeon, confessed her transgression. Here, too, there was nothing more occult than a recent telltale trickle of urine running obliquely from right to left across the girl's apron. The art of observation may be cultivated by attention to such apparent trifles; and, as confidence in the doctor is the most potent of adjuvants, the method of Sherlock Holmes is a powerful aid to success in treatment. But it requires to be cultivated with patience and used with discretion, for an error is apt to cover the seer with ridicule, a misfortune which some of its most distinguished exponents have not always escaped."

The Care of Consumptives.—According to the *Maryland Medical Journal* for March, among the good things said at the last meeting of the Medical Society of the State of New York, one of the best came from Dr. John H. Pryor, of Buffalo, who illuminated the economic aspect of State care of consumptives in these words: "What we ask for is that the consumptive shall be taken care of at the right place and at the right time until he is well, and not at the wrong place and at the wrong time until he is dead." It is merely a question of whether we shall pay early or late. The consumptive is a public charge. We can admit the obligation early and make terms, or we can postpone payment until judgment by default is entered, covering every item of the account.

Persian Superstitions for the Cure of Sterility.—According to the *Revue médicale de Normandie* for January 25th, citing the authority of Gemelli Carreri, a writer of 1719, the Persian women imagine that in order to overcome sterility it is a good thing to pass beneath the dead bodies of criminals suspended from forked gibbets. They believe that the cadaver of a male can even influence them from a distance and render a woman capable of fecundation. Should this singular remedy fail, they look for the water channels that flow from the baths and, selecting a time when large numbers of men are bathing, they traverse the streams several times. This method succeeding no better than the first, they finally swallow a prepuce removed by circumcision, which is held to be a sovereign remedy against barrenness.

Original Communications.

GUNSHOT WOUNDS.

A REPORT OF GUNSHOT CASES IN THE SPANISH-AMERICAN WAR, AND DEDUCTIONS THEREFROM.

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Knowledge of the effect produced in the human body by the missiles used in war is of the greatest importance to the military surgeon: first, that he may approximate the number in a given force liable to be disabled, and so prepare to care for that number; secondly, that, knowing the peculiarities of the wounds, he may know how to treat them properly. The first proposition is one which can be dealt with by a review of statistics; the second, only by combining the recorded experience of surgeons who have seen and treated gunshot wounds received in war. The value of such recorded experience is now particularly great; for, until recently, conclusions as to the effect produced in the tissues of the living human body by the reduced-calibre bullet lately adopted by modern armies were largely speculative. Now that these effects have been observed under the actual conditions of war they should be recorded, together with the course of the cases wounded, and the effect of the treatment employed.

It is to this end that this paper is submitted.

In reviewing my experience with gunshot wounds in the late war I have reached the conclusion that two factors stand out preeminent in modern military surgery. These factors are, first, the application of the principles of aseptic and antiseptic surgery, and, secondly, the effect of the jacketed, small-calibre bullet. Of these, the principles of asepsis and antisepsis are the more important, covering as they do not only wounds made by bullets, but all varieties of wounds found in war. These principles, now so thoroughly established, have revolutionized surgery. They have completely changed all surgical theories held in the years preceding the establishment of Listerism, have opened up before undreamed-of surgical possibilities, and have given results so astounding that familiarity with them can not negative the marvel.

When the results arising from the adoption of these methods in military surgery shall have been collected, I think it will be seen that the principles of asepsis and antisepsis have as completely revolutionized military surgery as they have surgery in general.

The modern compound bullet in some instances produces wounds somewhat different from, and much more humane than, those produced by the old bullet, with its lower velocity and less sectional density.

These wounds are interesting and important to the military surgeon, causing, as they do, new problems in details of treatment, but they in no way affect the great principles of surgery. They are tissue traumatisms to be treated and dealt with as are tissue traumatisms produced in other ways. It may be argued that the perforating or penetrating small-calibre bullet wound is usually aseptic, and therein different from the wound made by the old, larger, lead bullet, and so has changed in many ways those principles of military surgery which relate to bullet wounds. But it is the *recognition* of the asepticity of these wounds, and the resulting conclusion of non-interference or surgical procedure only under aseptic conditions, which are the important factors. Also, the humane effects frequently produced must not from their novelty override the equally important fact that the new bullet sometimes produces wounds as destructive as those made by the old lead projectile.

I venture to say that had modern methods of asepsis and antisepsis been in use during our civil war, the results would have been so different from those actually obtained that it would have been seen that it was the surgical method employed, and not the particular bullet, which most influenced the result. As it happens, the employment of aseptic methods and the use of the new bullet have practically come together, and the bullet has, in part, received a credit which is entirely due to the method. Of course, with the old, slow-moving, large bullet the wounds were somewhat larger, therefore more liable to infection, and the carrying in of clothing more apt to be frequent. But these are really minor circumstances, and would influence the results but little. It was probing with dirty probes and unclean fingers, and unnecessary operative interference under septic conditions and septic dressings, that was responsible for unfavorable results and high mortality.

Believing in the major importance of aseptic and antiseptic methods, I shall first discuss their influence and the results obtained by their employment in gunshot wounds other than those made by the compound bullet, and afterward take up the injuries produced by, and the effect of, that missile in influencing treatment and determining final results.

General Considerations.—During the war two hundred and two gunshot cases, with two hundred and thirty wounds, came under my direct observation and treatment. There were sixteen cases with multiple wounds. Some of these were wounded by one, and others by more than one missile. In the total of two hundred and two cases there was one death (Case XLVI), a mortality of only a trifle over one half of one per cent.

Most of the cases were treated at the United States Army General Hospital at Key West, where I was on duty during the early part of the war, and the wounds had been received from thirty-six hours to five days before they came under my observation. Cases from both the army and the navy were received at the hospital. The non-accidental gunshot cases from the navy were from the engagements at Cardenas and Cienfuegos and from the bombardment of San Juan.

The cases from the army were men of the Fifth Army Corps wounded in the engagements before Santiago up to, and including, July 2d. These were brought to Key West, July 5th, by the United States steamship *Iroquois*.

Table Showing the Character and Location, by Region, of the Gunshot Wounds in 202 Cases treated.

REGION.	GUNSHOT FLESH WOUNDS.					GUNSHOT FRACTURES.				Total number of wounds	Remarks.
	Lacerated.	Contused.	Penetrating.	Perforating.	Total flesh wounds	Penetrating.	Perforating.	Lacerated.	Total gunshot fractures.		
Head	6	..	..	2	8	..	2	..	2	10	One fracture of outer table of skull. One fracture of skull and wound of brain.
Face	2	1	1	1	5	..	3	..	3	8	Three compound fractures.
Neck	1	1	2	10	14	..	..	..	..	14	
Thoracic parietes	3	..	3	10	16	..	..	..	..	14	
Thoracic cavity	..	..	..	1	1	..	..	..	..	1	Involving lung.
Abdominal parietes	4	..	1	..	5	..	..	..	..	5	
Abdominal cavity	..	..	..	1	1	..	..	..	..	1	Involving liver.
Back	3	..	1	4	8	..	..	..	..	8	
Shoulders	4	..	3	16	23	1	1	..	2	25	Two fractures of scapula. One fracture of clavicle.
Arm	6	..	3	13	22	..	2	..	2	24	Two compound fractures of humerus.
Forearm	..	..	1	18	19	1	9	..	10	29	Three compound, both bones; eight of radius; two of ulna.
Elbow	1	..	1	2	4	..	1	1	2	6	Two wounds of the joint capsule.
Hand	6	..	1	8	15	..	16	..	16	31	
Genito-urinary organs	..	..	..	1	1	..	..	..	..	1	Wound of the testicle.
Thigh	3	..	5	20	28	..	2	..	2	30	One resection. One amputation; death.
Leg	3	..	2	9	14	..	1	..	1	15	
Foot	..	..	3	3	6	..	..	..	..	6	
Totals	42	2	27	119	190	2	27	1	40	230	

Character of the Wounds on Arrival at the Hospital.—The condition of the wounds, in general, was remarkably good. They had all been dressed either with the dressing provided in the first-aid packet or with other dressings applied at the field hospitals or on board ship.

Three main facts presented themselves: First, that all perforating and penetrating wounds which had simply been covered with a dressing were practically aseptic; secondly, that all lacerated wounds treated in the same way—though many were suppurating—were in excellent condition; thirdly, that all wounds of whatever character, which had been subjected to operative or any treatment other than the simple application of dressings, were suppurating.

The excellent condition of the undisturbed cases was so noticeable that, in my opinion, it should be laid down as a fixed rule of military surgery that operative interference in the field should be limited to cases of absolute necessity—by absolute necessity meaning where the life of the patient is at stake or transportation without operation would endanger life.

All other cases should be dressed with dry dressings, the wounded part immobilized, and the patients transferred to general hospitals, where they can be operated on under the favorable conditions of modern methods.

In this connection the method adopted in the late war of establishing numerous large general hospitals and equipping them with Röntgen-ray apparatus and appliances for aseptic surgical work, and transporting the wounded to these hospitals as soon as possible after they were wounded, is most commendable. It undoubtedly did much to reduce the mortality of the wounded, and furthered favorable results by placing the patients where they could have the advantage of modern surgical methods under conditions favorable to their best employment.

Character of the Injuries Observed.—The wounds were of all regions of the body (see table), and were made by the following-named missiles:

Small-calibre bullets	198
Fragments of shell	21
Shrapnel bullets	4
Revolver bullets (2 accidental, 1 criminal)	3
Missiles unknown	4
	230

Of these two hundred and thirty wounds, one hundred and sixty-nine were perforating or penetrating small-calibre bullet wounds, and could be considered as characteristic injuries produced by that missile. The other sixty-one wounds had none of the characteristics supposed to be peculiar to that projectile, and had to be treated on general surgical principles.

Thus, over twenty-six per cent. of all the wounds were of a character which negatived any possibility that their course of healing and result could have been affected in any other way than by the original severity of the injury or by the method of treatment employed.

It should be stated that from the number of shell wounds received from the navy, the above percentage of wounds not characteristic of the compound bullet is probably somewhat larger than would ordinarily be seen in land battles. Also, with two exceptions, the twenty-seven lacerated wounds produced by the small-calibre bullet were slight. This is due to the fact that the compound bullet is so small and travels at such high velocity that it has to pass very superficially indeed or it will penetrate or perforate. Consequently, when it does not penetrate, it makes but superficial wounds. Occasionally when penetrating it makes extensive lacerated wounds, probably from striking the body when turning on its long axis as a result of ricochet. An example of such a wound is given in Case XXIX.

Shell wounds, shrapnel-bullet and revolver-bullet wounds are, however, of all degrees of severity, and a favorable course of healing in severe wounds by these missiles is to be mainly ascribed to aseptic or antiseptic methods.

Shell Wounds.—The twenty-one shell wounds were all lacerated and infected. Most of them were superficial and healed rapidly under antiseptic dressings.

Three were of marked severity, and were extremely interesting both in showing the value of modern surgical methods and the wide difference between shell wounds and aseptic wounds made by the compound bullet.

Case I forcibly illustrates how well even severe wounds do when dressed antiseptically and operation deferred until it can be done with proper technic at a general hospital.

Case II gives the course and result in a resection of the shaft of the femur in an infected wound, an operation generally condemned by authorities, but which in this case was not followed by a disastrous result, owing to the constant care and application of antisepsis.

Case III shows the severity of complications likely to follow shell or other infected wounds, and how grave these infected injuries are as compared with aseptic wounds made by the compound bullet.

CASE I. *Lacerated Shell Wound, Right Elbow, with Compound, Comminuted Fracture of Elbow; Amputation; Recovery.*—Private G. M., United States Marine Corps, was wounded at the bombardment of San Juan, Porto Rico, May 12th, by a fragment of shell, which struck the back of the elbow, carrying away most of the soft parts over the back of the joint and fracturing the humerus and ulna.

The wound was carefully cleaned and some loose fragments of bone removed by the ship's surgeon, who then packed the wound with iodoform gauze, after which the patient was transferred to the naval hospital ship *Solace*, on which he was brought to the general hospital, arriving there on the evening of May 20th. On admission, his temperature and pulse were slightly above normal and his general condition good.

On the morning of the 21st, nine days after the receipt of the injury, he was given an anæsthetic and the wound thoroughly examined with a view to conservatism if possible and amputation if necessary. It was found that the soft parts posterior to the joint were completely torn away. Some fragments of bone had been removed and some had been carried away by the shell. Both condyles of the humerus were broken from the shaft, the fracture extending two inches and a half from the lower extremity of the bone, and the ulna was broken into numerous fragments for four inches and a half of its proximal extremity (see Fig. 1). The radius was not broken, but the orbicular ligament was completely torn in two, and the upper end of the bone was lying exposed in the wound, which, though suppurating slightly, was in excellent condition, due to the inhibitory action of the iodoform gauze. The septic condition of the wound, the laceration of the soft parts, together with the extensive shattering of the humerus and ulna, which would have necessitated the removal of three inches of the former and four inches and a half of the latter bone, negatived conservatism and indicated amputation. The wound and surrounding parts were thoroughly cleaned with soap, water, alcohol, peroxide of hydrogen, and sterile salt solution, and a circular amputation was done in the lower third of the arm, the humerus being sawed through three inches and a half above its lower extremity. In spite of the close proximity of the amputation to the suppurating wound, union was by first intention, and the patient was up and walking about the hospital yard eight days after the operation, and on the ninth day he left for the North.

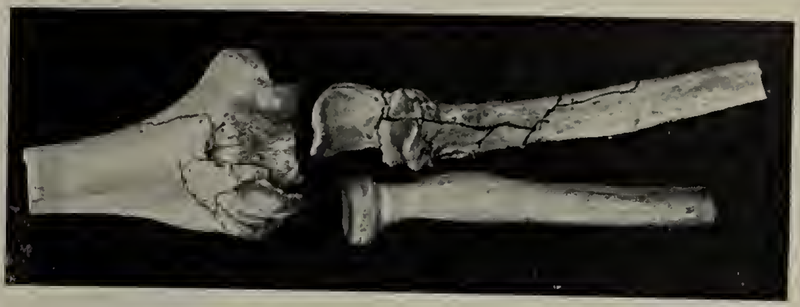

FIG. 1.—Photograph of bones of elbow joint, showing comminution of distal end of humerus and proximal end of ulna by fragment of shell.

CASE II. *Compound, Comminuted Shell Fracture, Left Femur; Resection; Recovery.*—S. F., orderly sergeant, United States Marine Corps, was wounded May 12th at the bombardment of San Juan by a fragment of shell which entered the left thigh four inches above the patella, passed through the quadriceps extensor, comminuted the femur for three inches, and made its exit to the left of the popliteal space, three inches above the joint. There was a slight wound of the calf of the leg. On May 13th wounds of entrance and exit were enlarged and fragments of bone removed. The fracture was located two inches above the inferior epiphysis, extending upward for three inches. Ends of femur were sawed off and brought together by silver-wire sutures, and the limb put up in a fenestrated plaster-of-Paris bandage.

On May 28th he was admitted to the general hospital from the naval hospital ship *Solace*. The first dressing had not been removed, and on removing it both the wounds of entrance and exit were found inflamed and suppurating. The skin sutures were removed, the wounds thoroughly irrigated, and dressed daily. There was some daily rise of temperature, but no symptoms of septicæmia, and the wounds gradually grew smaller. June 14th, when he was sent north on the *Solace*, a small sinus still persisted, at the bottom of which bare bone could be felt. His further history, as obtained from the surgeon-general of the navy, is as follows: "Patient admitted to the United States Naval Hospital, New York, on July 20th, having been under treatment at the Army General Hospital, Key West, for twenty-five days. At time of admission the left leg was in a plaster splint. Bone united. Wound healed rapidly. Motion in knee joint limited to about thirty degrees. Slight œdema about joint. Patient was invalided from the service September 1st."

CASE III. *Perforating Shell Wound; Infection; Pneumonia.*—Private J. A. A., Company H, Sixteenth United States Infantry, wounded by a fragment of shell which passed through the fleshy part of the arm. On his arrival at the hospital the wound was suppurating freely. On July 6th the patient was anæsthetized, the wound thoroughly cleansed with peroxide of hydrogen and normal salt solution, a counter opening made to insure drainage, and an iodoform-gauze drain inserted. On July 7th symptoms of septic pneumonia appeared; the inflammation soon invaded both lobes of the left lung, and septic pleurisy of the right side followed. Empyema was suspected, and on July 26th two thousand cubic centimetres of pus were removed by aspiration. On July 28th, under anæsthesia, a free incision was made into the pleural cavity between the seventh and eighth ribs, the cavity thoroughly washed out, and a double rubber drain inserted. Through this the pleural cavity was frequently washed out, and the cavity gradually grew smaller, but had not entirely closed when the patient was transferred north, August 22d.

In January, 1899, his commanding officer writes: "General condition fair; can do light duty only; will probably recover in time."

In this case the pneumonia and empyema were probably of septic origin from the infected wound. The wound did well after the initial cleaning out and soon healed, but the patient was extremely exhausted and weakened by the long-continued suppuration from the pleural cavity.

General Conclusions regarding Shell Wounds.—Shell wounds differ entirely in character from bullet wounds, and the mistake must not be made of supposing that they can be treated in the same manner. They are made by irregular fragments of metal, are lacerated, and, unlike bullet wounds, are always infected. The fact of infection requires that they be treated on lines of antisepsis rather than asepsis, and consequently the same conservatism can not be practised as with aseptic bullet wounds. They in many ways resemble railroad traumatisms and have to be treated on the lines of general surgical principles.

The amount of injury to the soft parts and bone has to be considered in connection with the infection, and active, rather than passive, conservatism has to be practised—by active conservatism meaning the thorough employment of antiseptics, the thorough removal of all bone fragments, and careful trimming of the lacerated soft parts. But amputation will frequently be required in these cases, much more frequently certainly than in bullet traumatisms.

In spite of the recovery of Case II after resection of the shaft of the femur, I do not consider that it should in any way be taken as a guide for modifying the general rule that resection of the shaft of a long bone should not be done where the wound is infected.

The risks of conservatism are much greater in shell wounds involving bones than in aseptic bullet fractures, and, as they are always infected, the surgeon will have to decide in each case whether the benefits which may be obtained by conservative treatment overbalance the danger to the patient from possible osteomyelitis, septicæmia, prolonged suppuration, and convalescence and recovery in bad cases, with a limb at best partly functionally defective from deep cicatricial formations.

Shrapnel-bullet Wounds.—As these wounds are made by lead bullets of large calibre and low velocity, they would supposedly present conditions relative to infection quite different from those made by the small-calibre bullet. This was, however, so far from being the case that of the seven shrapnel cases, all penetrating, which came under my observation, but three suppurated, and in those cases suppuration was the result of removal of the bullet in the field. In the other four cases the wounds of entrance were so like those of the small-calibre bullet, and irritative symptoms were so absent, that until the Röntgen ray was used the wounds were thought to have been made by the jacketed bullet.

This is a strong argument for modern methods. Had these large lead bullets been probed for under septic conditions, instead of being left undisturbed under the impression that they were small-calibre bullets, a very different result would have been chronicled.

Cases IV and V illustrate the effect of removal of the bullet in the field, and Cases VI, VII, and VIII the asepticity of the lead ball when uninterfered with under the supposition that it was the small-calibre bullet.

CASE IV. *Penetrating Shrapnel-bullet Flesh Wound; Infection.*—Private A. C. A., Troop G, First United States Volunteer Cavalry, was struck by a shrapnel ball which lodged in the posterior part of the forearm, over the extremity of the radius. The bullet was removed at the field hospital through the wound of entrance. On arrival at the general hospital the wound was suppurating and the neighboring tissues considerably inflamed. The wound healed under the usual antiseptic treatment, but some stiffness of the wrist remained, due to the formation of cicatricial tissue about the wound.

CASE V. *Penetrating Shrapnel-bullet Wound; Removal; Infection.*—Private M. M., Troop K, First United States Volunteer Cavalry, was wounded July 1st by a shrapnel ball which entered just below the lower angle of the right scapula, struck and was deflected by a rib, and passed around the chest just beneath the skin to a point just above the right nipple, whence it was removed at the field hospital. On his arrival at the general hospital, July 5th, the wound of entrance was practically healed, but the incision through which the ball had been removed was suppurating freely, and the bullet tract had been infected from the operation wound. The wound was carefully treated by irrigation with peroxide of hydrogen and normal salt solution, and had much improved, but was still suppurating July 17th, when he left for the North. I met him in New York in the latter part of September, and he informed me that the wound was still unhealed.

CASE VI. *Aseptic Penetrating Shrapnel-bullet Wound; Location of Bullet by Röntgen Ray; Removal.*—Private G. A. H., Company E, Thirteenth United States Infantry, was wounded July 1st by a shrapnel ball, which entered the back of the neck half an inch to the left of the second cervical spine. When admitted to the hospital the wound of entrance was so small and aseptic that there was nothing to indicate that it had been made by other than a Mauser bullet, and the patient himself believed that he had been wounded by that missile. The fluoroscope, however, demonstrated that it was a shrapnel ball, and it was removed July 16th from beneath the anterior edge of the sterno-mastoid muscle, two inches below the lower end of the mastoid process. Though made by a shrapnel ball, the wound tract was not infected; the wound of operation healed by first intention, and the patient was well when furloughed August 6th.

CASE VII. *Aseptic Penetrating Shrapnel-bullet Wound; Location of Bullet by Röntgen Ray; Removal.*—Private H. E. C., Company E, Ninth United States Infantry, was wounded in the left shoulder July 1st. The bullet entered an inch above the clavicle, at the junction of the outer and middle thirds. It could not be found on fluoroscopic examination, for, owing to the great humidity of the atmosphere at Key West, the static machine failed to produce sufficient light to penetrate the thicker parts of the body.

On admission to the hospital the wound was small and aseptic, healed quickly, and from its appearance it was thought to have been made by a small-calibre bullet. The patient complained of pain in the region of the shoulder blade, but had no other symptoms. He was furloughed August 6th, but upon rejoining his regiment at the expiration of the furlough he found it difficult to handle a gun and was sent to the general hospital at Washington Barracks, D. C., where he again fell under my care. The bullet was now located just beneath the posterior border of the scapula, and the radiograph showed it to be a shrapnel. I removed it December 3, 1898; the wound healed by first intention, and the patient returned to duty six days later. In this case the wound, though made by a shrapnel, was entirely aseptic. At the operation the tissue about the bullet wound showed no evidence of inflammation, and it was producing trouble only through friction in movements of the shoulder.

CASE VIII. *Aseptic Penetrating Shrapnel-bullet Wound; Location by Röntgen Ray; Removal.*—Corporal J. B., Company C, Sixteenth United States Infantry, was wounded July 1st by a bullet, which entered the groin two inches to the left of the root of the penis. From the appearance of the wound the bullet was thought to have been a Mauser. He was sent from Santiago to Fort McPherson, where, by examination with the fluoroscope, the bullet was located deep in the thigh, about two inches below the lesser trochanter. As the examination could only be made from before backward, the round shadow thrown by the ball caused the examiner to think it a Mauser lying end on. Afterward the patient was transferred to Washington Barracks, where the case came under my observation. When seen by me there was no evidence of inflammation, but the patient walked with a limp and complained of pain extending down the limb. A radiograph was taken, which showed the bullet to be a shrapnel. I removed it and found it imbedded in the tissues in close proximity to the sciatic nerve (Fig. 2), thus explaining the pain and disability. He recovered uneventfully, and was returned to duty shortly afterward.

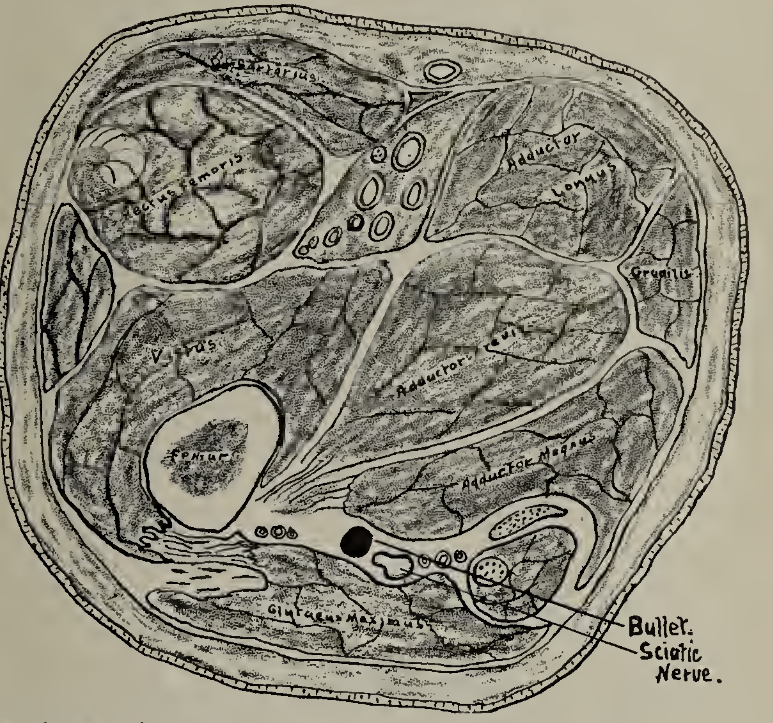

FIG. 2.—Showing location of shrapnel bullet in upper part of thigh of Corporal J. B., Sixteenth United States Infantry.

The following shrapnel wound would probably have been septic under any conditions, as the bullet penetrated so superficially.

CASE IX. *Shrapnel-bullet Fracture of Outer Table of Skull.*—Musician C. L. F., Company A, Fifteenth United States Infantry, was struck July 1st by a shrapnel ball just above the right eye. The ball fractured the outer table just over the frontal sinus and remained in the wound. It was removed at the field hospital. The wound was suppurating when he was received at the general hospital, but closed quickly under antiseptic dressings and irrigation with hydrogen peroxide. It was healed when he was furloughed August 12th.

Revolver-bullet Wounds.—From the distance which now ordinarily separates combatants wounds of this kind are rarely received in battle. But they frequently come under the observation of the military surgeon from accidental or criminal causes. Of the cases treated at Key West, two were accidental and one was criminal. Though the revolver bullet is a large lead bullet with low velocity, two of the wounds (Cases X and XI) were of interest from their similarity, as regards non-infection, to those produced by the jacketed bullet. The third (Case XII) was of interest from its gravity and treatment. In this case there was an informal resection of the ulna, in that about three inches of its continuity was removed. The wound was large, lacerated, and consequently infected, yet, as it received immediate treatment, it healed by granulation almost without suppuration. The final result could have been bettered if passive motion had been used after the patient left the hospital.

Case X. *Aseptic Penetrating Revolver-bullet Wound.*—J. R. K., orderly sergeant, United States Marine Corps, was wounded in a brawl by a revolver bullet which entered the anterior surface of the thigh and penetrated it superficially for about four inches. Though the bullet passed through the clothing, the wound was aseptic. The bullet was removed with aseptic precautions and the wound healed by first intention.

Case XI. *Perforating Bullet Wound of Finger.*—C. C., gunner's mate, United States Navy, accidentally shot himself with a navy revolver, the ball passing through the first phalanx, middel finger, left hand, comminuting the bone and severing the tendons, but without severing the finger, in this resembling certain wounds of the finger produced by the jacketed bullet. The tendons were sutured and the hand put on a splint. Recovery was rapid, but a stiff finger resulted.

Case XII. *Compound, Comminuted Revolver-bullet Wound of Ulna.*—Sergeant T. C. M., United States Marine Corps, while cleaning a navy revolver June 26th, accidentally discharged it. The bullet entered at the middle of the anterior surface of the forearm, passed upward, inward, and backward through the ulna, and emerged an inch and a half below the end of the olecranon. In its passage the ball shattered and greatly comminuted the ulna. The patient was brought to the hospital, immediately anæsthetized, and the wound explored. The bone for about two inches at the junction of the upper and middle thirds was found completely shattered. All detached fragments of bone and frayed tissue were removed and the wound thoroughly cleaned by irrigation with hydrogen peroxide and hot salt solution, and an iodoform-gauze drain was introduced. The action of the triceps on the short upper fragment of the ulna tilted the free distal end so much backward that to retain it in place it was necessary to make complete extension of the arm and fix it in that position on a long posterior splint. There was no rise of temperature, the dressing and gauze packing were removed on the fourth day, and the wound irrigated with hydrogen peroxide and salt solution daily thereafter. On August 17th he was transferred to the United States steamship *Lancaster*, the wound nearly closed and wearing the splint. Afterward he was discharged for disability, and I saw him in February, 1899. The use of the posterior splint had been continued after his leaving the general hospital, and as a result the forearm was ankylosed in an extended position, and there was no rotary motion. The space between the ulnar fragments was filled with callus. A radiograph showed displacement of a fragment of bone, which had not been removed at the time of the operation, as it was attached to the periosteum; showing that it is not always desirable to leave fragments of bone unremoved, even if attached, unless they can be securely fixed in place. As the joint was not injured, ankylosis of the elbow and absence of rotation of the forearm were undoubtedly due to the large amount of callus thrown out. Operation was advised, but the case was lost sight of.

(*To be continued.*)

REPORT OF
A CASE OF TUMOR OF THE CEREBELLUM
WITH
DRAINAGE OF FLUID THROUGH THE NOSE.*

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The clinical picture of brain tumor varies greatly in different cases, depending not so much on its pathology as upon its location, rapidity of growth, and associated morbid processes—such as meningitis, circumscribed encephalitis, congestive processes, etc. The characteristic syndrome of head pain, optic neuritis, vertigo, vomiting, localized or general paralysis, etc., may be variously combined with the absence of any one or of several of its components, although head pain is present in nearly every case.

I propose this evening to present a very brief outline of the clinical history of a case which I had the opportunity of studying for a long period of time, together with the result of the autopsy, including an exhibition of the specimens with microscopical sections.

The patient, Miss D., twenty-two years of age, was referred to me by Dr. K. K. Wheelock and Dr. I. N. Hatfield, February 21, 1896. She was of a strong, rugged build, and her health had always been good until the advent of her present illness.

Her family history was not very good. Her parents were living and healthy, but one sister had died of pulmonary tuberculosis, one brother had some sort of spinal trouble, two of the children had died quite young, and two had asthma.

She dated the beginning of her illness to an attack of *la grippe* which occurred four years before my examination. There had been for some months preceding this attack a little tendency to dizziness upon quickly turning the head, but this was not at all marked. The attack of *la grippe* lasted about two weeks, the only symptoms that she could recall being severe continuous headache, redness of eyes, hoarseness, and high fever. Following this attack she had had a great deal of headache occurring every day during the summer, and about every week during the winter, the pain being mainly vertical. The head pain appeared to date definitely from the attack of *la grippe*, and is not mentioned as having occurred before, although there had been rare attacks of "sick headache" before. For about three years following the attack of *la grippe* her health remained about the same as usual, excepting the severe headaches. Two years later she began to have tinnitus (double-sided), which was continuous but variable in character thereafter, and was increased synchronously with each heart contraction. The next symptom noted was partial anæsthesia with paræsthesia over the distribution of the left trigeminus. The paræsthesia consisted of a sensation of tightness or tension over the area indicated, which lasted about one month; during this time the headache was much more severe. Following this, in 1895, the motor branch of the left fifth nerve became gradually involved, as evidenced by a weakness of the muscles of mastication on the left side, which gradually but slowly increased. This weakness and anæsthesia became so great in the course of four or five months that she could not eat solid food without losing it between her cheek and teeth. During this period the tongue was also markedly paretic, protruding far to the left; fluids were regurgitated through the nose, and the left side of the face was partially paralyzed. A little later, severe left-sided tic douloureux developed, and this remained several months unaffected by treatment, which included the extraction of a wrongly suspected molar. This, with weakness of tongue, palate, and facial muscles, finally disappeared, closing with several attacks of spasm of the muscles of mastication on the left side.

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* Read before the Allen County Medical Society, September 19, 1899, and the Northern Tri-State Medical Society, Adrian, Mich., January 16, 1900.

About eight months before my examination a localized pain appeared in the left temple, and was a conspicuous and rather misleading feature until the close of the case.

The first symptom of visual disturbance appeared about four months prior to my first examination, and was definitely located by the patient about October 15th. It consisted of a gradual effacement of the left visual field from below upward. Looking directly at a person, she at first would see the upper two thirds, then only the shoulders and head, and lastly the head, when this also disappeared. When she consulted Dr. Wheelock, thirty days after the beginning of sight impairment, vision in the left eye had been reduced to bare perception of light and in the right eye was $\frac{20}{40}$. There was found at that time double optic neuritis, most marked in the left eye. The difference in the condition of the optic discs was very marked throughout my study of the case. The left disc was best defined at different times by from + 4 to + 6 dioptres, while the right required but two. Both discs of course gradually receded with the later atrophic processes.

At the time of my examination there was absolutely no perception of light in either eye, but the light reflex was marked in both, and the variation in the size of the pupils showed at times an unusually wide excursion. This reaction finally disappeared entirely, extreme mydriasis remaining constantly present in the strongest light.

Six weeks before she consulted me, impairment of hearing in the left ear was noticed, which progressed rapidly to very nearly complete deafness. Sense of taste entirely abolished front and back on the left side, including the soft palate.

Knee-jerk very active on both sides. No Romberg. symptoms. Dynamometer: right hand, 37; left hand, 27. Percussion caused marked pain over left mastoid region, also over coronal suture about an inch and a half above the level of the external angle of the left eye.

The surface temperature was carefully studied, many observations being made, especially in the mastoid and temporal regions, but with somewhat conflicting results. On one occasion the left mastoid region gave 100.8° and the right 98.2° F., but this was not constant. As a general thing it may be said that the surface temperature of the head was pretty constantly elevated somewhat above the normal. Further, on an average the temperature over the left mastoid region was higher than over any other part of the head, and it is the average range of cranial surface temperature, just as it is in general temperatures, which should always be considered. The general temperature was also occasionally somewhat elevated, and at different times would range from 100° to 101° for several days at a time without any obvious cause. The elevation of surface temperature occurred independently of these fluctuations in general temperatures.

Vomiting was an inconspicuous feature, it being noted once only that the patient had vomited for a few mornings immediately after waking.

Her mental state was singularly good so long as she remained under my observation. Her judgment seemed perfectly clear, and when she became absolutely deaf and blind I am informed that she recognized persons and things by the sense of touch, and manifested considerable acuteness.

Among many minor phenomena, the detailed account of which would unduly lengthen the history, I may mention an intolerable burning sensation in the eyes, and the frequent recurrence, sometimes several times a day, of a momentary sensation as though something touched her lower lip about half an inch to the *right* of the centre.

The diagnosis of a basal brain tumor was made, located in or adjoining the pons on the left side, and inaccessible to surgical procedure. The localized pain and tenderness in the left temple led to the suspicion that the growth was probably multiple, but this was shown by the autopsy to have been erroneous. There was no history of luetic disease, but the patient was given the benefit of a thorough and prolonged course of iodides, which were pushed to the limit of toleration. For a period of about three months as much as from one hundred and fifty to two hundred grains were given daily. No benefit whatever accrued from this treatment. Galvanism, with a dosage of from ten to fifteen milliampères, forehead to occiput, for ten minutes, was applied for several weeks, during which time there were periods of apparent improvement, but which, as the sequel showed, were simply fluctuations in the symptomatology, which was aggravated now and then, probably by periods of active congestion and increased effusion, and again ameliorated as the congestion became less and the effusion temporarily diminished. During all this time the neoplasm was steadily growing, and the brain adjusting itself to the increased pressure as best it could. The patient remained under observation and steady treatment for ten months, the subsequent care of the case being for the most part conducted by Dr. Hatfield.

It would be too tedious to give the results of treatment in detail throughout the time during which I observed the case. The iodides and galvanism have already been mentioned. The bowels were kept in a *very soluble* condition throughout by the frequent exhibition of salines. But the thing which had the most marked effect upon the symptoms was the systematic use of the ice bag. Its effect was unmistakable. Of course, it was only palliative, but under its influence pain and nervous irritability were notably diminished. About the only marked intermissions of pain that I ever observed in the case were apparently the result of this treatment. Ice bags were kept on the head for as much as four or five hours a day, usually about one hour at a time. The surface temperature of the head in this case, as I have also observed in many others, as previously reported,* remained lower for one day or longer after being reduced by ice applications. Properly applied, they are by far the most valuable palliative measure that I know of in such cases. Shortly after passing from my immediate observation, slight weakness of the lower extremities began and progressively increased, and at about the same time general convulsions began to appear, occurring from one to two a week up to three or four a day, with other frequent attacks of unconsciousness lasting a few minutes. About two months before death she began to have a free discharge of serous fluid from the right nostril, which ran as a steady stream or dropped rapidly, amounting to several ounces a day. At the time when this discharge began there had been absolute deafness for about three months, but *within one hour thereafter* her hearing, of course still somewhat impaired, returned in the right ear and remained until death. The discharge at first was very profuse, nearly strangling her. Before it occurred it was observed that there was severe conjunctival injection; this also disappeared immediately after the discharge. The headaches, which had remained about the same, being localized behind the left ear and in the left temple, were noticeably less after the beginning of the discharge through the right nostril.

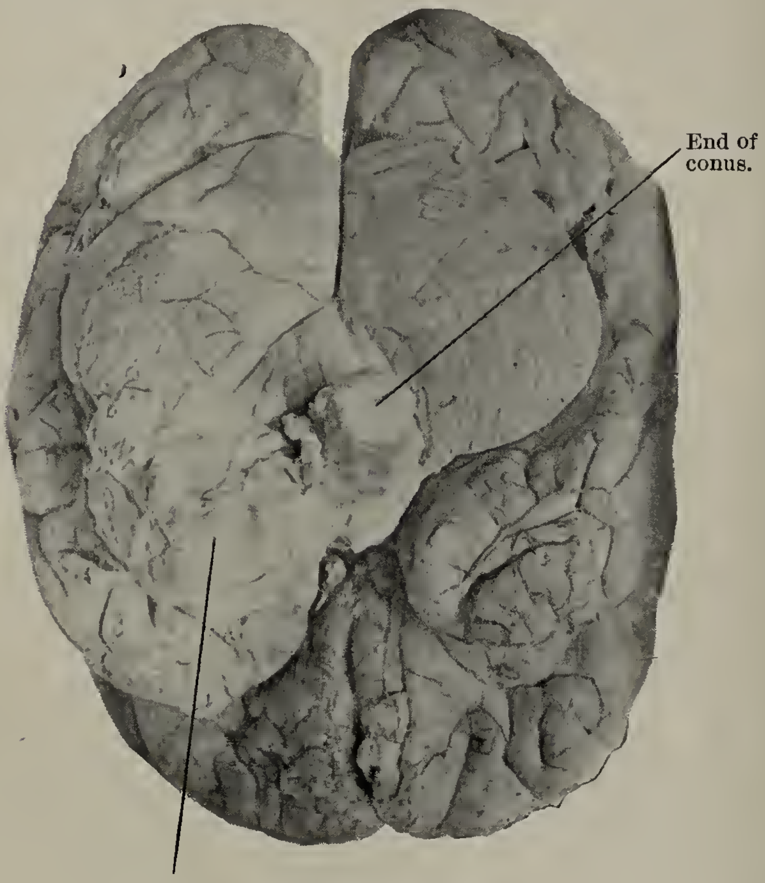

FIG. 1.

Death occurred in a convulsion on January 20, 1899, about three years after my first examination. The convulsions were clonic in character, and in the final one deep coma was present throughout.

Autopsy.—The post-mortem examination was held fourteen hours after death by Dr. Charles Bock, Dr. I. N. Hatfield, and others. The dura was not adherent to the calvarium at any point, and its inner surface was smooth. The arachnoid and pia showed no marked thickening, opacity, or other evidence of previous inflammation over the cortex, with the single exception that over a small area, about three millimetres in diameter, on the under surface of the left frontal lobe there was an adhesion due to an old inflammatory process, and a little of the cortical tissue was torn away, remaining adherent to the dura. There was some obvious atrophy of both optic nerves.

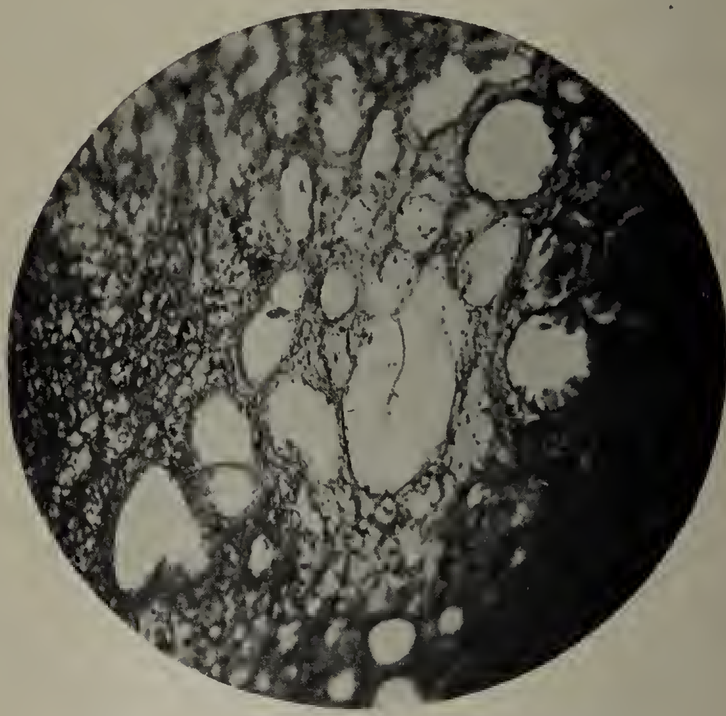

FIG. 2.—Angeiomatous structure (⅝-inch objective).

The tumor, as shown by the photograph (Fig. 1), had its apparent origin from the anterior margin of the left lobe of the cerebellum, pressing strongly on the pons and medulla, and giving rise to considerable lateral displacement of these structures. The consistence of the tumor was considerably firmer than that of the normal brain tissue. Around the tumor there had collected about one ounce of clear cerebro-spinal fluid which escaped when the tentorium was incised. No extravasation of blood or purulent or flocculent fluid was found. The base of the skull against which the tumor pressed was eroded down to the cancellous structure. The nerves having their origin from the medulla and pons passed along the under surface of the tumor.

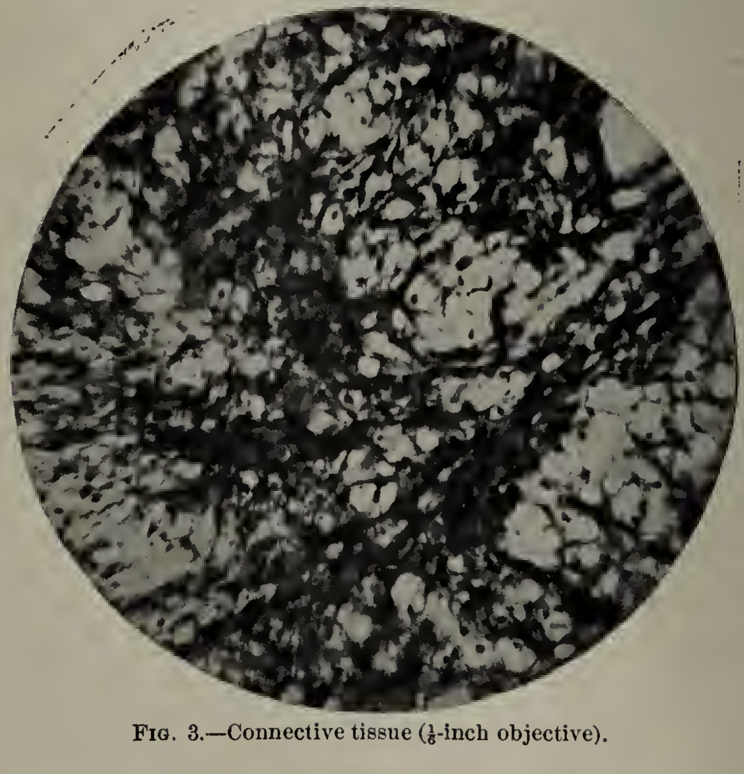

FIG. 3.—Connective tissue (⅛-inch objective).

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* *Alienist and Neurologist*, 1897.

After the brain had thoroughly hardened in formalin solution, it was found that the tumor was really not continuous with the cerebellum, but only in contact with it, the covering of the arachnoid giving it the appearance of continuity. A few loose shreds of connective tissue and several blood-vessels were apparently the only connection which the tumor had with the cerebellum, but lay imbedded in the cavity which it had formed by its own pressure and out of which it could be easily "shelled."

The histogenetic relations of the tumor, while obscured by gross changes incident to its large size, can, I think, be determined by its anatomical surroundings and pathological histology. As already stated, the nerve trunks were all apparently crowded before the tumor, and none of them could be traced into it; but the blood-vessels already referred to, including several good-sized arteries and veins, could easily be traced from the cerebellum to the tumor. That is to say, pial vessels which sent their branches down into the cortical substance of the cerebellum passed directly over to the tumor and were freely distributed into its substance. Its vascular relation to the cerebellum, therefore, or at least to the pial covering of the latter, which amounts to the same thing, appears fully established. Let us turn now to its histology. This is very complex. In some parts of the growth, as seen in Fig. 2, it is made up almost exclusively of blood-vessels, with scarcely any connective tissue. In other words, the structure is that of an almost pure angeioma. In other parts, as shown in Fig. 3, it is almost a pure connective-tissue growth. In still others there are isolated groupings of round cells strongly suggestive of beginning sarcomatous transformation. The origin of the vascular structure is perfectly obvious from what has already been said. Not so, however, with the connective-tissue growth. The cerebellar neuroglia and pial connective tissue must be considered as possible sources of origin. Although apparently free from actual continuity with cerebellar structure, this should be proved, if possible, by its histological character. Unfortunately, the time between death and placing of the specimen in formalin was about fifteen hours. This made it impossible to get results from the differential neuroglia stain. Sections of both the tumor and cerebellar cortex were deeply stained with hæmatoxylin and teased, with the view of demonstrating the "spider cells." They were easily recognized in the cerebellar structure, but could not be found in the tumor, the connective-tissue structure of which I therefore concluded to be of pial origin.

The tumor is, therefore, a mixed angeioma, with, in places, a preponderance of connective tissue of pial origin, and possibly beginning sarcomatous degeneration, which with more extended search might be found considerably advanced, and which might ultimately have placed it unmistakably in the group of angeiosarcomas.

It would seem possible that the morbid processes which led up to the neoplasm may have had their inception in the grippe, in the form of an active congestion or localized leptomeningitis. The persistent head pain following the grippe, and the circumscribed meningo-encephalitis found on the orbital surface of the left frontal lobe, point strongly to the occurrence of such a process. The pia mater is composed of successive layers of connective tissue interwoven with blood-vessels, and the beginning of the angeiomatous growth in such a congestion and dilatation of vessels between the pial layers, with the subsequent inclusion of connective tissue by the tissue irritations surrounding the primary angeioma, and the late tendency to small, round-cell proliferations would furnish a reasonably satisfactory explanation of its histogenesis. I have said nothing of the endothelial elements of the tumor, which in some of the peripheral portions have undergone some proliferation.

With reference to the gradual obliteration of the visual field from below upward, while interesting in itself, it is without any localizing or diagnostic value, and simply indicates that the atrophic processes involved the upper margin of the retina, or the corresponding fibres of the optic nerve between the retina and the chiasm first, and gradually extended downward until all these structures were involved, producing complete amaurosis. The double representation of each eye in each hemisphere precludes the possibility of this sequence of events being the result of a central disturbance. In the event of the pressure upon the optic tract back of the chiasm causing the visual disturbance, such disturbance would necessarily have been hemianopsic in character and distribution.

The drainage of the cerebro-spinal fluid through the cribriform plate of the ethmoid bone into the right nostril, and the practically instantaneous improvement of hearing, appear to be so well vouched for by both physician and patient as to leave no room for doubting their accuracy.*

There was apparently a rather sudden gush of perfectly clear fluid which very nearly strangled the patient, and this discharge was kept up constantly from that hour until the time of her death, in quantities roughly estimated at several ounces a day. This is a very interesting and instructive phenomenon from several points of view. That a nerve whose functions had been absolutely abolished for several months by pressure should be able to in a large measure resume its function instantly, while not entirely unique, is a fact worth emphasizing. It also suggests the feasibility of lumbar puncture as a palliative measure, if only the diagnosis of excessive fluid accumulation could be made.†

The greater intensity of optic neuritis on the side corresponding to the tumor is a point of interest. Gowers says that when the optic neuritis is greater on one side than on the other, or, as sometimes happens, is unilateral, it may be on the side corresponding to the lesion or on the opposite side.

In two cases of basal brain tumor recently studied by me, and both coming to autopsy, the optic neuritis was much more intense on the side corresponding to the tumor; and in at least five or six other cases in which the localizing signs were quite conclusive, the optic neuritis also was much more intense on the side of the lesion. It seems pretty well established that optic neuritis is not due primarily or even principally to the simple increase of intracranial pressure. If it were due to this it should be a constant accompaniment of hydrocephalus, whereas such is not the case. It is often found under conditions in which there is little or no increase of pressure, such as thrombotic softening resulting from septic emboli carried from the heart. The process would seem as much a chemical as a mechanical phenomenon, and it would certainly seem reasonable to expect that as a general rule a gross lesion, especially if basal, would be more likely to produce optic neuritis on the same than on the opposite side, or at least be of greater intensity there. In the absence of definite localizing signs pointing to one or the other hemisphere as a seat of the lesion, as in the indifferent zones, it would seem as though this point ought to be of some diagnostic value.

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* The drainage of cerebro-spinal fluid through the nasal passages has been seen by other observers. In one case reported by Wollenberg (*Archiv für Psychiatrie*, Band xxxi, Heft 1 and 2) there were two tumors in the occipital region associated with the constant escape of this fluid from the nose, the temporary arrest of which always aggravated the symptoms.

† Goldscheider recently reported a case of brain tumor in which choked disc disappeared after lumbar puncture, but the relationship did not appear certain. *Progressive Medicine*, September, 1899.

The progressive paresis of the lower extremities in this case was probably the result of the general pressure upon the entire motor tract in the pons, although in the other case of basal tumor referred to the pressure on these same tracts was apparently much greater than in this one, no marked paretic condition resulting.

In view of the coincidence in this case of a vascular tumor with an increase in the tinnitus synchronously with each contraction of the heart, the possible value of the latter phenomenon in the diagnosis of such a growth has suggested itself to me.

With reference to the suitability of this tumor for operation, the looseness of its adhesion and the ease with which it was removed from its resting place would apparently have made it possible to remove it by an operation during life. These conditions, however, could not possibly be determined in advance, and the general rule that basal tumors are not accessible to successful surgical procedure was applied to this case. Furthermore, the results of operation upon brain tumor in general are not such as to encourage operation in any but the most carefully selected cases. Bramwell,* for instance, in a recent communication, mentions one hundred and twenty-three cases of brain tumor occurring under his observation, in fourteen of which operations were performed without a single successful removal of a tumor.

I am indebted to my clinical assistant, Dr. B. W. Rhamy for assistance in the preparation of sections, photographs, and photomicrographs.

107 West Main Street.

An Irish View of Dentistry in the Army.—According to the *Northwestern Lancet* for March 15th, two Irish volunteers were being examined prior to enlistment in the British army in Africa. They were refused on the ground of having bad teeth, whereupon one of them said "he thought he was going to the war to shoot Boers, but he didn't know he had to eat them."

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* *British Medical Journal*, October 1, 1898.

ARTHRITIS DEFORMANS
AND THE
BENEFITS OF ELECTRICAL TREATMENT.*

By MARGARET A. CLEAVES, M. D.

I. W., aged fifty-one; widow; laundress. Admitted to the New York Electro-therapeutic Clinic December 5, 1896. Arthritis deformans.

Family History.—Mother dead—consumption; fifteen of mother's family died in five years of consumption. Father dead; father's family gouty. One of five children; three brothers born dead; one sister still living.

Personal History.—A "puny child"—never grew strong. Catamenia at thirteen, one year's interval; recurrence through life, two to four weeks, excessive, painful; duration, eight days. At the age of seventeen, overworked; sanguineous discharge for seventeen months. Then five months' cessation, followed by excessive and premature menstruation as before. Married at the age of twenty-five. In sixteen years, seven children and six miscarriages at from three months to five months and a half. Miscarriages caused by anxiety or strain. Fourteen years ago, when baby was four months old, flow established, lasting fourteen months. Menstrual function began to be irregular ten years since. Irregular for four years. Menopause fully established six years ago. No trouble since. No gynæcological symptoms.

Thirty years ago slept in a cold, damp bed; awoke with pain in the right shoulder and in the third and fourth fingers of right hand. In twenty-four hours pain and stiffness all over the body; helpless for four months; both hands dropped at wrist and powerless; never free from rheumatism since. Five years afterward awoke "rigid and helpless." Remained so for two years. One year prior to admission maxillary articulations invaded. Always subject to attacks of syncope.

Present Condition.—Severe pain in the lower part of the back; pain and discomfort in all joints; cough; scanty and burning urine; profoundly anæmic; capricious appetite; impaired strength; inability to walk save a few steps, and that with the greatest difficulty.

Physical Examination.—For condition of hands and feet see radiographs Nos. 4, 5, 6, and 7 (see the proceedings of the Society of the Alumni of the City (Charity) Hospital, published in our issue for March 17th, pp. 398–399). Heart normal in size; sounds tumultuous; systolic blowing murmur. Temperature, 98° F.; pulse, 104. Urine analysis: Quantity, three pints; color, amber; reaction, acid; specific gravity, 1.010; urea, one per cent.; epithelial cells few; uric-acid crystals very few.

Treatment.—Franklinic current, negative insulation, convective discharge with crown electrode for ten minutes and with the brush electrode to the entire general surface (nutritional), localized to the affected joints (pain and disability).

After three treatments the use of the convective discharge, localized to the affected joints, was supplemented by the disruptive discharge to the entire general surface.

Pain modified from first treatment. Under care for three months and had twenty-three treatments, resulting in marked relief from pain, increased strength, increased mobility, and nutritional gain.

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* Read before the Society of the Alumni of the City (Charity) Hospital, November 8, 1899.

Again under care for four months and a half, with eighteen treatments as before. Reported upon second admission marked amelioration of pain, increased strength, ability to do consecutive days' work washing and cleaning, and to walk considerable distances without pain or discomfort. Mobility—*i. e.*, relief from ankylosis—established in two of the phalangeal articulations. Under care a third time, one year since, for three weeks and had four treatments.

With each successive period of treatment there were lessened pain, greater mobility of the articulations, increased strength, and nutritional gain, which, although but comparative, were of incalculable value to one so hopelessly affected. No drugs and no change in the conditions of her life.

E. L. K., aged nineteen; single; typewriter. Admitted to New York Electro-therapeutic Clinic February 10, 1898. Arthritis deformans.

Family History.—Father and mother both dead—consumption; three paternal uncles died of consumption; one of two children; sister, aged sixteen, well.

Personal History.—Well as a child; catamenia established at sixteen, irregular, five times in a year; duration, five days; no pain.

In March, 1896, following exposure in bad weather going to and from school, she began to have pain in the feet; not confined to the house. After a year both hands were invaded, and subsequently there was pain in the shoulders, knees, and hips, and a week prior to admission in the elbows and wrists; there is now pain in all the joints, worse in the morning.

Physical Examination.—Right hand, first phalangeal articulations enlarged. Left hand (see radiograph No. 3), (*New York Medical Journal*, March 17th, p. 397), metacarpo-phalangeal articulation of the thumb and first phalangeal articulations of all the fingers enlarged. Left foot, second toe enlarged and painful. Weight, a hundred and fourteen pounds.

Treatment.—Continuous-current bath, active contact, body immersed in normal saline solution, porcelain tub, carefully insulated; temperature, 90° F., negative; indifferent contact, twenty-five square inches in area (161.25 square centimetres), to chest. With an observed E. M. F. of ten volts, an observed c. s. of thirty milliampères, and an observed time of six hundred seconds, there was obtained a R. of $333\frac{1}{3}$ ohms, 0.3 watt, the rate of expending energy, and a hundred and eighty joules, or the total expenditure of energy.

This was always followed by the sinusoidal current administered in the same way, full power of the alternator, frequency 1,496 alternations to the second, also for ten minutes.

Seven treatments in all were given, extending over a period of thirty-three days. From the first treatment there were less pain, increased mobility, improved appetite, and a better feeling. Improvement continued as above, with diminution in size of joints, increased strength, nutritional gain, and a sense of well-being. No drugs were given, and there was no change in the environment. Treatment was discontinued March 15, 1898. Weight, a hundred and sixteen pounds and a quarter; gain, two pounds and a quarter. Radiograph taken at third visit.

Remark.—Attention is called to the fact that in the treatment of these cases there was no localized expenditure of energy to an affected joint or joints, but in both instances an expenditure of energy to the entire organization, with the purpose of setting up such nutritional changes as would result in relief from pain, modification of disability, and improved general health.

79 Madison Avenue.

SPONTANEOUS DISCHARGE OF CEREBRO-SPINAL FLUID FROM THE NOSE.*

By W. FREUDENTHAL, M. D.

The disease I am about to describe in a very instructive case is so rare that in this country there has been only one similar, published by Scheppegrell, of New Orleans.† Although Scheppegrell does not mention anything about the presence in the fluid of a substance responding to the tests for sugar, all the other symptoms are so marked that there can be no doubt about the origin of the fluid. One or two other cases reported by American authors as nasal hydrorrhœa may belong to this category also, but this is not beyond doubt. There is one thing I would emphasize right now—viz., that the disease under question has nothing whatever to do with hydrorrhœa nasalis, and surely not with hay fever, as has been suggested by one author. These last two are nervous affections, while the other is a transudation from the cranial cavity. Th. Leber was one of the first to describe such a case,‡ in a girl fifteen years and six months of age, who had had hydrocephalus from birth. For six months vision had failed and dizziness set in. Several times a week she had severe headaches; three months later, a typical epileptic fit; then continuous dripping from left nostril. There was found postneuritic atrophy in both discs and a marked hydrocephalus.

Of late a case of nasal hydrorrhœa has been published by Urbano Melzi, of Milan.# The writer himself remarks: "The absence of reducing substances, the scarcity of proteid substances, the slight turbidity, as well as some clinical considerations, speak against the character of the normal cerebro-spinal liquid. On the other hand, the absence of mucin, the absence of morphological elements, the great percentage of inorganic substances represented, especially by the chlorides, are not characters corresponding to those of the liquid of nasal hydrorrhœa." Therefore, we must consider this case doubtful, too.

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* Read before the Medical Society of the State of New York at its ninety-fourth annual meeting, held at Albany, January 30, 31, and February 1, 1900.

† Case of Recurrent Headache, Each Attack being relieved by the Discharge through Right Nostril of a Fluid from Cranial Cavity. *Journal of the American Medical Association*, February 26, 1898, vol. xxx, p. 480.

‡ Ein Fall von Hydrocephalus mit neuritischer Sehnervenatrophie und continuirlichem Abträufeln wässeriger Flüssigkeit aus der Nase. Graefe's *Archiv f. Ophthalmol.*, 1883, Band xxix, p. 273.

# *Journal of Laryngology, Rhinology, and Otology*, December, 1899.

O. Körner, of Rostock, published a case * of a woman thirty-seven years of age. For eight years dizziness on walking. For four months discharge from left nostril. Optic atrophy on both sides, etc.

The most important and exhaustive publication on this topic is that by St. Clair Thomson, of London.† His case was that of a woman of twenty-five. The fluid ran for over three years, day and night, from the left side. The sense of smell was unaffected. She used from five to six handkerchiefs a day, and these, on being dried, were found to be quite pliable, and not stiff, as they would have been in cases of mere increase of mucous secretion. There were four intermissions in the flow, one of these lasting for sixteen days, two lasting twenty-eight days, and the other for two months. At these times there were headaches, chiefly over the left eye and the top and back of the head, and they were of a most severe character. At other times the patient remained in perfect health; "indeed, as regards attacks of headache to which she had been subject, she is even better than before this flow commenced."

For further details I would refer you to the very interesting and instructive book by St. Clair Thomson.

In order to understand the case on which I base my paper, I beg your permission to quote another which shows some similarity. In February, 1899, a woman consulted me on account of a very peculiar discharge from the nose. The history, in short, is as follows:

Mrs. H. S. is twenty-nine years of age. When a child she was always weak and anæmic; had measles, scarlet fever, etc. At the age of eighteen she married. She has had no children, no abortions, and no signs of any specific infection. She has always been nervous, but more so since her marriage, which has led her to consult many physicians. She has also been treated for some stomach trouble. For the last five years she has had to sneeze a good deal every morning, and immediately after her nose commences to run. It drips for several hours, mostly from eight to ten o'clock in the morning. Occasionally it runs like a stream. On examination nothing abnormal was revealed in the nose, or in any other part of the body. The patient herself seemed to take the affection in a rather light manner. She brought me four ounces of a fluid discharged the same morning from the nose. It was a watery sero-mucous discharge, which presented under the microscope masses of flat epithelial cells. Its reaction was slightly alkaline, its specific gravity 1.015, and it showed slight turbidity with a certain amount of floccules in it. There was also mucin present. In short, this was a case of true nasal hydrorrhœa, which was purely of nervous origin. The neurotic element in this case seems to be the same underlying factor as in the discharge of another disease, which we know under the name of gastrosuccorrhœa chronica. In fact, I believe her stomach trouble was nothing else but this gastrosuccorrhœa. After the demonstration of this case before a medical society, a colleague sent me another case with the same diagnosis: hydrorrhœa nasalis. We soon found out, however, that it was not hydrorrhœa nasalis; but as it offers a great many interesting points I shall have to give you all the details of the case:

Author's Case.—Mrs. C. B. is fifty years of age. In October, 1898, she had "very high fever, and it left her with a sort of bronchial cough." Since that time her nose has been steadily dripping. It began that winter and has continued ever since. Just a year before the dripping began she commenced to complain of pain in the forehead above the bridge of the nose. She had this night and day, and thought she was going out of her mind. She said: "If I do anything, I am not responsible for it." As her daughter describes it, "she was out of her thoughts." She could not move a chair, could not get from one side of her bed to the other, had no ambition, and did not care about anything. This continued for nine weeks. At that time Dr. E. C. Spitzka was called in consultation, and is said to have made a very unfavorable prognosis, especially regarding her sufferings, which it was expected would materially increase from day to day. However, ice applications were made every night until warmer weather set in. Dr. K., her house physician, ordered a greenish salve (mercury) to be rubbed in, which made her better. She would not have it continued because she "felt so unclean when she had it on." When the dripping commenced her senses, as, for example, hearing, became perceptibly better. (She lost her sense of smell when the dripping began.) All summer she felt about the same, the nose dripping very profusely until December 8, 1899, when she had a "fearful" cough and fever. After the fever subsided the dripping grew less, and at the same time the "senses became more dull again" (her hearing and her whole mental tone). She lost her ambition to work around, and she again complained of a dull pain in her forehead. Her sleep was the most painful thing to watch. She "talks all the time, jumps, and gives nervous twitches and screams." Her condition at this time, however, was not nearly as bad as in 1897. The dripping soon returned and with this all the other symptoms disappeared. She is even now sometimes languid and without ambition, but generally she is extraordinarily active.

Mrs. B. came to me first on June 10, 1899, and her main complaint was the constant dripping of her nose. She used more than twenty handkerchiefs a day, and was greatly annoyed by the constant discharge. This discharge was of a most peculiar character and entirely different from any I had ever seen before. There was a constant dripping of a watery fluid from the nose day and night. This increased when she inclined her head forward. When she lay on her side it ran sometimes "as if it had been turned on," and it did not make any difference on which side she lay. The same was the case when she lay on her stomach. When she awoke in the morning she generally found the pillows saturated with moisture. Only when she lay on her back did it cease to drip and she felt easier; but she had to cough then, due to the discharge running down her throat. She told me she had seen Dr. Herman Knapp, of this city, who had made the diagnosis of neuritis optica. He had also removed a polypus from the left nostril. But the removal of this polypus occurred long after the discharge from the nose had commenced. Upon the advice of some colleague she had had to take quinine, sixty grains a day for four weeks, and in consequence of this she thinks she lost her hearing. I could confirm all she said about the dripping, and when I examined her by Killian's method I could easily see, while she was standing with her head bent slightly forward, the discharge collecting between the middle turbinated and the septum, and thence running down to the vestibulum. When she sat down again and inclined her head only a little backward, I could see a drop forming at the uvula, and gradually falling down to the lower parts. On retronasal inspection I could not see the fluid further upward. There was nothing abnormal in the left nostril, and there were no excoriations around the vestibule or on the upper lip, but the whole nostril was apparently saturated with moisture. On the other hand, the right nostril was remarkably dry, and sometimes I even found scabs in it. At the end of September, 1899, a polypus had formed again in the left nostril and was removed easily. On December 18th I saw her in bed while she was getting over an attack like those described above. There had been an intermission in the escape of the fluid followed immediately by symptoms of brain pressure. On that day it had commenced to flow again, and she at once began to feel easier. Still, I could notice that the woman, who is generally very talkative, was noticeably dull, very slow in her movements, and seemed not to care about anything. She complained about a "bronchitis" which disturbed her very much, but I could find no evidence of it. The cough, which was quite severe, was simply brought on by the fluid falling down on the epiglottis or some other part of the larynx.

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* Abfluss von Liquor cerebrospinalis durch die Nase und Opticusatrophie, etc. *Zeitschr. f. Ohrenh.*, Band xxxiii, 1898.

† *The Cerebro-spinal Fluid; its Spontaneous Escape from the Nose*, London, 1899.

Within a short time the patient was up again, and she is now feeling just as well as before, the fluid dripping the same as ever, too. Once in a while she "gets the blues," but, as a rule, she is inclined to joking and is remarkably talkative. Her sense of smell is lost, and in consequence of an otitis media catarrhalis chronica her hearing is very much affected.

The question now arises, What pathological condition is at the bottom of this malady? In answer to this, I would repeat that we have here a case of permanent spontaneous discharge of a watery fluid through the nose for more than two years. Before the flow commenced very grave brain symptoms were present, which disappeared as soon as the escape of fluid began. Twice an intermission of the flow occurred, and each time it was accompanied by symptoms of brain pressure, which left the patient again when the flow made its appearance. There must consequently be something that presses on the brain, and we have all reasons to believe that it is a tumor. Now, when intracranial pressure commenced to increase the symptoms were very grave, and there is no doubt that these would have been more pronounced and made themselves felt in a most disastrous manner, as in other cases of tumor of the brain, if Nature had not come to the rescue and opened a hole for the escape of the cerebro-spinal fluid. Thus the intracranial pressure was diminished, and the patient was not only relieved, but her life saved as well.

Regarding the seat of the supposed tumor, I am inclined to believe that it is situated on the hypophysis cerebri (chiasma nervorum opticorum). The fact that there exists an optic neuritis speaks for this location, as does also a case published by Gutsche.*

Now, if we accept the fact that there is a tumor in the brain, it must naturally follow that the discharge is nothing but cerebro-spinal fluid. In parenthesis I wish to remark here that the amount of fluid in the cerebrum is supposed to be about two cubic centimetres, while there is more in the spinal canal. Under pathological conditions this fluid is formed rapidly, similar to effusions in the pleura and peritoneal cavities, and it then acquires the character of an ordinary serous exudation. More of this later on. But there are more proofs in favor of our belief that this discharge is nothing but cerebro-spinal fluid. As an important factor in this respect I consider the *constancy* of the flow—*i. e.,* day and night. In all cases of nasal hydrorrhœa which I could find in the literature, including my own, the flow stopped at night, while in all undoubted cases of cerebro-spinal discharge—which, by the way, are but few—the flow was permanent. This seems to me a very important point in the diagnosis of these two affections.

Finally comes the chemical analysis. While we must acknowledge the fact that we have no thorough distinction as yet between cerebro-spinal fluid and hydrorrhœa nasalis, still we know enough to say in some cases, "This is positively cerebro-spinal fluid, *and this is not.*" *Of the greatest importance* is the presence here of a *reducing substance,* and I am glad the chemical analysis confirmed our diagnosis by discovering the presence of 0.05 per cent. sugar. (The blood contains 0.2 per cent. sugar, and the lymph, according to Levene, from 0.07 to 0.3). Von Jacksch believes that the presence of sugar and the absence of proteids is proof enough that the fluid is of cerebro-spinal origin. In its first part this assertion is correct, while the second part is not quite so. The cerebro-spinal fluid *does* contain proteids, and, according to Hoppe-Seyler, the amount of proteids runs up to over one per cent. In our case, too, albumin was found.

Regarding the presence of phosphorus, we ought to expect, as Dr. Levene believed, an increase of it, but the chemical analysis gave a different result. Dr. P. A. Levene, of the Pathological Institute of the State of New York, of this city, was kind enough to undertake this laborious analysis. The fluid sent to the doctor measured about a hundred and twenty cubic centimetres, and was collected at intervals during twenty-four hours. It was a watery fluid without any sediment. The reaction was alkaline. Specific gravity, $1.007\frac{2}{10}$; total solids, 1.3 per cent.; mineral salts, 0.39 per cent.; mucin absent.

"I am very sorry," Dr. Levene continues, "the phosphorus estimation turned out rather a disappointment.

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* *Zur Pathogenese der Hypophysistumoren und über den nasalen Abfluss sowie das Verhalten des Liquor cerebro-spinalis bei einer Struma pituitaria.* Dissertation. Erlangen, 1894.

There were not more than traces present in the one hundred and twenty cubic centimetres of liquid which I received last.

"Thus I can add to the last report the following: Thirty-five cubic centimetres of the liquid treated with five hundred cubic centimetres of alcohol and allowed to stand for some time, a slight precipitate consisting of proteid appeared. The filtrate evaporated to dryness, the residue dissolved in water and again treated with alcohol. The alcoholic extract again evaporated, the residue dissolved in fifty cubic centimetres of water and titrated with Pary's solution. The reducing substance calculated as glucose was equal to 0.05 per cent. The quantity of glucose in blood and lymph equaled 0.2 per cent.

"*Phosphorus Estimation.*—One hundred and twenty cubic centimetres of the liquid evaporated to dryness, ignited, the residue dissolved in water on the addition of some nitric acid. The solution, treated with a solution of ammonium molybdate, the precipitate redissolved in ammonia water, and the solution treated with magnesium mixture and allowed to stand twenty-four hours. Only a very slight precipitate appeared, not sufficient for weighing."

Although the phosphorus estimation did not come up to our expectation, still hardly anything is known about that chemical in connection with our question. But the principal facts—viz., the absence of mucin and, above all, the presence of a reducing substance—will alone suffice to confirm beyond doubt that the fluid is of cerebro-spinal origin.

Dr. William M. Leszynsky, who had seen the patient while the dripping was going on, kindly furnished me the following report on her nervous condition:

NEW YORK, *January 18, 1900.*

"DEAR DR. FREUDENTHAL: I herewith forward report of the result of my examination of your patient who has a continuous flow of cerebro-spinal fluid from the nose:

"Pulse, 72, regular, and without increase in tension. Heart and lungs show no indication of disease. Pupils equal, 3.5 millimetres. Reactions normal. There is slight rotary oscillation of the eyeballs in efforts at fixation upward, and upward and outward. No apparent muscular paresis. Vision: Right, $\frac{20}{30}$; left, $\frac{20}{100}$. Fields for form and color normal in both eyes. Ophthalmoscope reveals a receding neuro-retinitis in the left eye and a mild degree of papillitis in the right eye. Facial innervation normal. No sensory or motor disturbance of the fifth nerve. Movements of the tongue normal. Sense of taste defective in the anterior two thirds of the tongue. On the right side she fails to detect the taste of 'sour,' 'salty,' or 'sweet,' while bitter is recognized. On the left side she can only recognize 'sweet' and 'bitter.' Taste is preserved on the posterior portion of the tongue. There is a complete loss of the sense of smell on both sides. There is also deafness affecting both ears, as a result of chronic otitis media. The thyreoid gland is of normal size.

"Her memory and judgment are not affected. Her daughter states that the patient's memory is 'abnormally acute.'

"The urine contains neither albumin nor sugar. Systematic physical examination shows no further evidence of disease of the nervous system.

"Very truly yours, WILLIAM M. LESZYNSKY."

I have nothing to add to this report except to state that the doctor did not see the patient when the flow had stopped. He saw her while the discharge was going on and the patient felt at her best. This fact should not be overlooked.

If one asks us now for the route of the exit of the discharge from the cranial cavity we are not able to give positive facts. Of the few cases of this disease on record autopsies have been made in only a small percentage. In one case, according to St. Clair Thomson, the escape in life had taken place through a small hole in the dura mater, alongside the apophysis crista galli. Of the other instances, where death took place with cerebral symptoms, we have only the statement of the route in two cases; in two other cases, although gross lesions were found in the brain and membranes, no connection could be found with the nose, and in another case the result of the post-mortem examination was entirely negative. However this may be, we have to believe that the escape takes place through the cribriform plate of the ethmoid into the nose. Thomson advances the idea that there might exist a small congenital meningocele in the region of the cribriform plate of the ethmoid, which ruptures into the nose under some exceptional pressure. Of course, this is mere speculation that can not be proved. I am at a loss to say why in some tumors of the brain the pressure is strong enough or certain parts of the cribriform plate are weak enough to allow the fluid to escape, and why this should not be the case in others. If we knew this, perhaps we could utilize it for therapeutic purposes.

The appearance of anosmia must be attributed most likely to increased intracranial pressure, a theory advanced some years ago by Quincke.

Thomson had named this whole affection connected with the discharge of cerebro-spinal fluid cerebro-spinal rhinorrhœa. I must say I am not in favor of the term rhinorrhœa, principally because it is not a rhinorrhœa, but—*sit venia verbo*—a craniorrhœa. The fluid comes from the cranium and not from the nose, although it has to pass through it. But if ever the word catarrh (from κατά, ῥέω = to run down) was used properly, it would be in this rare affection. Perhaps cerebro-spinal catarrh would be the most proper name whereby to call it.

In several of these cases formation of polypi took place. Thus, in ours, polypi had twice to be removed, but without any relief to the patient. Their formation, as most writers believe, is due to the constant soaking of the mucous membranes.

It is peculiar to notice that in by far the majority of cases the left nostril was the one that discharged this fluid. Why this should be so is entirely incomprehensible.

Regarding the treatment of these cases we are absolutely helpless. Nor should we try to stop the flow. This is also the wish of my patient, who fully appreciates that the recurrence of her serious symptoms is due to the cessation of the flow. How long she will be able to stand this is more than we can answer.

DIABETES MELLITUS,

WITH ESPECIAL REFERENCE TO ITS TREATMENT WITH THE DOUBLE BROMIDE OF GOLD AND ARSENIC.

By GEORGE D. BARNEY, M.D.,
BROOKLYN.

THE prognosis was never more favorable than at the present time, providing the treatment as outlined is followed. In a small proportion of cases the disease is of short duration and slight severity. In advanced life, and when the cause may be removed, it may be considered curable. A relapse is not uncommon and a return to the treatment necessary, even when the urine has previously become free from sugar and the patient appears to be in perfect health. Corpulence is an advantage, should the tendency be inherited. When the disease is attended by pancreatic or cerebral derangement the outlook is grave indeed.

In cases that go on to a fatal issue, death is usually the result of tuberculosis, diabetic coma, or heart failure, but a considerable proportion of them succumb to carbuncles, gangrene, pneumonia, nephritis, cerebral hæmorrhage, and other complications.

The dietetic treatment is of the utmost importance, the object being to exclude so far as possible all sugars, starches, and other articles from which glucose may be formed. If these measures can be carried out the course of the disease may usually be modified. This necessitates the exercise of self-denial to no little extent on the part of patients—in fact, they often refuse to submit to so rigid a regimen. Sometimes the system seems to require a certain amount of sugar and starch, and if both are rigidly excluded the patient does not do so well as under a more liberal diet.

The diet list must be made as comprehensive as possible in order to avoid a sameness, which soon becomes unbearable. When pure gluten bread can be obtained it is admissible; but, unfortunately, nearly all contains more or less wheat flour. Almond flour is a fair substitute, but it is not long tolerated and is quite expensive. Soups made without rice or starchy articles; fish, poultry, game, and meats, with the sole exception of liver; spinach, cabbage, cauliflower, string beans, pickles, mushrooms, asparagus, oyster plant, tomatoes, eggs, cheese, butter; cream in moderation; tea, coffee, and cocoa sweetened with glycerin or saccharin—these make up a list the changes upon which may be rung by an experienced cook so that the end in view may be attained. Milk contains a large amount of sugar or lactose, and should therefore be used sparingly if at all.

Hygienic measures are not to be overlooked. As before stated, diabetics are particularly susceptible to cold and require a higher temperature in their apartments than people in ordinary health. For the same reason the clothing should be sufficient to keep the body comfortable at all seasons of the year. Exercise in the open air should be taken with due care not to overtax the enfeebled muscular powers. Every effort should be made to avoid nervous strain and mental excitement of all kinds. Plenty of sleep and adequate rest are also important.

The medicinal treatment of diabetes in combination with a rigid dietary like that already indicated is promising of good results.

For many years opium or one of its derivatives, codeine in particular, has been the main reliance of the physician. It is unnecessary to dwell upon the disadvantages of the method, for the effect of this class of drugs continuously administered for a prolonged period is too well known to require discussion here. Ergot, too, has been highly recommended because of its peculiar effect upon the circulation. Its use, however, is open to many objections. It is rarely well borne in doses sufficiently large to exert a powerful influence over the vascular system, nor can it be exhibited for weeks at a time, even in relatively small amounts, without giving rise to a train of unpleasant symptoms, which necessitate an interruption if not a complete discontinuance of the remedy.

Careful study of diabetes renders it more than probable that the disease is but the evidence of the existence of a grave malnutrition, due primarily to the effect of perverted nervous function. While the liver still continues to perform much of its normal work, it nevertheless acts not unlike an engine deprived of the regulating and restrictive influence of its governor and balance wheel. The glycogenic centre has lost much of its power to control that portion of the hepatic function over which it presides and the whole machinery is put out of gear. Glucose is formed more rapidly, and the destruction of the red blood-corpuscles goes on with unwonted freedom. The relaxed and overtaxed organ fails to prevent access to the circulation, not only of intestinal bacteria, but also of unchanged peptones elaborated in the stomach. The crasis of the blood becomes profoundly impaired, and every cell in the whole body suffers from the lack of sufficient food and is devitalized by circulating poisons as well. Hence the great physical prostration, the tendency to skin affections, the mental depression, and the inability to resist hostile attacks from without. The indications for treatment then are to curb and regulate the nervous influence at the root of the trouble, improve the blood and the circulatory system, and prevent as far as possible the invasion of the micro-organisms and inhibitory products of incomplete and imperfect digestion from the alimentary canal. The remedy which best fulfills these indications is found in the double bromide of gold and arsenic, introduced to the profession under the name of "arsenauro." It combines in one the tonic alterative elements of the two metals and the sedation of bromine. First of all, it affects the nervous system, restoring the integrity of the glycogenic centre. Secondly, it acts as a powerful vasomotor regulator, increasing the vascular tone and diminishing the amount of blood supplied to the liver. It improves the digestion and, secondarily, the condition of the blood itself. It brings about a decided change in the general nutrition through the alterative influence it exerts upon the ultimate cells.

In the majority of cases I have seen rapid and marked benefit follow the use of the preparation. The quantity of sugar is notably diminished, the thirst grows less imperative, mental depression disappears, and the body nutrition improves progressively.

"Arsenauro" should be administered after meals, beginning with five drops, and increasing the dose one drop each day thereafter until the limit of physiological tolerance is evident—*i. e.*, puffiness about the eyes, a tendency to diarrhœa, and colicky pains about the abdomen. This limit, however, differs; in some patients it will be reached at a ten-drop dose, and in others it will require thirty or forty drops.

CLINICAL REPORTS.

Case I.—E. H. G., man; occupation, manager; aged forty-eight; weight, a hundred and sixty pounds. Family history of diabetes. Complaining of pains in the lower extremities, depressed mental condition, loss in body weight, mouth dry and parched, frequent and profuse micturition, and unquenchable thirst. Specific gravity of the urine, 1.032. Albumin, none. Sugar present.

Treatment.—Restricted diet. Arsenauro.

Report of the Urine Examination as made Weekly and Body Weight.

TIME.	Twenty-four hours. Quantity.	Specific gravity.	Albumin.	Sugar.	Weight.
	Ounces.			Per ct.	Pounds.
First week	148	1.040	No.	3	165
Second week	96	1.031	No.	2½	160
Third week	82	1.027	No.	2	159
Fourth week	70	1.026	No.	1½	155
Fifth week	59	1.026	No.	1⅓	151
Sixth week	47	1.025	No.	1	150
Seventh week	33	1.023	No.	½	149
Eighth week	30	1.023	No.	¼	149
Ninth week	29	1.023	No.	Trace.	148
Tenth week	28	1.022	No.	Trace.	148
Eleventh week	27	1.020	No.	No.	149
Twelfth week	27	1.019	No.	No.	150
Thirteenth week	27	1.017	No.	No.	152
Fourteenth week	27	1.015	No.	No.	153
Fifteenth week	27	1.015	No.	No.	159

Patient discharged with instructions to live according to the restricted diet list for the next six months.

He has been for years an inveterate smoker and has indulged quite freely in stimulants; they, too, must be discontinued.

Case II.—M. A. T., woman; aged thirty-six; married; occupation, teacher. Family history unfavorable; three brothers had diabetes. The patient had an attack of influenza about six or seven months ago, and since that time she has been feeling badly—has headache, thirst, a dry, unpleasant taste in the mouth, and at times a "sick stomach." Her rest at night is broken by frequent micturition. She says that her weight has decreased about twelve pounds within six months, and that at times she has pains in the lower part of her back extending down to the calves. Within the last few months she has had a number of boils, an eruption upon the face, and an itching at times about the genitals and over the body.

The urine examination made the next day: Specific gravity, 1.032; albumin, none; sugar present. Quantity passed in twenty-four hours, one hundred and eight ounces.

Treatment. — Restricted diet, absolute rest, arsenauro.

Reports of Urine Examination and Body Weight as made Weekly.

TIME.	Twenty-four hours. Quantity.	Specific gravity.	Albumin.	Sugar.	Weight.
	Ounces.			Per ct.	Pounds.
First week	84	1.030	No.	1½	138
Second week	49	1.027	No.	½	136
Third week	32	1.024	No.	Trace.	135
Fourth week	30	1.021	No.	Trace.	134
Fifth week	30	1.022	No.	Trace.	133
Sixth week	29	1.020	No.	Trace.	133
Seventh week	27	1.017	No.	No.	133
Eighth week	27	1.017	No.	No.	134
Ninth week	26	1.013	No.	No.	135
Tenth week	27	1.013	No.	No.	137

Reports of Blood Examinations (Microscopically) that were made every Two Weeks.

TIME.	Red corpuscles.	White corpuscles.	Hæmoglobin (per cent).
First week	3,985,000	5,760	36
Third week	4,150,000	6,000	34
Fifth week	4,450,000	7,350	37
Seventh week	4,680,000	8,600	42
Ninth week	4,880,000	8,700	48

Patient discharged after ten weeks' treatment, greatly improved. She has returned to her usual vocation and will for a while continue upon the restricted diet and arsenauro.

Case III.—E. H. S., male; aged forty-three; occupation, salesman. Spent several months in Germany at a sanitarium for the treatment of diabetes; came home much improved. A few weeks after his return had a severe relapse, passing about a hundred and fifty ounces. Specific gravity, 1.042; albumin, none; sugar, over three per cent.; weight, a hundred and sixty-two pounds.

Treatment.—Restricted diet. Arsenauro and trional at bedtime.

Report of Urine Examinations made Weekly.

TIME.	Twenty-four hours. Quantity.	Specific gravity.	Albumin.	Sugar.	Weight.
	Ounces.			Per ct.	Pounds.
First week	130	1.041	No.	3¼	160
Second week	100	1.033	No.	2	158
Third week	68	1.026	No.	½	156
Fourth week	47	1.022	No.	⅛	155
Fifth week	50	1.020	No.	Trace.	153
Sixth week	29	1.013	No.	No.	152
Seventh week	30	1.015	No.	No.	152
Eighth week	26	1.015	No.	No.	152
Ninth week	27	1.016	No.	No.	152
Tenth week	28	1.016	No.	No.	153
Eleventh week	24	1.017	No.	No.	154
Twelfth week	29	1.016	No.	No.	155
Thirteenth week	30	1.015	No.	No.	155
Fourteenth week	30	1.014	No.	No.	155
Fifteenth week	22	1.018	No.	No.	155
Sixteenth week	28	1.017	No.	No.	156

Blood examinations (microscopical) were made every two weeks, the report of which is as follows:

TIME.	Red corpuscles.	White corpuscles.	Hæmoglobin (per cent).
First week	4,100,000	6,570	32
Third week	4,760,000	6,800	34
Fifth week	4,900,000	6,980	37
Seventh week	4,950,000	7,350	38
Ninth week	5,100,000	7,600	40
Eleventh week	5,150,000	7,680	44
Thirteenth week	5,180,000	7,770	48
Fifteenth week	5,250,000	7,900	50

Patient very greatly improved, and is still under observation and treatment.

IS THERE A RHEUMATIC PERIOSTITIS?

By ARTHUR STERN, M. D.,

ELIZABETH, N. J.

THERE is perhaps hardly a word in medical terminology more indiscriminately used than the word "rheumatism." The peculiar combination of symptoms comprehended by this term has been under observation and experience for nearly two thousand years; * the literature of the subject has attained enormous proportions. Some idea of its extent and variety may be obtained by an examination of the index prepared by Pribram,† and accompanying his excellent treatise on acute inflammatory rheumatism, which has just appeared in Nothnagel's great handbook. Pribram says that he cites only the literature used in the preparation of his book; nevertheless, his index covers sixty-six pages of small print! And yet, notwithstanding all the patient research of the past, including the very excellent treatise of Pribram, which may be taken from the viewpoint of our present data as a standard (in so far as the pathology and treatment of inflammatory rheumatism are concerned), we are to-day without any exact knowledge of the ætiology or pathology of the disease. There is, however, no doubt that the word rheumatism covers several pathological conditions, and, furthermore, that muscular and inflammatory rheumatism are related to each other neither clinically nor pathologically.

But during the century now closing the medical world has made immense strides in the study of pathology, overturning all theory and building anew upon the firm base of bacteriological fact. So wide and far-reaching have been the results achieved in this direction, so comprehensive and all-including are the inferences derivable from those results, that a great hope has taken possession of the medical mind that the true pathology of infectious diseases is within our near grasp. The recorded observations of the past will take on new meaning in the light of our clearer knowledge, and the observations of the future will be studied with a clearer vision and a definiteness of purpose that hitherto have been denied.

I headed this article with the words: "Is there a Rheumatic Periostitis?" Observations on this point have not been plentiful. Generally speaking, periostitis might follow traumatism; it might be a disease *per se*—as instance the acute infectious periostitis which is usually found with osteomyelitis—or it might accompany very many acute or chronic diseases. Pribram, in his above-mentioned book, says that diseases of the periosteum have been reported by several observers in connection with acute inflammatory rheumatism. He states that Fuller, in his work on *Rheumatism, Rheumatic Gout, and Sciatica, their Pathology, Symptoms, and Treatment* (London, 1866), reports such cases as periosteal rheumatism, but finds them, for the greater part, in old cachectic people. He reports having found the periosteum thickened and painful, especially on pressure, the places of predilection for such periosteal swellings being the tibia, ulna, scapula, sternum, and cranium. Although he does not deny that syphilis may be an ætiological factor, he expressly states that he has found such periosteal swellings in people who had never suffered from the disease. F. Menu gives us a rather classical description of real rheumatic periostitis in his monograph *De la périostite dans le cours du rheumatisme articulaire*, Thèse de Paris, 1874. He says that inflamed and swollen joints are essential to the diagnosis of rheumatic periostitis, and reports having seen four cases with localization on ribs, elbow joints, claviculæ, and os frontis.

It would, of course, be impracticable to go at length into Pribram's exhaustive work. Pribram himself, while carefully guarding his own opinion, ventures the statement that it is certain that in the course of acute inflammatory rheumatism periosteal localization might take place, which might show an albuminous or serous exudation with a tendency to reabsorption. He warns that one should be very careful as to the diagnosis, but says, finally, that there certainly are cases in which osteomyelitic processes take place during the course of acute inflammatory rheumatism, and in this connection it gives me pleasure to report a case which may properly be classified among the latter.

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* Aulus Cornelius Celsus lived, according to Pagel—*Geschichte der Medicin*—before Christ, and knew without doubt the rheumatic affections. In his work *De re medicina*, libri viii, reprinted Lugduni, anno 1560, he dedicates chapter vi of the fourth book, entitled De lateris dolore, to these troubles. He recommends an application of mustard and vinegar to the chest until sores and pustules appear, and then a dressing which will extract the deleterious fluid out of the system. Note the stability of external treatment in two thousand years!

† Alfred Pribram. Der acute Gelenkrheumatismus, in H. Nothnagel, *Specielle Pathologie u. Therapie*, vi. Theil.

Charles C., American, born of German parentage; ten years old. Family history from father's side negative. Mother's family neurotic. Sister of mother had chorea for months when young. No syphilis in family. In 1896 the patient himself had a moderately severe attack of chorea for four weeks. This subsided upon his contracting scarlet fever of medium severity, with accompanying throat affection. Hardly had he recovered from scarlet fever when he contracted measles. Repeated examinations of the heart were negative. Heart sounds healthy and no murmurs. As soon as the measles had disappeared some of the joints commenced to swell, and the patient developed a slight fever. Natrium salicylicum cured this affection in a few days. I had no further occasion to visit the patient until his present illness (January of this year). When I first saw him both of his ankles were swollen, his temperature was 101° F., pulse 110, and he complained of pain in the sternum. Upon examination, I found in the middle of the sternum a swelling about the size of a half dollar, slightly elevated, and painful on pressure. During the evening and following night the pain was unbearable, the patient getting no sleep. The following morning I found the same swelling and a similar smaller one on the left clavicle, painful *per se* and upon pressure. I treated the patient internally with salicylate of sodium and externally with salicylic vasogen. Next night, extreme pain and no sleep. The following morning, temperature 100°, pain somewhat subsided, swelling had decreased, elbow joints painful. The following day the pain and swelling in sternum and clavicle had subsided, both ankles were swollen and painful, and there was some pain in the left knee. From that time on, recovery from the rheumatic trouble took place gradually. Upon my last visit I could hear a slight systolic murmur at the apex of the heart. Heart shock could be covered with two fingers in the mamillary line. At the same time slight choreic movements appeared, and the patient is suffering from a chorea of medium severity at the present time.*

I think it reasonable to infer from the foregoing case, taken in connection with the cases adverted to by Pribram and others, and their comments thereon, that rheumatic periostitis is a fact. Assuming so much, how does the fact affect the pathology of inflammatory rheumatism? Excepting traumatism, we know that periostitis follows only infectious diseases—as, for instance, typhoid fever, scarlet fever, etc. How, then, can we escape the conviction that inflammatory rheumatism is an acute infectious disease *per se?* What could show more clearly the metastatic character of the infecting agents than the accompanying periostitis? Unhappily, we have not as yet been able to isolate the specific microorganism which causes the disease, although staphylococci and several kinds of diplococci are spoken of as the probable ætiological factors; but much has been gained if we have been able to fix beyond peradventure the true character of the disease, and a great hope is born that the exact ætiological factors will shortly become known, and humanity be forearmed against a scourge so excruciating in its passage, and too often so disastrous in its effects.

Incidentally, with a view to dissipating the confusion of ideas which too often attaches to a term indiscriminately used, would it not be well to differentiate the disease now called "inflammatory rheumatism" from the other diseases with which it is associated in name, by making use of a term already used by some and better adapted to its pathological characteristics—as, for instance, "acute inflammatory polyarthritis?"

218 East Jersey Street.

LEUCOCYTOSIS.*

By J. H. BURCH, M. D.,
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Perhaps there is no one factor within the realm of clinical medicine that appeals to the clinician with greater force than that of leucocytosis; for, through the excess, defect, or perversion of the leucocyte, we often provide ourselves with a key whereby many obscure pathological problems may be solved.

It is my intention in this paper to confine myself wholly to the practical aspect of this subject, not entering into the physiological characteristics of the various leucocytes with which you are all so familiar.

In the study of leucocytosis, as it appeals to the practical physician, we have to consider the normal numerical relationship of the different leucocytes, one to the other, the variation of this relationship as effected by infancy, digestion, exercise, massage, cold baths, pregnancy, and parturition. We have next to consider the pathological changes which may take place within the leucocytes, and the variation from the established normal relationship of one type to the other.

We are told that the normal proportions of the various leucocytes are as follows: The small uninuclear lymphocytes, from twenty to thirty per cent. The large uninuclear lymphocytes, from four to eight per cent. The polymorphonuclear leucocytes, from sixty to seventy per cent. The eosinophiles, from a half to four per cent. Mast cells, from a quarter to a half per cent. But this relationship is subject to physiological fluctuations—as in infancy the percentage of the small monomorphonuclear lymphocytes varies from forty to sixty per cent., while after a meal rich in proteids the count varies to thirty-three per cent., the increase being manifested proportionally in regard to the various leucocytes, except the eosinophiles, which are diminished. Pregnancy also causes a physiological leucocytosis, with a uniform increase of the various white cells, the average count being thirteen thousand to the cubic millimetre. Violent exercise, massage, cold baths, and parturition also cause physiological leucocytosis.

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* After this article had gone to press, the boy developed a very severe endocarditis and pericarditis, while the chorea gradually disappeared.

* Read before the Syracuse Academy of Medicine, November 6, 1899.

When considering physiological-leucocytosis, we must always take into consideration that we have to deal with individuals, in no two of whom shall we find the processes of metabolism the same, so that what may be physiological with one may be pathological for the other.

En passant, I will here state that after a large number of counts I have found that a fairly accurate average of the normal relationship of the leucocytes may be computed as follows:

Two polymorphonuclear leucocytes to each microscopic field.

One small lymphocyte to every five fields.

One large lymphocyte to ten fields.

One eosinophile to twenty fields.

This estimate, to be of any practical value, necessitates counting the number found in at least twenty-five fields, or, better, one hundred, and averaging the total amount, and then it will be found somewhat rude, and perhaps not wholly trustworthy; but I mention it, as I have often been asked by physicians how leucocytosis could be estimated without resorting to the fatiguing process of counting by means of a Thoma-Zeiss apparatus, and I think that for practical purposes some reliance may be placed upon the above-stated ratio. This, of course, applies to stained blood.

Pathological leucocytosis differs from the physiological from the fact that in place of a proportional increase of the different leucocytes we find a predominance of one particular kind. Thus we have a leucocytosis proper, in which the increase is manifested with regard to the polymorphonuclear cell; lymphocytosis, in which the small and large lymphocytes predominate; eosinophilia, in which the eosinophiles are proportionately increased; and, lastly, myelocytes, which are almost wholly confined to cases of pernicious anæmia and leucæmia, although occasionally found in grave anæmia, syphilis, and phthisis.

Nearly all the inflammatory and infectious diseases are characterized by leucocytosis, the principal exceptions being typhoid fever, measles, grippe, malaria, tuberculosis, and tuberculous affections.

I have selected the following cases that have fallen under my observation, as demonstrating the value of blood examinations in certain obscure conditions:

L. F., aged forty-seven years; occupation, machinist; was attacked April 23, 1897, with severe pains in the lower right quadrant of the abdomen, with extreme tenderness upon pressure, more marked directly over McBurney's point. He presented a history of having been suffering from a slight indigestion for several days, although he informed me that he had not been constipated at any time during his indisposition. The pulse was rapid and weak, and the temperature 99° F. I prescribed an opiate to relieve the intense pain from which he was suffering, and directed that a full dose of magnesium sulphate be given, and also an enema. In the afternoon of the same day I found the temperature at 102° and the pulse 120, very weak and compressible. The tenderness was intense and more circumscribed at McBurney's point, and there were also retraction of the abdominal muscles and dullness upon percussion over the involved area. The enema, I was informed, had been effective, he having had a thorough movement. As I thought the case was one of appendicitis, I wished to verify the observations of others in regard to the accompanying leucocytosis; but, much to my surprise, I found a deficient leucocytosis, the examination of the urine at the same time revealing large quantities of indican and colon bacilli. In the afternoon my *confrère,* Dr. Wasse, saw the case with me, and confirmed my diagnosis of appendicitis, and, as all the symptoms were much aggravated at this time, we advised an immediate operation. But before sending for a surgeon we decided, from the result of the microscopic findings, to use a long rectal tube and make sure that there was no impaction. We did so, and were surprised to find our appendicitis transformed into a case of impacted colon.

I have carefully examined the blood in five cases of pneumonia, and in four of them there was a distinct leucocytosis, while in the fifth, where the pneumonia followed measles, there was deficient leucocytosis. In these cases I found that those marked by a distinct increase of the polymorphonuclear leucocytes did the best. One of these cases with leucocytosis was unusually severe, and in this case the increase was made manifest in regard to the old adult neutrophites—*i. e.,* the cells were large, the nuclei were fragmented and irregularly stained, the cell walls broken in places—in fact, many cells presented themselves as a shapeless mass of broken nuclei and granules, the cell wall seeming to have disappeared. With the first indication of a change for the better in this case, the cells became more distinct, nuclei clear and deeply stained, cell wall distinct, and the cells themselves very small, with well-defined outlines—in fact, they had the appearance of young and normal cells, although somewhat smaller than those usually found in normal blood.

The case with deficient leucocytosis was a very severe one. The polymorphonuclear cells were of immense size, some of them being nearly as large as a myelocyte; they were badly stained, with indistinct cell wall and fragmented nuclei. In this case I detected an appreciable change after the exhibition of nuclein, the cells increasing in number, and being much smaller and more distinct. Another peculiar condition I observed in this case was that with the accompanying degenerated condition of the leucocyte, a careful examination of the urine revealed albumin, granular casts, a distinctly acid reaction, and innumerable colon bacilli, together with a marked diazo reaction.

In three other cases of pneumonia, presenting the so-called typhoid condition, I have found the colon bacilli in large numbers, but in this case I made a bouillon culture and was surprised to obtain a marked reaction with diluted blood, following the technique of the Widal-Johnston reaction. There was complete agglutination in less than a minute. Further investigations of this bacillus proved it to be of the para-colon type described by Widal.

With the reappearance of the young and vigorous neutrophites all the above conditions disappeared.

My experience with typhoid fever has been very limited, as I have made blood examinations in but two cases, and in both there was deficient leucocytosis, the evolution of the leucocyte being similar to that found in pneumonia.

In tuberculosis I have never been able to verify the observations of Dr. Holmes, of Denver, in regard to the early diagnosis of phthisis by means of degenerative changes within the leucocyte. This may be, and doubtless is, owing to my deficient technique in the preparation of blood smears and staining. In advanced cases I have always found the peculiar degenerative changes he describes, but never in the incipiency, before well-marked septicæmia became manifest; but I have in two instances found myelocytes, as mentioned by both Holmes and Cabot.

One of these cases is somewhat peculiar, and with your permission I shall report it:

Millie V., aged fifteen years, had been ill two weeks when I saw her. Her family history was satisfactory, and her previous health had been excellent. She had been under the care of a physician whose diagnosis was typhoid fever. I found her having a morning temperature varying but little from 102° F., while that of the evening was 104°. The pulse varied from 110 to 120, the tongue was dry, and the face flushed; there were also ileo-cæcal gurgling and diarrhœa. The spleen was distinctly palpable; there was a hacking cough, jerky respiration, and a prolonged expiratory murmur over both apices, but no dullness upon percussion. There were no rose-colored spots, but there was a low, muttering delirium. Examination of the urine revealed neither albumin nor casts, but a distinct diazo reaction. Widal-Johnson reaction negative, after many trials. Examination of the blood revealed red cells normal, deficient leucocytes, the predominant variety of leucocytes being the large uninuclear lymphocyte, and now and then, but by no means frequently, a large myelocyte. This, with the negative Widal-Johnston reaction, led me to think of acute tuberculosis, which was confirmed several days later when a specimen of sputum could be procured.

I am now treating a case which to me is very interesting from its illustration of the clinical significance of lymphocytosis.

Matie R., aged seventeen years, came to Baldwinsville three weeks ago from New York. The patient was a well and healthy girl up to the age of sixteen years, when she began to suffer from very severe headaches. The menses, which had been regular since the age of fourteen, at that time became scanty and irregular. The pain was referred mostly to the eyes and back part of the head. After a time she became unable to walk alone, as she could not coordinate muscular movement, and there was also an absence of patellar reflex. There was at times distortion of the left side of the face, and there was persistent vomiting, although the tongue was perfectly clean and moist. She had lost fifteen pounds during the past month. There was hectic fever, the temperature averaging 100° F. in the afternoon. I noticed that the pupil of the left eye refused to respond to light, while the right seemed normal. There was no cough or expectoration, and a careful examination revealed no chest lesion. An examination of the blood revealed a slight anæmia and a marked lymphocytosis, the small uninuclear lymphocytes predominating. This, together with the loss of vision of the left eye, led me to think of hereditary syphilis. I wrote to Dr. Hirshfield, of New York, who had examined her eyes, and he informed me that she had chorioiditis, the result, he thought, of hereditary syphilis. Both parents stoutly denied ever having had syphilis, but, nevertheless, under large doses of sodium iodide, she is rapidly improving.

Therapeutical Notes.

For Amœbic Dysentery.—Dr. Aderhold (*Chicago Medical Recorder*, February) says that the most successful way of destroying the amœbæ seems to be by giving medicated enemata, of which a large variety is permissible; *e. g.*, quinine sulphate, 1–5,000 to 1–1,000; bichloride of mercury, 1–10,000 to 1–5,000; hydrogen peroxide, 1–20 to 1–5; silver nitrate, 1–3,000 to 1–1,000; zinc chloride, 1–2,000 to 1–1,000; methyl blue, 1–1,000 to 1–100. The position of the patient while taking the enemata may vary, but if he lies on his back, leaning to the right side, with his hips elevated a foot or more, he will find it a suitable position, which he can maintain for some time without being exhausted. The enemata should be given once or twice a day and may be interchanged to suit the individual case. Dr. Jay found it a decided advantage to alternate the quinine with peroxide of hydrogen on different days, while at the Augustana Hospital it was interchanged with methyl blue.

Glycerin in Acute Febrile Diseases.—*Clinica moderna* for January 17th gives the following:

℞ Pure glycerin	4,500	grains;
Citric acid	30	"
Water	9,000	"

M. One or two spoonfuls may be given every hour. This mixture allays thirst and causes no inconvenient effects.

A Hypnotic.—The *Journal de médecine interne* for December 1, 1899, gives the following:

℞ Trional	15 grains;
Heroine	½ a grain;

M. To be taken at bedtime in a cup of milk or hot tea.

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AMERICAN VISITORS TO THE PARIS INTERNATIONAL MEDICAL CONGRESS.

Can it be true that good Bostonians no longer expect to "go to Paris when they die"? It must be, or they would be panic-stricken at such a picture of the minor woes that are likely to be visited upon physicians of English-speaking countries who may attend the congress as is presented in a Paris letter printed in the *Boston Medical and Surgical Journal* for March 8th.

There is something about the English-speaking peoples, says the correspondent, that creates a profound aversion in the French mind. This they themselves admit, but ordinarily they conceal it under a veneer of politeness which is generally taken as charming. This disguise is shed, however, whenever such an occurrence as the Spanish-American war, the Dreyfus case, or the Boer-British war commands their attention. Then, says the correspondent, "You behold a man whose hatred of everything English (in which he includes everybody who speaks the English tongue) is rendered doubly bitter by being long contained, and generally very ignorant of all that concerns the object of his hatred."

The writer gives a number of instances illustrating the rancor that pervades the French people. He says that during our war with Spain he himself saw a Frenchman come up behind an English lady seated in a cab and try to knock her sailor hat off, and fail only because the hat was securely pinned to her hair. This attempt, he says, caused great satisfaction to the bystanders and to a policeman a few yards away, who made no step to interfere. It is hardly safe, he thinks, for an English-appearing woman to go on the streets of Paris unaccompanied; she is in danger of being taunted with the exclamation *sale Anglaise!* This, he says, has happened "any number of times" to ladies whom he knows—once recently on the Champs Elysées, in the afternoon, the abusive epithet came from the lips of a soldier in uniform. Placards bearing the words *Mort aux Anglais* are posted in public places, and he has seen the interior of a railway car "plastered with little printed labels bearing the same amiable inscription."

These things are mentioned to warn Americans of the real feeling of the French people, however self-interest may lead them to cover it up. We trust that the correspondent's experience has been exceptional, so far as regards gross outrages, but we fear it must be admitted that the French people in general, from the time of Citoyen Genet down, have thought of Americans, when they thought of them at all, with contempt and dislike, but, with few exceptions, the refined French, we believe, do not entertain these feelings. Certainly nothing of the kind will be shown in the International Medical Congress. The need of the warning given by our Boston contemporary's correspondent lies in the inevitable contact with Frenchmen of the lower classes to which visitors to Paris have to look forward.

A correspondent of the New York *Sun*, speaking of French hatred of the English and of their general failure to distinguish American from English people, advises Americans who attend the Paris Exposition to take out passports. Doubtless it is always well to take passports on going to a foreign country, but the feeling of the French rabble against Americans seems to be hardly less rancorous than against Englishmen, so that an American passport, even if every member of a family carried one around and could count on its being understood by the multitude, would be likely to secure its possessor very scant consideration. Moreover, we do not believe in any such unmanly course. It is un-American to go about with a placard saying, in effect, "I didn't do it." Our advice to American physicians who go to the Paris congress is not to be "looking for trouble," but to take courtesy as sincere, and to bear with equanimity any rudeness that may be put upon them. They certainly may count upon the best of treatment at the hands of their professional brethren in France.

THE PUBLIC CARE OF CHRONICALLY DISEASED CHILDREN.

The subject of the State care of chronically diseased children is one that presses itself not only upon the philanthropist, from the point of view of the helpless and hopeless condition of the children themselves, but also upon the social economist, from the standpoint that, if treated adequately from a sufficiently early period and for an adequate time, a considerable proportion of the sufferers may be transferred from the debit side of the social ledger as State incumbrances to its credit side as useful citizens. The class of patients to which we refer are such as, requiring a prolonged treatment for cure, are scarcely fit subjects for admission into general hospitals. They are condemned to confinement at home amid unhygienic conditions that inevitably retard their progress, if they do not even drive them from bad to worse, and which constitute them a burden upon their mothers, interfering with the fulfillment of their already arduous duties, through years of suffering unless death releases them.

Madame A. Schabanoff (*Revue mensuelle des maladies de l'enfance*, February), physician in chief of the Prince Oldenburg Hospital for Children, in a communication to the International Congress for the Protection of Childhood, held at Budapest in September last, gives an interesting account of the work accomplished in this direction in Russia. A series of articles published by the medical profession of St. Petersburg in 1882 first roused public attention to the need of special hospitals for the care of chronic diseases of childhood, and met with such a liberal response that in the following year a Society of Hospitals for Children affected with Chronic Diseases inaugurated, under the presidency of Dr. Charles Rauchfuss, the first permanent hospital of this character, containing twenty-two beds. This was speedily followed by a second hospital with twenty beds. Other societies sprang up, giving rise to other hospitals. These hospitals were not merely constructed and equipped and then left to chance for their maintenance; they were endowed with a sufficient capital to insure their permanence. The two hospitals first referred to have received since their establishment (in fifteen and thirteen years respectively) close upon one thousand children whose average stay in hospital has been from four to six months. The cures have aggregated thirty per cent., the ameliorations 47.4 per cent., while the mortality has been only 5.9 per cent., the majority of deaths having been due to infectious diseases imported by newcomers, to which the enfeebled condition of those in hospital was unable to offer adequate resistance. Of the diseases, osteitis (Pott's disease with abscess, coxalgia, caries, etc.) has naturally caused the longest stay in hospital, more than a year being usually required. The affections most favorably influenced have been rhachitism, athrepsia, chronic digestive troubles, anæmia, scrofula, and beginning tuberculosis. The removal of conditions favorable to the progress of the disease has in many cases proved all that was necessary to effect its cure. The future of the patients discharged from these hospitals has been further benefited by the establishment of a *Maison de protection*, or convalescent institution, where, up to the age of from fifteen to eighteen years, they can be cared for, receive primary instruction, and be trained to various occupations, chiefly the preeminently wholesome one of gardening, under perfectly hygienic conditions, adequately protected against inclemency of climate, and surrounded by a spacious garden, thus obviating recurrence of disease and insuring the evolution of sound and healthy citizens from raw material, which would otherwise have become a permanent burden on the community. Seaside homes, giving the benefits of sea air combined with the fragrant, purifying influences of pine woods, complete this admirable undertaking, which is as yet only in its inception. The author says: "These institutions do not merely procure relief for sick children of the poorer classes; they prepare for them a brighter future by curing in early age a great number of affections which, left to their ordinary course, would result in incurable adult invalids, useless alike to themselves and to society."

The coming century should certainly see all the civilized countries in the world developing these principles to their fullest extent by an organized system of State care for chronically diseased children. Such a course would soon render superfluous the proposed State sanitaria for tuberculosis, whose properties could then be one by one utilized for this more practical method of purifying the polluted stream of life at its source till it flowed limpid and crystal through a land of health.

INTESTINAL FERMENTATION AS A CAUSE OF THE NEUROSES OF THE MENOPAUSE.

The dependence upon retrograde changes in the sexual system of the syndrome of symptoms commonly occurring at the menopause is so universally and firmly rooted an article of faith that one is quite aghast at its denial. Yet this denial has been made by Dr. Charles J. Aldrich in an article on The Neuroses of the Menopause caused by Intestinal Fermentation, published in the *Annals of Gynæcology and Pædiatry* for December, 1899. In substance, Dr. Aldrich's view is that the period of the menopause coincides with the "epoch of invigoration" and has no connection with the climacteric of age. This "epoch of invigoration" is the author's term for a period of economic equilibrium occurring about the age of forty, but somewhat earlier, of course, in women than in men, and intervening between the termination of developmental processes and the inception of the period of decay. "At this epoch," says the author, "the blood-supplying, blood-making, and blood-elaborating organs of the body have completed the growth of the organism, done their work, and are striking a balance with the needs of the economy." But the habits of a lifetime are not abandoned. More and richer food is taken, which the organism is incapable of dealing with, fermentation ensues, and innumerable micro-organisms flourish vigorously, elaborating toxines from which arise constipation, anorexia, eructations, flushes, vertigo, headaches, insomnia, etc. Further, the constant "suggestion" operating among womankind from the beginning of menstrual life results in a morbid introspection which, joined with the peculiar changes in the nutrition of the body, renders the nervous system particularly impressible. To the objection that these changes in metabolism occur also in men, who nevertheless do not suffer from the syndrome of symptoms associated with the menopause of women, the author's reply is that man's active life and the absence of that persistent suggestion previously referred to as occurring among women enable him to escape these evils. When he does suffer from them, however, which Dr. Aldrich considers to be oftener the case than is commonly supposed, he is said to be suffering from neurasthenia, and quiet and a regimen are prescribed for him. The author further asks whether the neurotic and other symptoms of the so-called climacteric do not often occur with great intensity long before the cessation of menstruation, with equal intensity during the severe floodings, are not a little increased by the final cessation, and do not often persist for ten or fifteen years after the menopause. How, then, can they be simply the direct result thereof? One case is recorded by the author of a married woman who at the age of thirty presented all the typical phenomena of the climacteric, with a foul tongue, fœtid breath, poor appetite, irregular, tympanitic, and distended bowels, and pain and a sinking sensation at the epigastrium. Menstruation ceased for four months, and indican was present in the urine. Self-intoxication was diagnosticated, and treatment by baths, calomel, charcoal, β-naphthol, and bismuth completely restored the patient to health and normal menstrual functions, which condition persisted five years later at the date of record. There would certainly seem from these considerations of the author's some grounds at least for crediting self-intoxication with a considerable share in the production of the phenomena of "change of life," and further investigation on the point seems unquestionably called for.

THE DANGERS OF EMOTIONAL EXCITEMENT.

According to the *New York Times* for March 24th, an aged woman recently fell dead at a revival meeting at Montclair, New Jersey, the excitement over her granddaughter's sudden "conversion" being the active cause. Heart disease is said to have been present. We are well aware that hysterical religious emotionalism has no monopoly as an exciting cause in determining sudden death in those whose physical condition renders them liable to it, and that any other intense emotion or excitement might have produced the same result; but that need not deter us from pointing out the intensely powerful influence of "crowd suggestion" in creating dangerous excitement, which is at no time desirable, even in healthy subjects, let alone those with whom there is any suspicion of cardiac disease. Because there are some dangers always present of a certain character often unavoidable is no reason for deliberately adding to them others that might be avoided. Mass meetings, as a rule, on any and every subject in which the feelings are involved, are undoubtedly prejudicial, tending to extend the already too prevalent tendency to nervous troubles in general, and affording a special individual danger to most neurotic and cardiac subjects.

CHRISTIAN SCIENCE AS A HOME-BREAKER.

The case is recorded in the *New York Times* for March 24th of a previously industrious workingman who, from all accounts, had lived happily with his wife and child until he began to read Mrs. Eddy's wonderful brain-twisting effusion, some two years ago, and became an attendant at the "Second Church of Christ Scientist" in Madison Avenue. Then he deliberately left his wife and child, apparently, judging from the letter he posted after his departure, with no other reason than that he conceived it his duty to go and prepare himself for the Lord's work. It is convenient to be ableto divest one's self of all one's responsibilities by saying "Don't worry; the Lord will provide for your wants"; but we presume that, if the defaulting husband is found, however uncertain the law may be about interfering with Christian Science when it is used as a cloak for money-making medical quackery, on the ground of non-interference with religious liberty, it will mete out the same measure to it as to all other causes when it results in domestic desertion, religion or no religion.

AN INSANE PROPENSITY IN EPILEPTICS TO TRAVEL.

In the *Deutsche Aerzte-Zeitung* for March 1st Dr. A. Hoche, of Strassburg, gives the substance of a contention by Dr. J. Donath, of Budapest, published in the *Archiv für Psychiatrie*, xxxii, 2, to the effect that loss of consciousness is not a necessary feature of an epileptic paroxysm. The epileptic explosion, Donath thinks, is sometimes manifested in the form of a sudden impulse to travel, and he mentions three instances of its occurrence in epileptics. Hoche, who admits that, if such a morbid propensity is due to epilepsy, the fact is of great medico-legal importance as serving to explain some cases of desertion, vagabondage, etc., questions the validity of the doctrine that loss of consciousness is not essential to the epileptic paroxysm, and until that is proved, he intimates, we are not justified in imputing elopements and the like to epilepsy.

THE WORK OF AN ARSENICAL PLASTER.

People who think that empirics should not be interfered with will perhaps be encouraged in their opinion by a case lately related by M. André at a meeting of the Nancy Society of Medicine (*Gazette hebdomadaire de médecine et de chirurgie*, March 1st). A young man had a little pediculated tumor on his shoulder, and an empiric applied two arsenical plasters in succession. They were left in place six and seven weeks respectively. The result was that the joint was opened, the head of the humerus was laid bare, and the ends of the acromion and clavicle were denuded and necrosed. The ulcer, as large as the palm of one's hand, was partly covered by a thick eschar, and to that the second plaster was still clinging. The eschar was cut away with scissors, the necrosed portions of bone were resected, and the joint was cleansed and dressed in the open fashion. Healing took place in two months and a half, but the mobility of the joint was almost destroyed.

THE RELATIVE PROPORTIONS OF DEATHS FROM DISEASE AND FROM INJURY IN WAR.

The Transvaal war seems on the whole to be singular in more directions than one. One point that may be mentioned is the reversal, so far, of the usual experience as to the relative mortality from wounds and from disease. According to the *British Medical Journal* for March 3d, down to the week ending February 24th, the number of officers and men killed in action had been 1,652. To this must be added 294 who had died of wounds, making a total of 1,946 killed by the enemy; while at the same date the number of officers and men who had died of disease, including the deaths from disease in the besieged garrisons, so far as known, was returned at 793. It is probable, however, that as the campaign progresses some approach to the general balance will be made, and later advices must certainly have materially raised the death-rate from disease.

SCARLET FEVER IN CHINA.

As might have been expected, there is found to be no truth either in the assertion that scarlet fever is unknown in China or in the explanation that the freedom of the Chinese from the disease is due to their not using cow's milk. This is conclusively demonstrated by Dr. John Inglis, of Peking, in a letter to the editor of the *Columbus Medical Journal*, published in that journal for February.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported for the two weeks ending March 24, 1900:

DISEASES.	Week ending Mar. 17.		Week ending Mar. 24.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	19	9	27	8
Scarlet fever	193	15	176	10
Cerebro-spinal meningitis	0	3	0	8
Measles	729	18	828	34
Diphtheria	256	45	265	46
Laryngeal diphtheria (croup)	17	14	26	13
Tuberculosis	230	188	251	192
Chicken-pox	33	0	26	0
Small-pox	7	0	2	0

Dr. William Osler and the University of Edinburgh.—Dr. Osler requests us to state that he is not a candidate for the chair of medicine in the University of Edinburgh.

Marine-Hospital Service Health Reports.—The following cases of small-pox, yellow fever, cholera, and plague were reported to the surgeon-general during the week ending March 24, 1900:

Small-pox—United States.

Mobile, Ala.	Mar. 10-17	5 cases.	
Jacksonville, Fla	Mar. 11-17	1 case.	
Brunswick, Ga	Mar. 12	31 cases.	
Cordele, Ga	Mar. 12	Present.	
Tifton, Ga	Mar. 12	"	
Chicago, Ill	Mar. 10-17	1 case.	
Forty-five counties in Illinois	Dec., Jan., Feb.	1,000 cases.	
Evansville, Ind	Mar. 10-17	3 "	
Wichita, Kansas	Feb. 10-Mar. 17	53 "	
Twenty-four counties in Kansas	Feb. 1-28	437 "	14 deaths.
Covington, Ky	Mar. 10-17	1 case.	
New Orleans, La	Mar. 10-17	71 cases.	21 "
Detroit, Mich	Mar. 3-17	2 "	
Minneapolis, Minn	Mar. 3-17	52 "	1 death.
Omaha, Neb	Mar. 10-17	1 case.	
New York, N. Y	Mar. 10-17	7 cases.	
Cleveland, Ohio	Mar. 10-17	7 "	
Greenville, S. C	Mar. 10-17	2 "	
Salt Lake City, Utah	Mar. 10-17	1 case.	
Portsmouth, Va	Mar. 10-17	6 cases,	1 death.
Spokane, Wash	Mar. 10-17	5 "	

Small-pox—Foreign.

Prague, Bohemia	Feb. 17-Mar. 3	7 cases.	
Antwerp, Belgium	Feb. 17-Mar. 3	13 "	3 deaths.
Ghent, Belgium	Feb. 24-Mar. 3		4 "
London, England	Feb. 17-Mar. 3	18 "	1 death.
Cairo, Egypt	Feb. 4-18		15 deaths.
Lyons, France	Feb. 3-10		3 "
Gibraltar	Feb. 18-Mar. 4	22 "	2 "
Athens, Greece	Feb. 17-Mar. 3	9 "	2 "
Bombay, India	Feb. 6-13		268 "
Kurrachee, India	Feb. 4-11	22 "	2 "
Madras, India	Feb. 10-16		1 death.
Chihuahua, Mexico	Mar. 3-10		7 deaths.
Mexico, Mexico	Feb. 18-25	23 "	11 "
Vera Cruz, Mexico	Mar. 3-10		1 death.
Moscow, Russia	Feb. 10-21	9 "	1 "
Odessa, Russia	Feb. 17-Mar. 3	21 "	3 deaths.
Warsaw, Russia	Feb. 10-17		2 "
Corunna, Spain	Feb. 3-24		24 "
Straits Settlements, Singapore	Jan. 20-Feb. 3		11 "
Geneva, Switzerland	Feb. 14-24	1 case.	

Yellow Fever.

Santos, Brazil	Feb. 8-16	12 cases.	6 deaths.
Havana, Cuba	Mar. 3-10		1 death.

Cholera.

Bombay, India	Feb. 6-13		2 deaths.

Plague—Insular Possessions United States.

Honolulu, Hawaii	Feb. 24-Mar. 2	2 cases.	2 deaths.

Plague—Foreign.

Bombay, India	Feb. 6-13		570 deaths.
Formosa, Japan	Jan. 1-Feb. 5	75 cases.	43 "

The Eastern Medical Society held its annual dinner at the St. Denis Hotel on Friday evening, March 23d.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 10 to March 24, 1900:*

Carr, Lawrence C., Major and Surgeon, United States Volunteers, is appointed sanitary inspector of Santiago, *vice* Church, James R., First Lieutenant and Assistant Surgeon, United States Army, relieved.

Delgado, José M., Acting Assistant Surgeon, United States Army, will take station in the city of Puerto Principe, Cuba, where he will take charge of hospitals and charities.

Flagg, Charles E. B., Captain and Assistant Surgeon, United States Army, is assigned to duty at the United States General Hospital, Presidio of San Francisco.

Friedman, Samuel, Acting Assistant Surgeon, United States Army, will report for temporary duty at the United States General Hospital, Presidio of San Francisco.

Manly, Clarence J., First Lieutenant and Assistant Surgeon, United States Army, will report to the commanding general, Department of California, for duty with troops on the first available transport leaving for Manila, and, on arrival, will report to the commanding general.

Mendoza, F. F., Acting Assistant Surgeon, United States Army, will proceed to Puerto Padre for duty, relieving Maura, F. R., Acting Assistant Surgeon, United States Army.

Penrose, George H., Major and Surgeon, United States Volunteers, is relieved from duty with the Third Brigade, Second Division, and will report in person at Calamba, Luzon, for the purpose of establishing a base hospital at that place.

Reilly, John J., Acting Assistant Surgeon, United States Army, will report for duty with troops on the first available transport leaving San Francisco for Manila, and, on arrival, will report to the commanding general.

Skinner, George A., First Lieutenant and Assistant Surgeon, United States Army, will report for temporary duty at the United States General Hospital, Presidio of San Francisco, awaiting transportation to the Philippine Islands.

Smith, Bat, Acting Assistant Surgeon, United States Army, is assigned to command the yellow-fever hospital at Santiago, relieving Mendoza, F. F., Acting Assistant Surgeon, United States Army. The latter will remain on duty until further orders.

Southall, Edward A., Acting Assistant Surgeon, United States Army, is assigned to duty at the United States General Hospital, Presidio of San Francisco.

White, George R., Acting Assistant Surgeon, United States Army, is relieved from duty with the Third Brigade, Second Division, and will report in person at Calamba, Luzon, for the purpose of establishing a base hospital at that place.

Wolfe, Edwin P., First Lieutenant and Assistant Surgeon, United States Army, is granted leave of absence for one month, with authority to go beyond the limits of the division.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Two Weeks ending March 24, 1900:*

Benton, F. L., Assistant Surgeon. Detached from the Naval Hospital, Yokohama, Japan, and ordered to the Naval Hospital, Cavite, Philippine Islands.

Brownell, C. D., Passed Assistant Surgeon. Detached from the *Solace* and ordered home to await orders.

Diehl, O., Surgeon. Detached from the naval recruiting rendezvous, Philadelphia, and ordered home to await orders.

Eakins, O. M., Assistant Surgeon. Detached from the Naval Academy and ordered to the *Buffalo*.

Gatewood, J. D., Surgeon. Detached from the *Lancaster* and ordered to the Bureau of Medicine and Surgery, Navy Department.

Grove, W. B., Assistant Surgeon. Detached from the *Brooklyn* and ordered to the *Scindia*.

Haas, H. H., Assistant Surgeon. Detached from the *Baltimore* and ordered to the *Don Juan de Austria*.

Johnson, M. K., Assistant Surgeon. Detached from the *Nashville* and ordered to the *Celtic*.

Kennedy, J. T., Assistant Surgeon. Ordered to the *Independence*.

Lippitt, T. M., Assistant Surgeon. Detached from the *Baltimore* and ordered to such other duty on the Asiatic station as the commander-in-chief may assign.

Lowndes, C. H. T., Passed Assistant Surgeon. Ordered to the Naval Academy.

McCullough, F. E., Assistant Surgeon. Order of March 8th, detaching him from the *Nero* and ordering him to the *Independence*, is revoked. Detached from the *Nero* and ordered to the *Philadelphia* immediately.

Stepp, J., Assistant Surgeon. Detached from the Naval Hospital, Mare Island, California, and ordered to the *Solace*.

Stokes, C. F., Passed Assistant Surgeon. Detached from the Naval Hospital, New York, and ordered to the *Buffalo*.

Spear, R., Assistant Surgeon. Detached from the *Constellation* and ordered to the Naval Hospital, New York.

Taylor, J. S., Assistant Surgeon. Ordered to the *New Orleans*.

Thompson, E., Assistant Surgeon. Detached from the *Celtic* and ordered to the *Nashville*.

Ward, B. R., Passed Assistant Surgeon. Detached from the *Independence* and ordered to the Naval Hospital, Mare Island, California.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the United States Marine-Hospital Service for the Seven Days ending March 15, 1900:*

Cumming, H. S., Passed Assistant Surgeon. To proceed to Millboro, Virginia, for special temporary duty, then to rejoin station.

Geddings, H. D., Passed Assistant Surgeon. To assume temporary charge of the Hygienic Laboratory.

Goldsborough, B. W., Acting Assistant Surgeon. Granted leave of absence for fifteen days from March 15th.

Southard, F. A., Hospital Steward. Relieved from duty at the port of New York and directed to proceed to Baltimore and report to the medical officer in command for duty and assignment to quarters.

Warhanik, C. A., Hospital Steward. To proceed to New York upon being relieved from duty at Baltimore, and report to the medical officer in command for duty and assignment to quarters.

Wille, C. W., Assistant Surgeon. To proceed to Cape Charles Quarantine Station, upon being relieved from duty at Boston, and report to the medical officer in command for duty and assignment to quarters.

Young, G. B., Passed Assistant Surgeon. Granted leave of absence for four days from March 20th.

The Buffalo Academy of Medicine.—At the last regular meeting of the Section in Obstetrics, on Tuesday evening, the 27th inst., the following papers were to be read: The Early Days of Ovariotomy; Reminiscences of McDowell, Peaslee, and Others, by Dr. Matthew D. Mann, and The Insanity of Childhood, by Dr. Helene Kuhlmann.

Society Meetings for the Coming Week:

Monday, *April 2d:* New York Academy of Sciences (Section in Biology); German Medical Society of the City of New York; Morrisania Medical Society, New York (private); Brooklyn Anatomical and Surgical Society (private); Corning, New York, Academy of Medicine; Utica, New York, Medical Library Association; Boston Society for Medical Observation; St. Albans, Vermont, Medical Association (annual); Providence, Rhode Island, Medical Association; Hartford, Connecticut, Medical Society; South Pittsburgh, Pennsylvania, Medical Society; Chicago Medical Society (annual).

Tuesday, *April 3d:* New York Neurological Society; Buffalo Academy of Medicine (Section in Surgery); Elmira, New York, Academy of Medicine; Ogdensburgh, New York, Medical Association; Syracuse, New York, Academy of Medicine; Medical Societies of the Counties of Broome (quarterly) and Niagara (quarterly), New York; Essex (annual—Newark), Hudson (Jersey City), and Union (annual—Elizabeth), New Jersey, County Medical Societies; Androscoggin, Maine, County Medical Association (Lewiston); Chittenden, Vermont, County Medical Society; Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

Wednesday, *April 4th:* New York Academy of Medicine (Section in Public Health); Society of Alumni of Bellevue Hospital; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond, New York (New Brighton); Penobscot, Maine, County Medical Society (Bangor); Bridgeport, Connecticut, Medical Association.

Thursday, *April 5th:* New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, New York; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; Washington, Vermont, County Medical Society; United States Naval Medical Society (Washington); Medical Society of City Hospital Alumni, St. Louis; Atlanta Society of Medicine.

Friday, *April 6th:* Practitioners' Society of New York (private); Clinical Society of the New York Post-graduate Medical School and Hospital; Baltimore Clinical Society.

Saturday, *April 7th:* Manhattan Medical and Surgical Society, New York (private); Miller's River, Massachusetts, Medical Society.

Births, Marriages, and Deaths.

Born.

Cumming.—In Richmond, Virginia, on Saturday, March 10th, to Dr. and Mrs. Hugh S. Cumming, a son.

Quinton.—At Guanalay Barracks, Cuba, on Tuesday, January 30th, to Dr. and Mrs. Quinton, a daughter.

Married.

Catherwood—Fisk.—In New York, on Tuesday, March 27th Dr. Clinton H. Catherwood and Miss Maude Fisk.

Died.

Ballard.—In Marblehead, Massachusetts, on Monday, March 19th, Dr. Peter J. Ballard, aged eighty-six years.

Devron.—In New Orleans, on Saturday, March 24th, Dr. Alexander John Gustavus Devron, in the sixty-fifth year of his age.

Harris.—In White Plains, New York, Dr. Richard Harris, in the seventy-third year of his age.

Kuhn.—In Harrison, New Jersey, on Thursday, March 22d, Dr. John E. Kuhn.

Layman. — In Maysville, Alabama, on Friday, March 23d, Dr. J. M. Layman.

Morse.—In Wareham, Massachusetts, on Monday, March 12th, Dorothy, infant daughter of Dr. Charles E. Morse.

Overton.—In Sheepshead Bay, Long Island, on Sunday, March 25th, Rutherford M. Overton, only child of Dr. H. R. Overton.

Vibbert.—In New York, on Monday, March 26th, Dr. William Welsh Vibbert, aged twenty-seven years.

Yandell.—In El Paso, Texas, on Friday, March 23d, Dr. William Yandell, in the fifty-seventh year of his age.

Pith of Current Literature.

The Journal of the American Medical Association, March 24, 1900.

Selection of Anæsthetic in Surgery. By Dr. John A. Wyeth.—A statement of Dr. Wyeth's views, based upon an experience of twenty-five years, and dealing only with the two well-known anæsthetics, chloroform and ether. Although at one period he had used ether exclusively for ten years, yet, at present, in about seventy-five per cent. of his operations, he employs chloroform either wholly or at some stage of the narcosis. His habit is invariably to inject beneath the skin a quarter of a grain of morphine with one one-hundred-and-fiftieth of a grain of atropine fifteen minutes before anæsthesia is commenced, to stimulate the heart and to allay the anxiety of the patient. He prefers the Esmarch screen. While the heart beats regularly, a rapid (100 to 120) or slow (50 to 60) pulse is not considered ominous by the writer; but a drop of one beat here and there, or a loss of force for two or three successive beats, is considered a signal to remove the screen and await developments. If the heart steadies, the anæsthetic is gone on with; if there occurs a sudden pallor of the face, especially about the lips, the chloroform is removed, and the operating table elevated to the Trendelenburg posture. Ether is then substituted, if the operator is satisfied that the heart is showing any resentment to the effect of chloroform. He always desists from chloroform narcosis when the pupil is found suddenly and widely dilated. He believes in the free admixture of air with the chloroform vapor, and takes from fifteen to twenty minutes to obtain complete narcosis.

For the administration of ether he prefers the

Ormsby inhaler, and has found that with it the patient comes out of the narcosis more rapidly and with less vomiting and irritating after-effects on the kidneys and other organs than by the employment of any of the open methods of inhalation. In the hands of a tyro ether is safter than chloroform, without regard to the condition of the patient. In all operations within the abdominal cavity chloroform is preferable, as also in the class of patients known as "chronic alcohols." He believes, though, that for children ether is the safer anæsthetic.

The Amount of the Anæsthetic. By Dr. Thomas L. Bennett.—The necessary amount of a given anæsthetic depends on (1) the requirements of the particular patient; (2) the requirements of the particular operation; (3) the method of administration; (4) the administrator. The smallest amount of the anæsthetic compatible with quiet, relaxation, and freedom from reflex manifestations during the operation will give the patient the least possible after-disturbance attributable to the anæsthetic. As a rough estimate, the average amounts of the different anæsthetics necessary for one hour will be as follows: Ether, four to six ounces; chloroform, about one ounce; A. C. E., about three ounces.

Nitrous Oxide and its Modifications in Prolonged Surgical Operations. By Dr. S. Ormond Goldan.—The writer's conclusions are that, while nitrous oxide is not generally applicable, yet in cases where both chloroform and ether are undesirable, it is particularly indicated, and very rarely fails.

Experiences with Ethyl Chloride in General Anæsthesia. By Dr. James P. Tuttle.—A plea for the use of kelene as an adjuvant to ether anæsthesia. The author's experience in forty cases has been that when kelene was administered for about four minutes, and immediately followed by ether, complete anæsthesia was attained within the two minutes following. He believes that kelene will shortly supersede nitrous oxide, and much of the shock of general anæsthesia will be done away with.

What are the Most Efficient and Practical Means for Limiting the Prevalence and Fatality of Pulmonary Tuberculosis? By Dr. N. S. Davis.—He concludes that, as the bacillus or germ is already diffused over both hemispheres, our success in the combat with it depends mainly on the efficiency of our efforts to restore and maintain in their full vigor the natural conditions and processes of vital resistance to toxic agents possessed by the living body.

Prevention of Tuberculosis. By Dr. Homer M. Thomas.—Mention is made of the fact that in those countries where men are in close contact with animals (*e. g.*, Italy, where the same roof serves for the drayman and his horse) tuberculosis is most prevalent. The danger of infection from pet animals is strongly pointed out. The expulsion of fine droplets of infectious sputum in coughing has given the disease to guinea-pigs. Other dangers are adverted to, and the erection of properly equipped sanitaria advocated. Suggestions as to the disposition of the sputum and to those who would avoid contracting the disease follow.

The Frequency of Rickets in Infancy in Boston and its Vicinity. By Dr. John Lovett Morse.—A statistical paper, followed by the conclusion that eighty per cent. of the poorer children in Boston under two years have rickets.

Mental Fatigue. By Mr. Edward Thorndike.

Thyreoid Feeding in Obesity. By Dr. A. W. Sherman.

Case of Double Congenital Luxation of the Hips: One replaced by Manipulation and the Other by Operation. By Dr. Gwilm G. Davis.

Progress in Bacteriology. By Dr. Edwin C. Baldwin.

Shoulder - humero - scapulo Articulation. By Dr. Thomas H. Manley.

Medical Record, March 24, 1900.

Non-malignant Gastric and Duodenal Ulcers; with Illustrative Cases. By Dr. Thomas E. Satterthwaite.—These ulcers are comparatively rare in this country, only five cases being found in 800 autopsies, whereas Brinton concludes from the results of 32,052 autopsies made in Europe that in five per cent. of all autopsies will they be found. About twice as many women are affected as men, and the average age in women is 27 as compared with 42 for men. Mechanical compressions, as by corsets, tight belts, or compressions of any kind, are among the causes. The symptoms are localized pain after eating, vomiting, hæmatemesis, or melæna, or both. Prognosis is doubtful. Cures may be found in fifty per cent. (Debove and Remond). The object of treatment should be (1) to remove immediate symptoms, (2) to cure the ulcer. For hæmatemesis: absolute rest; neither food nor liquid should enter the œsophagus. Ergot to control the hæmorrhage, followed perhaps by morphine in one-fourth-grain doses. In cases of collapse, transfusion with a decinormal salt solution should be made. Feeding by the bowel. Peptonized milk every three or four hours. No food likely to distend the stomach should be given. The stomach should not be washed out, nor the tube used in gastric ulcer. Operative measures have been frequently resorted to during the last few years, but as yet it is difficult to make a fair comparison between the medical and surgical results. Five cases follow.

On the Treatment of Fatty Heart. By Dr. Th. Schott.—The author believes that the balneological-gymnastic method in combination with the dietetic treatment is undoubtedly the agent which to-day is most relied upon in the therapeutics of fatty heart, and he is of the opinion that within recent years its prognosis has become much more favorable.

Round Ulcer of the Duodenum. By Dr. Percival R. Bolton.

The Prophylaxis and Treatment of Gonorrhœa by Methylene Blue. By Dr. Joseph Alan O'Neill.

Philadelphia Medical Journal, March 24, 1900.

A Preliminary Report on the Ætiology of Scarlatina. By Dr. R. H. B. Gradwohl.—Observations upon the *Diplococcus scarlatinæ.* The author regrets that he has had opportunities for investigating but seven cases of the disease, with a view to isolating the ætiologic micro-organism; but believes that the uniformity of the results obtained, and the results of inoculation experiments, entitle this micro-organism to the right of being called the specific ætiologic factor in scarlet fever. The results of his investigations are given in full.

Clinical Memoranda on Chronic Suppurative Otitis Media. A Clinical Lecture. By Dr. John F. Oaks.

Radiograph of a Bullet seen through Osseous Tissue, in Femoral Trochlea, Two Lines from Surface of Bone. By Dr. Charles Verge.

Case of Cæsarean Section. By Dr. George G. Hopkins and Dr. Earle E. Woolworth.

A Medico-legal Case in Alaska: Forcible Injection of Corrosive Poison with but Slight Gross Lesions. By Dr. Henry B. Fitts.

A Case of Addison's Disease, with Autopsy. By Dr. William Fitch Cheney.

Parotiditis complicating Croupous Pneumonia. By Dr. James Ely Talley.

The Ætiology and Pathology of Major Epilepsy. By Dr. William House.

Reflex Neurosis from Phimosis. By Dr. J. Orton Edie.

American Journal of Obstetrics and Diseases of Women and Children, March, 1900.

Extra-uterine Pregnancy, Early Tubal Rupture; Development of Fœtus to Term Free in the Peritoneal Cavity; Cœliotomy; Delivery of Living Child; Recovery of Mother. By Dr. Harry M. Lufkin.—Perhaps the most noteworthy feature of this very remarkable case was that the fœtus did not continue to be inclosed in the amnion, but lay free in the abdominal cavity, absolutely without an envelope of any kind. The placenta was attached to the broad ligament and to the upper part of the uterus posteriorly. The author argues very forcibly in favor of the view that the fœtus escaped directly from the Falloppian tube into the peritoneal cavity, and not between the folds of the broad ligament.

Round-ligament Ventrosuspension of the Uterus; a New Method. By Dr. D. Tod Gilliam.

Preliminary Note on an Operation for Suspension of the Uterus. By Dr. Robert T. Morris.

The Pernicious Nausea and Vomiting of Pregnancy, with the Report of a Case. By Dr. Edward P. Davis.

Report of a Case of Nephrectomy for Pyonephrosis due to Impaction of a Stone in the Ureter. By Dr. Charles P. Noble.

Some Notes on the Care of the Intestine during and after Abdominal Section. By Dr. L. Grant Baldwin.

The Clinical Significance of Developmental Duplications of the Uterus and Vagina. By Dr. Brooks H. Wells.—An abstract of this article was given in our issue for March 17th, on page 403.

Annals of Gynæcology and Pædiatry, February, 1900.

Supravaginal Hysteromyomectomy. By Dr. I. S. Stone.—Dr. Stone shows commendable conservatism; he would preserve the organ of gestation in cases in which its preservation is consistent with a good prospect of the patient's survival. Hence he would substitute for hysterectomy the removal of the tumor only, provided such an operation would not involve extensive mutilation of the uterus. He gives twelve brief clinical histories.

Intra-abdominal Adhesions. By Dr. A. L. Beahan.

Meddlesome Gynæcology. By Herman E. Hayd, M. D., M. R. C. S.—In this article, a paper read before the Buffalo Medical Club, the author draws a true picture of the "gynæcological tinkering" of the past, the period when intra-uterine applications were a matter of routine. The procedure of curetting, he insists, is really a surgical operation capable of affording excellent results when undertaken in suitable cases and properly performed. It should not be done without an anæsthetic or in the physician's office. He next deprecates the treatment of perineal lacerations in any other way than by an operation. He regards the fine faradaic coil as a specific in cases of ovarian pain and tenderness without impairment of uterine mobility and without thickening or induration in the parametrium. Galvanism has done more harm in the hands of the uninformed than it has done good when managed by such a man as Apostoli. The pessary, although troublesome and sometimes abominable, is often a very useful instrument in the hands of experienced men.

Oophorectomy for Gross Functional Nervous Diseases occurring during Menstruation. By Dr. D. C. Brockman.—This paper was read before the Western Surgical and Gynæcological Association. The author thinks we should sometimes depart from the dictum "Never remove healthy ovaries." He thinks the ovaries and Falloppian tubes should be removed in all cases of menstrual insanity, which affection, he maintains, does exist, the alienists and neurologists to the contrary notwithstanding. In cases of menstrual epilepsy or hystero-epilepsy, too, the same operation should be performed. By menstrual he means manifested only under the influence of menstruation. If the patient is free from decided neurotic heredity, he thinks, the prospect of a cure is good. He gives histories of four cases, and says quite frankly that the results were not perfect.

A Case of Cystic Teratoma Complicated with Hæmorrhage. By Dr. E. Hornibrook.

Tolerance of the Gravid Uterus, with a Case. By H. C. Young, M. D., D. D. S.

Exploration of the Abdomen as an Adjunct to Every Cœliotomy. By Dr. Howard A. Kelly.—Dr. Kelly's paper, of which this article is an abstract, was read before the Southern Surgical and Gynæcological Association. The author urges the procedure of thoroughly examining all the abdominal viscera in cases of abdominal section, which operation, he remarks, is most generally performed at a period in the patient's life when there is considerable probability of the coexistence of some other abdominal disease with the one for which the operation was undertaken. In making the exploration, he says, extreme care must be taken to maintain asepsis by thoroughly sterilizing the arm or, better still, by wearing a rubber glove with a long sleeve reaching as far as the elbow.

How to Prevent and How to Treat Ununited Fractures. By Dr. A. C. Bernays.—This article is an abstract of a paper of the author's read before the Western Surgical and Gynæcological Society. He emphasizes the necessity of absolute immobilization of the fragments to prevent failure of union, but adds that there are some cases of pseudarthrosis that are evidently due to "some germ or pathological condition of which we have no knowledge." He thinks that the ambulatory treatment of fractures of the lower limb, while often giving good results, is apt to be followed by delayed union or non-union, because of the failure to secure complete rest. The old rule that the joint above the fracture and the one below it should be included in the immobilizing apparatus is a good one and should always be observed. In any cutting operation for pseudarthrosis it is well to save all the fragments and chips of bone and place them between and around the refreshed ends of the fragments before the Esmarch bandage is removed.

Obstetrical Prophylaxis in Gynæcology. By Dr. James Clifton Edgar.

Notes on the X Ray; its Usefulness and Mistakes. By Dr. J. Rudis-Jicinsky.

Annals of Surgery, March, 1900.

Effects of Intracerebral and Subcutaneous Administration of Tetanic Antitoxine in Tetanus, as Observed in Nine Cases. By Dr. Robert Abbe.—Four cases were treated by subcutaneous and five by intracerebral injection. Of the former series, three died and one recovered; of the latter, three recovered and two died. The author compares Parke, Davis, & Co.'s serum with that furnished by the New York Board of Health, to the advantage of the former. He regards the antitoxic treatment as a valuable therapeutic adjunct, and the intracerebral method as a great advance. His cases do not sustain the common opinion that a long period of incubation is an absolute criterion of the probable severity. It is worthy of note that of the nine cases, five certainly, and possibly six, were results of shot wounds caused during Fourth-of-July celebrations.

A New Method of Suture in Operations for Inguinal and Other Forms of Hernia. By Dr. Leonard Freeman.—The author's method is a modification of the quilled suture. Needles threaded with long loops of silkworm gut or silver wire, and two stiff pieces of silvered wire long enough to reach the entire length of the inguinal canal (small probes answer the purpose well) are required. After the internal ring is exposed and the sac ligated and cut off or knotted upon itself one of the gut or wire loops is passed from without inward through the muscular tissue on the umbilical side of the ring, well back from the margin and fairly close to the exit of the spermatic cord, then through Poupart's ligament from within outward. A similar loop is inserted near the pubic limit of the opening. One or more intervening loops may be used if necessary. One of the stiff wires with its lower extremity bent upward so as to protrude through the external incision is now passed through the loops, which are tightened on it. The other wire, similarly bent, is laid between the free ends of the loops, which are firmly tied over it. The cord is dropped back into place, and the external oblique united, the upturned ends of wires protruding through the lower angle of the incision, while the free ends and the ends of loops are brought out through the incision between the stitches. In from ten days to two weeks the stiff wires may be removed, and the loops thus freed are also easily released. The advantages claimed are: 1. Simplicity and rapidity of execution. 2. Tension easily overcome. 3. Sutures can not cut through. 4. Reenforcement of Poupart's ligament by a bunch of muscular tissue. 5. Easy removal of sutures. The author has used this method three times with great satisfaction. It can be applied to umbilical or ventral hernia.

Fracture of the Neck of the Humerus with Dislocation of the Upper Fragment, with a Report of Three Cases Treated by Operation. By Dr. B. Farquhar Curtis.—The author discards entirely the ancient method by securing union of the fracture first, and some four to six weeks after the injury attempting reduction, and considers the four following methods: 1. Reduction by manipulation. 2. Production of a false joint. 3. Resection of the head of the humerus. 4. Open arthrotomy with reduction of the head. His conclusions are as follows: 1. In fracture of the upper end of the humerus with displacement of the upper fragment from the glenoid cavity, when proper attempts at simple reduction under general anæsthesia have failed, operative measures should be resorted to unless shock, other injuries, or extensive damage to the soft parts about the shoulder justify delay. A delay of from one to four weeks will not impair the result. 2. Anterior displacements require an anterior incision; subglenoid or posterior displacements require a posterior incision, preferably by Kocher's method. 3. The head should be restored to its place, if possible, and resection resorted to only when reduction is impossible or would require such extensive damage to the parts or such prolongation of the operation as to increase the dangers of wound infection or of shock. 4. Resection will probably give a better result in fracture of the anatomical neck than in that of the surgical, but reduction is to be preferred in both cases. 5. Asepsis is an indispensable requirement for a good functional result, and these operations must not be undertaken except under aseptic conditions. 6. Motion should be begun in the joint as soon as the wound has healed, in from ten to fourteen days after the operation.

Prolapsus of the Rectum in Children. By Dr. Charles Greene Cumston.

Report of Results Obtained in the Treatment of Ununited Fractures with the Parkhill Clamp. By Dr. Albert L. Bennett.—The author reports fourteen cases of ununited fracture among the Bantu negroes in West Africa operated upon by him with the aid of the Parkhill clamp, which he greatly eulogizes. In nine cases perfect union was obtained. Of the five failures, one patient removed the dressings to show his friends and became infected. Three were badly infected with syphilis and one with pulmonary tuberculosis. He indorses the steel pin used by Parkhill as a guide for drilling holes parallel, and recommends silver-plating the clamps, especially for humid climates.

A Case of Acute Osteomyelitis of the Femur with General Systemic Staphylococcus Aureus Infection Terminating in Recovery. By Dr. Albert Ashton Berg.—A child eight years of age fell and struck himself in the region of the left gluteal fold. On admission to Mount Sinai Hospital osteomyelitis of the left femur was found, which was followed by early blood infection. The patient was promptly put upon antistreptococcus serum, when it was subsequently found that infection, local and general, was due to *Staphylococcus aureus* and its toxines. No metastatic focus of suppuration followed, notwithstanding the nature of the infection. The author cites the experiments of Emmerich and Low proving that pyocyaneous enzymes are capable of neutralizing the effects of diphtheria toxines in illustration of possible similar results of antistreptococcus serum in staphylococcic infection. The organism was eliminated by the kidneys. The organism and its toxines affected the viscera, causing pericarditis, and acute degeneration of the kidneys, liver, and spleen.

Coccygeal Dermoid Fistula. By Dr. Robert T. Morris.—The author considers that the large number of cases of congenital defects in the coccygeal region, rarely dermoid cysts, more often fistulæ or funnel-formed depressions containing hairs and sebaceous material, suggest some embryonal defect. Possibly the tail of the embryo in undergoing involution leaves a portion of skin highly endowed with embryonal latent cells, and the skin developing more perfectly around the site of the embryonal tail encapsulates the remains of the structure in part or in whole, so that a coccygeal fistula is really an inverted tail. The author has had four cases of coccygeal fistula containing hair, of which one is recorded. Complete removal is essential to avoid recurrence. Cauterization is unsatisfactory.

Report of a Case of Recovery after Gastrectomy for Carcinoma. By Dr. John Bruce Harvie.—The author removed the stomach in a woman, aged forty-six, on May 15, 1899. The operation lasted one hour and five minutes. By August 15th the woman had gained twenty-one pounds. She left the hospital on June 25th after eating a dinner consisting of roast beef, mashed potatoes, a glass of milk, ice cream, and a small cup of coffee. She resumed household work on her return home. The author suggests the inspecting of all cases of suspicious character by exploratory opening, so as to insure better chance of success by early operation.

Two Cases of Cicatricial Stricture of the Œsophagus Treated by Gastrostomy, the "String" Method, and Permanent Dilatation by Elastic Tubes. By Dr. B. Farquhar Curtis.—A piece of rubber tubing a third of an inch in diameter had passed into it a piece of Chinese braided silk in which two large knots had been tied at a distance apart equal to twice the length of the tube. The knots and intervening silk being coiled in the tube, both ends of the latter were bound tightly round the silk beyond the knots, so that by tension on the silk the tube was greatly reduced in diameter. By way of the stomach opening and mouth the tube so stretched was drawn into the stricture, and the tension being relaxed the tube gradually expanded. It remained *in situ* about a week. The patient was fed through the fistula. Considerable dilatation ensued, the only discomfort being regurgitation of saliva.

Archives of Pædiatrics, March, 1900.

Dilatation of the Colon. By Dr. F. T. Stewart and Dr. Alfred Hand, Jr.—This paper was read before the Philadelphia Pædiatric Society. The authors report a case in which, they think, the morbid condition was congenital, and they remark that most observers believe that it is always so. All cases of chronic constipation with a persistently swollen abdomen, they say, should be scrutinized by the surgeon.

An Analytical Study of Certain of the Clinical Phenomena Observed in One Hundred and Twelve Consecutive Cases of Chorea. By Dr. John Lindsay Steven.

Two Cases of Idiopathic Hæmaturia. By Dr. T. J. Elterich.

Bulletin of Johns Hopkins Hospital, February, 1900.

Report upon an Expedition Sent by the Johns Hopkins University to Investigate the Prevalent Diseases in the Philippines. By Dr. Simon Flexner and Dr. Lewellys F. Barker.—The expedition sailed from Vancouver on March 29, 1899, arriving at Manila on May 4th. The military situation compelled it to confine its study of disease among the natives and American troops in Manila and at Cavite. A stay of one week was made in Japan, where pure and mixed examples of beri-beri were seen. In Hongkong the bubonic plague was studied. The diseases prevalent at Manila were divided into two groups, those affecting (*a*) natives and (*b*) Americans. Among the former (*a*) were: 1. Diseases of the scalp, frequent. 2. Dhobie itch. 3. Delhi boil, Biskra button, or *epidemische Buelenkrankheit;* a disease resembling, and probably identical with, Aleppo boil. 4. Small-pox, which was epidemic on the arrival of the American garrison, but had been practically stamped out by the energetic measures of Dr. Bournes, who had established a vaccine farm and practised general vaccination. 5. Leprosy, of which a definite focus existed in Luzon. 6. Tuberculosis, which was common. 7. Venereal diseases. Chancroids and gonorrhœa common, syphilis moderately so. Buboes were very common. 8. Beri-beri. Some two hundred cases developed in a few weeks, the mortality ranging from twenty to thirty per cent. In the latter group (*b*), enteric diseases played the chief part—viz., diarrhœa, dysentery, typhoid, and gastro-intestinal catarrh. A few cases of scarlet fever and diphtheria. Malarial fever was prevalent, but not serious, from May to July. Dysentery was responsible for the highest mortality. It was often complicated with hepatic abscess in the chronic cases and amœbæ were present. Acute cases rarely showed amœbæ and usually ended fatally in from twenty-four to seventy-two hours. The intestinal flora was studied with the result of establishing two groups—viz., those having affinity with the *Bacillus coli communis* and the *Bacillus typhosus* respectively. In malarial cases no quartan parasites were found, though typical tertian and æstivo-autumnal forms were. The number of deaths referable to malaria was small. There were a number of cases of tuberculosis among the American troops. Dengue, tropical ulcers, and wound infection were also present. The value of the first-aid package was highly commended by army surgeons. As to climate, extremes of temperature are not great, but the constant high temperature with a high degree of humidity is highly enervating. Americans need special precautions to keep in good health.

A Case of Multiple Gangrene in Malarial Fever. (With Illustrations.) By Dr. William Osler.—The author points out that there are three groups of cases of multiple gangrene:

1. *Raynaud's Disease.*—There have been previous well-marked vascular disturbances in the extremities (syncope, asphyxia, or hyperæmia), the gangrene is very often symmetrical, is usually slight in extent, and limited to the fingers or toes, more rarely to the ear tips or nose.

2. *Multiple Spontaneous Gangrene of Limbs.*—In young or middle-aged persons, without any obvious cause, massive gangrene of one, two, or three extremities occurs. Many illustrations of this are recorded in the literature.

3. *Multiple Spontaneous Gangrene in Association with the Acute Infections.*—In measles, typhoid fever, typhus fever, scarlet fever, diphtheria, and malaria, local gangrene may occur. There are multiple patches, not symmetrical, and the skin and subjacent tissues are more frequently affected than the extremities. While, of course, the phenomena of Raynaud's disease may occur as a sequence of any of the specific fevers, a large proportion of all the cases of local gangrene occurring during or after one of the fevers have nothing whatever to do with this affection.

The relationship between malarial fever and Raynaud's disease is believed to be very close. Many references are given to cases (a majority from French sources) by Barlow in his article in Allbutt's *System,* and more fully by Monro in his excellent monograph on the disease (Glasgow: James Maclehose & Son, 1899). Altogether, in the cases he has collected, there were only 8.3 per cent. with malarious antecedents. Dr. Osler has looked over the notes of cases of Raynaud's disease which he has seen in Baltimore, nine in number, and he does not find malaria to be related as an ætiological factor in any one of them, nor, so far as he knows, in our very large series of cases of malaria during the past ten years has there been a single instance of Raynaud's disease.

Dr. Osler next gives in detail a case of multiple gangrene occurring in a case of æstivo-autumnal malaria, of which the following is a clinical summary: Malaria when six years old; typhoid fever twice, the last attack four months before onset of present illness; illness in the middle of October, supposed to be influenza, but more probably malaria; on November 2d, onset of spots of gangrene in various parts; rapid extension; complexion muddy; spleen enlarged; blood showed very many æstivo-autumnal organisms; temperature slightly elevated at first, subsequently no fever; rapid recovery.

Benjamin Jesty: a Pre-Jennerian Vaccinator. By Thomas McCrae, M. B.—The author points out that Jesty, a farmer of Downshay in Dorset, England, performed vaccination on his wife and two sons from cow pock as a protective against small-pox in 1774, twenty-two years before Jenner's first vaccination. This does not detract from the honor due to Jenner, whose work was not only independent of Jesty's, but was the means of giving vaccination to the world, while Jesty's would have died with him as an isolated instance.

Hæmophilia in the Negro. By Dr. Walter R. Steiner.—The family history in this case shows the patient's maternal great-grandmother to have been a bleeder. She had eleven children, five of whom died young. The remaining six, four males and two females, were bleeders. The patient's mother was a bleeder, as were also her two brothers and one sister. The following facts are noted: 1. The fertility of bleeders' families. 2. A large percentage of bleeders die early. 3. Both males and females seem to have been bleeders, which is contrary to the usual opinion. 4. A preponderance of male bleeders is seen in two families. 5. The tendency was transmitted in each case through females.

Montreal Medical Journal, February, 1900.

Report upon Eighty-nine Cases of Appendicitis Treated in the Royal Victoria Hospital, Montreal, during the Year ending December 31, 1898. By Dr. E. L. Archibald.—Of the eighty-nine cases, seventy-three were operated upon. Three cases of abscess, diagnosticated as due to perforation of the appendix, are not included in the analysis, inasmuch as the abscess was merely incised and drained and the appendix not demonstrated. Sixteen cases were not submitted to operation. Of these, twelve were acute, subsiding within two or three days; three, recurrent; one a chronic abscess following perforation. The seventy operated on are classified as follows: Class I: Twenty-eight cases. The appendix is enlarged and often twisted, kinked, or strictured; the mucosa swollen; the walls thickened; there may be small submucosal hæmorrhages, innocuous concretions, or even slight ulceration; and there may be adhesions externally. Class II: Six Cases. The appendix, with or without the lesions of Class I, is distended with pus, the mucosa ulcerated, and the serosa and meso-appendix are inflamed. Class III: Four cases. The appendix is gangrenous, in whole or in large part, but without perforation. Class IV: Twenty-two cases. The appendix is perforated, and there is more or less localized peritonitis with abscess. Class V: Ten cases. There is general septic peritonitis, following perforation of the appendix, or following septic lymphangeitis from a non-perforated appendix.

"Of the eighty-nine cases, seventy-three were cured, two were improved, one was not improved, three were not treated, and ten died. The mortality is thus 11.2 per cent. Of the fatal cases, nine were of the general septic-peritonitis class and one was a suppurative mesenteric lymphadenitis subsequent to a chronic inflammation of the appendix of long standing. It is seen, therefore, that the mortality in all but the gravest type of appendicitis is nil; all the clean cases, and all the perforation cases with localized trouble, even where the localization was very slight and pus filled the whole right side and pelvis, recovered."

The Ætiology of the Nausea and Vomiting of Pregnancy. By Dr. David James Evans.—The author thus summarizes his conclusions: 1. There exists more or less of a rhythm in the paroxysms of nausea and vomiting in pregnancy. 2. There must also exist a rhythmical exciting cause for these paroxysms. 3. There is a rhythm in the contractions of the uterus which occur throughout pregnancy. 4. The essential exciting cause of the paroxysms of nausea and vomiting of pregnancy is frequently the physiological contraction of the muscular fibres of the uterus.

Clinical Notes. By Dr. Stanley S. Cornell.—The author records the case of a farmer, aged sixty-five years, who had been addicted for years to periodical sprees and promiscuous sexual intercourse, in whom the genito-urinary troubles were followed seven days after he was first seen by uræmic stupor, lasting five days. Seven days later polyarthritis and pericardial friction ensued, with mitral insufficiency. The former symptoms subsided after twelve days, but the last persisted. Three weeks later two small areas of pulmonary solidification were noted in the midaxillary region of either side. The patient improved until two months later, when the legs became œdematous and the mitral murmur was intensified. Three months later the patient was so much improved that he was able to get to work, but a few weeks later dyspnœa and palpitation set in and severe pain in the head, diagnosticated as an embolus or detached vegetation from the mitral valve lodged in the middle cerebral artery. A week afterward the patient died. The author submits the following propositions as grounds for considering all the manifestations as gonorrhœal: 1. The evident presence of pus in the urethra, as shown by the readiness with which it could be squeezed away by pressure upon the under surface of the penis. 2. The probability of the first days of irritability of the bladder being occupied in the development of the initial stage of a specific urethritis. 3. The time at which the orchitic developments took place. 4. The arthritic and cardiac phenomena. 5. The patient's known intimacy with his servant girl, who had been treated for gonorrhœa a few weeks before the onset of the patient's urethral and vesical symptoms. The case is important for two reasons: First, it unfolds a most interesting system of regular morbid developments; second, it illustrates the dangerous characters a clap may assume.

Other cases recorded are one of Death during Chloroform Anæsthesia; Tuberculous Osteomyelitis of Terminal Phalanx of Index Finger succeeded by Tuberculous Invasion of the Lungs, and a Case of Fatal Hæmatemesis.

A Case of Rupture of the Rectum; Operation; Recovery. By Dr. Frank R. England.

Medico-legal Cases. By Dr. Georges Villeneuve.

Two Cases of Auditory Peripheric Hallucinations. By Dr. E. P. Chagnon.

Notes from Practice in the Argentine Republic. By Dr. F. G. Corbin.—The author records three cases of maggots in the nose, the last patient throwing off some two hundred and fifty living and thirty dead maggots.

The treatment recommended is washing out with chloroform water, inhalations of chloroform, and the smelling of gum camphor. An infusion of albahaca, a native plant, is also recommended. Fatal cases, probably from meningitis, have been recorded. The author also records two cases of diaphragmatic hernia.

Surgical Gleanings from Abroad. By Dr. L. Coyteux Prevost.—This paper is the concluding one. The author records Paul Segond's conversion to the abdominal route after a visit to the United States to prove the superiority of the vaginal method, notwithstanding that his proficiency in that operation amazed all who saw him perform it.

The Lancet, March 17, 1900.

The Surgery of the Stomach. By Dr. A. Mayo Robson.—In the second of the Hunterian Lectures the writer begins by discussing the subject of perforation of the stomach. In acute perforation the diagnosis is usually easy, but the symptoms are very acute, and operation, to be successful, must be undertaken at the earliest possible moment. In subacute perforation the symptoms are less definite and the diagnosis is more difficult. The condition may become acute after a few days and inflammation progress very rapidly. On the other hand, the escaping fluid may become localized by adhesions and an abscess or a fistula be formed. In subacute cases, with abscess formation, the exploring syringe may afford valuable indications. A table of four hundred and twenty-nine operations is given. These were collected from various sources and gave a mortality of fifty-five per cent. In operating, every precaution should be taken against the occurrence of shock, which is frequent and often fatal.

The perforation should first be discovered and closed with Lembert sutures. Careful irrigation should then be performed and thorough drainage instituted. As an irrigation fluid the writer prefers normal saline solution at a temperature of 105° F.

In chronic or subacute perforation the treatment is usually that of subdiaphragmatic abscess. These abscesses rarely perforate into the general peritoneal cavity, but usually extend upward into the thorax. Details are given for incisions, etc., according to the location of the abscess. The diagnosis of gastric fistula, except where it opens externally, can only be made after opening the abdomen. In simple internal fistula the two openings are to be closed; where the fistula is malignant, the advisability of gastrectomy and enterectomy should be considered. In adhesions of the stomach and pylorus to neighboring organs, due to perigastritis, the writer has often given great relief to the distressing symptoms by opening the abdomen and separating the adhesions, ligaturing those that are too large to be broken down with the fingers. In cases of hour-glass contraction of the stomach, due to cicatricial contraction of a chronic ulcer, the writer advocates the performance of gastroplasty, the longitudinal incision being stitched up over a large decalcified bone bobbin. Gastro-gastrostomy, or the making of an artificial opening between the two cavities of the stomach, is also recommended.

Dilatation of the stomach should at first be treated medically. Where such treatment is of no avail, one of several operations may be performed. Pylorodiosis, or dilatation of the pylorus (Loreta), is not recommended. Where there is simple stenosis of the pylorus without much hypertrophy, pyloroplasty is recommended. This consists in opening the pylorus longitudinally and closing the incision transversely. Where there is much hypertrophy, pylorectomy or gastro-enterostomy would be the better operation. In cancer of the pylorus gastro-enterostomy is the only operation which will afford relief. In acute dilatation of the stomach surgical intervention is of little avail. In the performance of gastro-enterostomy the writer prefers his bone bobbin to simple suture, Senn's plates, or Murphy's button. He gives a table of the results of 1,978 cases of gastro-enterostomy collected from various sources, in which the mortality was 36.4 per cent. In eight cases in his private practice he had six recoveries.

Mention is made of the occurrence of tetany in cases of dilatation of the stomach, and the writer reports three cases in which he performed pyloroplasty. All recovered and were relieved of the tetany. He concludes from his observations that the causation of tetany is twofold: (*a*) Self-intoxication from the dilated stomach, and (*b*) reflex action caused by painful contractions of the pylorus.

Rabies. By Dr. J. R. Bradford.—In this, the concluding lecture on this subject, the writer deals with the question of diagnosis of rabies in man and animals.

The Treatment of Rheumatism. By Dr. William Ewart.—(See abstract of the *British Medical Journal* for March 17th in this number of the *Journal.*)

Some Remarks on External Urethrotomy. By Dr. Reginald Harrison.—After reporting the case of a man on whom he performed this operation one year previously, the writer states that the operation is especially applicable to the following classes of cases: 1. Resilient and rapidly contractile strictures in the deep urethra. 2. In cases where the wound of internal urethrotomy would be out of proportion to the natural drainage possibilities of the urethra. 3. Cases of stricture complicated with urinary fistula and sinuses. 4. In cases of stricture with extravasation of urine. In the performance of external urethrotomy he attaches great importance to the following points: 1. The use of a guide. 2. The utility of internal urethrotomy as an immediate preliminary to the operation of external urethrotomy. 3. The more efficient provision for drainage.

The Medical Examination of Personal Injury Claims. By Dr. A. Benthall.—The writer discusses the above question and lays down certain broad general rules by which the medical examiner should always be guided.

The British Medical Journal, March 17, 1900.

Remarks on the Holmgren Wool Test. By Dr. T. H. Bickerton.—The writer reports the case of an officer of a steamer who was unable to distinguish between white and green lights, and who narrowly escaped running down another vessel. The man had previously passed the Holmgren test of matching colored wools, and stood the examination a second time, passing successfully. The writer also calls attention to those individuals who can distinguish different colors when close at hand, but not at a distance of half a mile or more. He concludes that this official test is inadequate to exclude all unfit persons from serving in the mercantile marine.

The Practical Applications of Largin in Diseases of the Eye. By Dr. S. Stephenson.—The writer reports the results of his use of largin as a substitute for nitrate of silver in superficial eye disorders. Used in the form of a ten-per-cent. solution, largin gave brilliant results in twenty cases of acute contagious ophthalmia due to the Koch-Weeks bacillus, rapid cure following its use. In gonorrhœal ophthalmia, on the other hand, largin proved distinctly inferior to nitrate of silver. It is much less painful than nitrate of silver, but if used for any length of time it causes an indelible light-brown staining of the palpebral conjunctivæ.

Detachment of Corneal Epithelium. By Dr. J. A. Menzies.—The writer reports a case of detachment of the corneal epithelium due to injury from a cricket ball five years previously. The cornea was scraped under cocaine and a perfect cure resulted.

The Hunterian Lectures on the Surgery of the Stomach. By Dr. A. W. M. Robson.—See abstract of the *Lancet* of March 17th, in this number of the *Journal.*

The Treatment of Rheumatism, with Special Reference to Prophylaxis and to Cardiac Complications. By Dr. William Ewart.—After speaking of the prevalence of rheumatism and the various theories as to its causation, the writer discusses the subject as follows: Prophylaxis. Nothing special can be done in the way of general prophylaxis further than attention to the laws of sanitation, special attention being paid to "desiccation of the surface soil." As regards individuals, the suggestion is made that the so-called rheumatic tonsil be recognized, and that it be determined whether removal of the tonsils in such cases wards off the disease. Doubt is cast upon the wisdom of the routine administration of salicylates in all cases threatened with the disease. The varieties of acute rheumatism are classified clinically as follows: (*a*) Monarthritis. (*b*) Symmetrical rheumatoid arthritis. (*c*) Non-symmetrical or erratic rheumatic polyarthritis. (*d*) "Symmetrical rheumatism," acute and subacute. The salicylates are found to control the hyperæmic and more ephemeral arthritis rather than that associated with fibroid nodules and warty valvulitis. After stating that the cardiac complications of rheumatism have become more frequent under the salicylate treatment, the writer takes up the question as to whether salicylates should be given alone or with an alkali, and inclines to the latter view. The failure of the salicylates to benefit cardiac rheumatism may be due to the different state of affairs in the heart, which is in constant motion, and whose tissues are so much more vulnerable and delicate than those of the joints.

In the acute attack absolute rest in bed and careful graduation of resumed activity should be rigid rules. Alkalies should never be omitted from the treatment, and the citrate of potassium is preferred to the bicarbonate. The iodides are sometimes of service. Where there is a tendency to localization, drugs are usually of no service, and local treatment must be instituted (splints, elevation, leeches, blisters, etc.). The diet should at first be very light, and in those cases where a milk diet does not agree with the patient the addition of fifteen grains of salt to the half pint of milk will often meet with success. On the whole, a temporary vegetarian diet is indicated.

Australasian Medical Gazette, January 20, 1900.

Presidential Address. By Dr. David Hardie.—An address delivered before the Medical Society of Queensland.

Nephrectomy during Pregnancy. Recovery. Normal Delivery at Term. By Dr. L. W. Bickle.

Some Notes on Medical Matters in England. By Dr. G. E. Rennie.

Report on a Case of Laryngectomy. By Dr. G. T. Hawkins.

Two Cases of Eclampsia followed by Jaundice. By Dr. R. E. Harrold.

Notes of a Case of Traumatic Tetanus treated by Injections of Serum (Intravenous and Subcutaneous) and Chloral. Recovery. By Dr. T. R. H. Willis.—The writer reports a case of tetanus in a boy aged thirteen. In playing football the boy rubbed the scab from an old abrasion, and the wound became infected. After administering chloral with no effect, forty cubic centimetres of antitetanic serum were injected into the median basilic vein on the fourth day of the disease. On the fifth day ten cubic centimetres of the serum were given (subcutaneous); on the sixth day, forty cubic centimetres (intravenous); on the tenth day, forty cubic centimetres (intravenous); on the twelfth day, twenty cubic centimetres; on the thirteenth day, forty cubic centimetres, and on the fourteenth day, ten cubic centimetres; the last three injections being given subcutaneously. The case was a very severe one, with marked trismus, convulsions, and opisthotonus. The respiratory muscles were at one time involved. Chloral and morphine were used throughout. The first four doses of serum were obtained from the Pasteur Institute; the last two from the British Institute of Preventive Medicine. The writer is not satisfied that recovery was due solely to the use of the antitetanic serum.

Decay of the Teeth from the General Practitioner's Point of View. By Dr. P. W. Hislop.

The Tepid-bath Treatment of Typhoid Fever. By Dr. E. Hirschfeld.

A Case of Dermatitis Venenata. By Dr. W. J. Munro.—The writer reports a case of severe and extensive dermatitis due to the application of ordinary ivy leaves to the feet for the relief of "corns."

Labor Obstructed by an Ovarian Tumor Incarcerated in the Pelvis. Cæsarean Section. Recovery. By Dr. F. Barrington.

Preventive Treatment in Diseases of Women. By Dr. H. R. Cope.

Some Therapeutics Analyzed. By Dr. John MacPherson.

Emphasizing a Few Points in the Treatment of Phthisis at Nordrach. By Dr. E. Robison.—This is a condensed summary of the routine treatment for phthisis at the sanatorium at Nordrach-Coloine, Black Forest.

Case of Chronic Bright's Disease with Marked Dropsy. By Dr. T. L. Anderson.—The writer reports a case of the above affection in which it was necessary to tap the pleural and abdominal cavities several times, large quantities of fluid being withdrawn.

A Case of Multiple Birth (Quadruplets). By Dr. H. Higham Wigg.—The writer reports a case of quadruplets in a multipara aged thirty-one. All the children died within three days after birth.

La Presse médicale, March 7, 1900.

Histological Diagnosis of Hydrophobia. By M. Van Gehuchten and M. Nelis.—The authors describe the lesions found by Babes, Schaffer, Popoff, and others, and, while they have discovered the same pathological changes, they decide that they are the secondary lesions of the disease, of no practical importance. In several cases of rabies in dogs and rabbits, and in two cases of human rabies, Van Gehuchten and Nelis found everywhere in the nervous system a vascular dilatation with an engorgement of red blood cells; in one of the human subjects they found a general thrombosis of the small veins and an excessive perivascular infiltration with the formation of a thick sheath of hyaloid material around the vessels. These vascular changes are not, however, the characteristic lesions of the disease, but it is the peripheral cerebro-spinal and sympathetic ganglia that the virus of rabies elects for its harmful action. These changes consist mainly in a great increase of cells of the endothelial capsule with a destruction of more or less of the cells. In the cerebro-spinal ganglia of an animal dead of rabies it can be seen that a considerable number of the nerve cells have disappeared and have been replaced by a mass of small round cells, forming cellular nodules more or less clearly separated from the adjacent tissues. The ganglion seems to be made up of a new tissue of small cells closely crowded against each other. This lesion is characteristic in all animals which have died of hydrophobia. The authors proceed to prove the specificity of these pathological changes by quoting a number of convincing experiments. The technics of their method of preparation is also described.

Habit in the Determination of Bacterial Localizations.—M. F. Benzançon and M. M. Labbé state that bacteria which have inhabited a certain tissue and have produced pathological changes in it have, by virtue of this fact, acquired a tendency to localize again in similar tissue. They cite epidemic angina, cerebro-spinal meningitis, broncho-pneumonia, and otitis as examples of this habit. The authors conclude an experimental evidence that bacteria, such as the staphylococcus, the streptococcus, and the colon bacillus, which can evoke various lesions in different tissues, can acquire in certain cases, owing to their residence in certain anatomical structures, a tendency to infect similar tissues *de novo* when inoculated and to reproduce lesions analogous to the primary one. A staphylococcus, under certain conditions, produced exclusively arthritic changes; and if it were not known that other germs can evoke the same lesions, this staphylococcus might be termed a specific one for arthritis. This the authors deny, however, claiming that this was one of the errors of the early bacteriologists at once to attribute specific properties to germs under similar conditions. But this is distinct from the tendency of certain bacteria to inhabit certain tissues of the body, this tendency increasing from generation to generation, as is shown by the preference of Eberth's bacillus and the cholera bacillus for the intestinal canal, of the bacillus of the plague for the lymphatic system, and of the pneumococcus for the lung.

Archives de médecine des enfants, March, 1900.

Malignant Tumors of the Bladder in Children. By Professor Luigi Concetti.

Streptococcus Meningo-encephalitis Proving Fatal in the Second Week of a Whooping-cough. By Dr. H. Audeoud.

Influenzal Bronchopneumonia with Thermic Inversion. By Dr. Faraggi.

Archiv für Kinderheilkunde, xxviii, 3, 4, 1900.

On the Casuistics of Spasmus Nutans. By Dr. Ausch.

Saturnine Encephalopathy due to the Use of Hebra's Ointment in a Child Thirteen Months Old. Death. With Remarks on Eclampsia. By Dr. Hahn.—In this case the child had eczema of the scalp and face, and it was treated with dressings of Hebra's ointment (ten parts of litharge to forty parts of olive oil). The child's mother seems to have been rather lavish in the use of the ointment and careless as to precautions against the child's scratching its head and then sucking its fingers. Convulsive attacks set in finally, and the child died. The necropsy showed hydrocephaloid of a light grade and chronic intestinal catarrh.

On the Symptomatology of Cerebellar Affections in Early Childhood. By Dr. Gustav Hahn.—The author deals chiefly with rolling of the head from side to side, a symptom mentioned so long ago as in 1834 by Andral as having occurred in the case of a child whose death was found to have been due to a cyst filled with concretions situated in the cerebellum. Hahn relates a case of tuberculous cerebellar meningitis in which the symptom was observed, and cites others.

On the Relation between the Establishment of Menstruation and Slight Albuminuria. By Dr. R. W. Raudnitz.

Cases of Accidental Cardiac Murmur in the Early Years of Life. By Professor von Starck.

On the Diagnosis of Congenital Malformations of the Heart. By Professor von Starck.

From the Municipal Hospital in Hagenau i. E. By Dr. Fritz Gernsheim.—The author relates a case of the lodgment of a cherry stone in the left primary bronchus in which, after unsuccessful attempts to extract the foreign body through the larynx, tracheotomy was performed and an effort made to dislodge it by means of a wire loop passed through the wound. This, too, failed, but a fit of vomiting came on and the stone was driven up into the larynx, whence it was removed through the tracheal wound.

Contributions from the Children's Poliklinik in Hamburg. By Dr. Carl Stamm.—The author reports a case of acute idiopathic thyreoiditis, one of congenital laryngeal stridor, and one of tuberculous peritonitis cured by laparotomy.

The English Disease and its Independence of the Relative Humidity of the Air. By Dr. W. P. Shukowsky.

The Status of Children Born Prematurely in Lying-in Hospitals. By Dr. Ernst Deutsch.

Wiener medizinische Blätter, March 1, 1900.

The Care and Treatment of Prostatic Ailments. (Continued.)—Dr. Ferdinand Kornfeld advises, further, careful attention to the bowels to avoid straining at stool, by enemata, the gentler laxatives, and abdominal massage. Liquors are to be interdicted, although a little claret may be allowed. In case of an accompanying cystitis or renal complications a strict milk diet is to be enforced.

The Treatment of Pernicious Vomiting of Pregnancy with Cocaine. (Conclusion.)—Dr. P. Neustube says that the cause of continuous vomiting in gravid women is due to a temporary irritation of the vomiting centre in the medulla oblongata. This irritability is still further localized in the cerebellum in the psychical centre, which is highly developed in women. Cocaine acts upon these centres and is likewise a local anæsthetic of the mucous membrane of the mouth, throat, and stomach. After the first stage of excitement due to its use it is sedative, and hence of value in the condition under discussion. The author gives ten drops of a fifty-per-cent. solution, repeated in an hour, and again in three hours, if necessary; for the next few days five or six drops are given three times daily, and this is continued until the vomiting ceases. Simultaneously, tampons of a two-per-cent. cocaine solution or ointment are placed against the cervix, internally cracked ice is administered, and a mustard paste is placed over the stomach.

Wiener medizinische Blätter, March 8, 1900.

The Indications for Milk Diet in Albuminuria. Dr. Victor Scheiber says that in cases of "functional albuminuria," as in the early stage of gout or in lithiasis, at the time of puberty, menstrual or digestive albuminuria, an exclusive milk diet evokes no other result than great weakness and sometimes an intense degree of anæmia, without causing a disappearance of the albumin. The same cases improved under a mixed diet in combination with some water cure, the albumin disappearing, and the general nutrition changing for the better. (To be continued.)

The Care and Treatment of Prostatic Ailments.—Dr. F. Kornfeld concludes his paper by advising the most scrupulous care in cases in which urosepsis arises, which can usually be referred to renal involvement. The thirst and the vomiting are to be especially cared for, and warm Sitz baths and the perineal application of leeches will frequently cause a subsidence of the intense pelvic and prostatic congestion so as to allow of spontaneous urination or of catheterization. He speaks of the care which must be given to the catheter when it is left in the hands of the patient, and says that bladder irrigations will often prove useful in emptying a bladder of residual urine when a catheter of small size is used. Cases of beginning prostatic hypertrophy may be damaged more than benefited by too vigorous treatment. Acute prostatitis is to be treated by rectal apparatus (Arzberger's) with hot or cold water. Prostatic abscesses following gonorrhœa sometimes open spontaneously, but deserve careful examination and surgical treatment as soon as the diagnosis is established. They may lead to the most serious consequences. Chronic prostatitis is of frequent occurrence, and is to be treated by appropriate hygienic and dietetic measures, sounds, baths, sea baths, and cooling apparatus.

Deutsche Aerzte-Zeitung, March 1, 1900.

On the Prevention of Pulmonary Tuberculosis. By Dr. G. Krönig.—The author thinks too little attention has been paid to the danger of introducing the tubercle bacillus into dwellings by persons entering them without freeing their shoes from the material adhering to them from the filth of the streets. In particular, he urges some curtailment of the length of women's gowns. Those worn at present sweep up expectorated matter from the pavement and deposit it on the carpets, where it dries and is almost sure to be disseminated through the house in a powdery form. Another source of danger, one which he thinks has not before been pointed out, lies in table napkins. He mentions having observed great carelessness in the disposition of the napkins in a much-frequented hotel in a Bavarian health resort. A pile of them is sprinkled with water, and then they are carefully smoothed and folded, presumably for further use before being subjected to an adequate laundry process. He recommends the use of paper napkins. He lays stress upon the necessity of an early diagnosis of a tuberculous invasion, and regrets the fact that the young physician of the present day knows more about staining bacilli than about examining the chest.

Clinical Experiences with Oxycamphor (Oxaphore). By Dr. Franz Meyer.—Oxycamphor is an oxidation product of camphor discovered several years ago by Dr. O. Manasse, of Munich, who was in search of a soluble derivative differing as little as possible from camphor in chemical composition. Such a compound is oxycamphor. In 1896 it was particularly recommended by Ewald as a remedy for cardiac dyspnœa. A fifty-per-cent. alcoholic solution (oxaphore) was recommended by Rumpel, of Hamburg, and it is now furnished in that form by the Höchst Dye Works. It is given in single doses of from seven to fifteen grains, in daily amounts of from thirty to forty-five grains. The author uses the following formula:

℞ Oxaphore	10	parts;
Sherry wine	50	"
Syrup	20	"
Distilled water	150	"

M. To be shaken before being taken.

The author has used the drug in thirty-four cases of dyspnœa, depending on phthisis in ten cases, on pulmonary emphysema in five, on bronchial asthma in one, on pulmonary emphysema with influenza in one, on lobar pneumonia in one, on pulmonary embolism and infarction in one, on plastic pericarditis in three, on cardiac malformations in five, on myocarditis in one, and on chronic nephritis with Cheyne-Stokes respiration in five. He gives brief notes of twelve of these cases, and remarks that in some of them the dyspnœa was wholly overcome, in some it was mitigated, and in others it was not influenced at all. This variation of results did not seem to bear any definite relation to the cause of the dyspnœa.

On the Formation of Inguinal Hernia. (Continued.)—By Dr. Graser.

Die medicinische Woche, March 12, 1900.

The Pathology and Treatment of Chlorosis.—Dr. J. Müller defines chlorosis as a disease confined entirely to females, the cardinal symptom of which is a diminution of hæmoglobin, which bears no relation to the diminished number of red blood cells. He regards as fundamental causes of chlorosis sexual irritation and sexual longing; and, while he accepts Bunge's view that chlorosis results from the withdrawal of iron from the blood for possible maternal use—especially in the lacteal secretion—he rejects the familiar dictum of Virchow and Rokitansky that chlorotic girls have hypoplastic blood-vessels and undeveloped genitalia. These he conceives to be only additional signs of degeneration. The author believes, too, that disturbed genital functions, springing possibly from the ovaries, have ætiologic importance in failing to provide certain chemical essentials to the blood. As a prophylactic measure he would feed young girls on some fat, such as butter, and abundant vegetables and fruit. Young women under eighteen should not have their sexual ideas excited by dancing, theatrical performances, or vicious books. He regards Blaud's pills as the best form of iron for general administration.

St. Petersburger medicinische Wochenschrift, March 3, 1900.

The Examination of the Heart for Life Insurance.—Dr. E. Moritz regards a sound cardiac and arterial system as the best prognostic sign of a long life. Valvular heart disease is usually easy to diagnosticate, but the early stages of arterio-sclerosis with its complications are more difficult of recognition. It is this factor which appeals especially to life-insurance examiners. He believes ninety per cent. of younger applicants for insurance have sound hearts, especially if the family and personal histories elicit no information as to rheumatism, gout, syphilis, nephritis, or alcoholism. Elderly applicants must be subjected to closer scrutiny. The normal locations of the apex beat and of the cardiac dullness are to be considered in accepting or rejecting an applicant.

Riforma medica, March 3, 1900.

The Vagus Nerve in Relation to the Malignant and Complicated Forms of Measles. (Continued.) By Dr. Emilio Cioffi.—The writer speaks of the complications of measles, and says that broncho-pneumonia is the most frequent of these. He attributes the dyspnœa in these cases to some influence, stimulating or depressing, exercised upon the vagus by toxic substances in the lungs.

Tuberculosis of the lungs is a more frequent sequel of measles than is generally supposed. Although this can not be referred to the vagus, the toxine of measles, acting on this nerve, causes a depression of the general vitality of the lung, so that it becomes a ready prey to the bacillus of tuberculosis. Vomiting and diarrhœa also occur. The author thinks the vagus has something to do with this, as it presides over the peristaltic action of the stomach and intestines. He found nephritic symptoms in thirty cases of measles out of a total of six hundred. The albuminuria may be said to be of nervous origin, the renal branches of the vagus being again responsible.

Riforma medica, March 5, 1900.

The Vagus Nerve in Relation to the Malignant or Complicated Forms of Measles. (Continued.) By Dr. Emilio Cioffi.—In speaking of meningitis as a complication of measles, the writer reminds us that centripetal fibres of the vagus supply the meninges as well as the occipital and transverse sinuses, and that the auricular branch of the same nerve (Arnold's nerve) passes through a small canal in the jugular fossa, traverses the substance of the temporal bone, crosses the aqueductus Fallopii, and passes out through the auricular fissure between the mastoid and the external meatus, where it gives off branches which supply the auricle and the external canal. He says further that convulsions are so frequent in measles that they are seen even in the mild cases at the onset of the disease. The vagus is stimulated by the presence of fever and by the toxines in the blood, and the slightest peripheral irritation is liable to produce convulsions, which are nothing but the working of the reflex mechanism of the vagus.

Otitis occurs in about fifty per cent. of all cases of measles. The patients are seized with an attack of otitic pain during the eruptive stage of the disease, and after a few days, perhaps a week, the attendant notices pus in the external canal. The author says that if he had no other argument in support of the theory of the action of the morbillic virus upon the vagus, it would be sufficient to cite this instance. Meningitis, usually of the tubercular type, is the most dreaded sequel of measles. Some cases are probably traceable to the otitis, but meningitis also occurs after cases of measles in which there was no sign of otitis. There is no doubt that in such cases the branches of the vagus which supply the meninges play a rôle in producing the clinical picture of meningitis. The author thinks, in conclusion, that the relation between the vagus and the complications of measles is a very close one, and that the mechanism of all these phenomena may be analyzed with almost mathematical exactness.

Riforma medica, March 6, 1900.

A Comparative Study of the Toxicity of the Urine and of the Elimination of the Sulphuric Ethers and of Indican. By Dr. Umberto Baccarani.—The writer thinks that the practitioner should pay more attention to this question, and that in many cases it would be well to test the urine for toxic constituents, but the apparatus and the time required are not at the command of the general practitioner. He reviews the mode of formation of the toxic constituents and of indican and sulphuric ether, and gives a *résumé* of what has been accomplished in this field of inquiry. The toxic substances in the urine are products of the vital activity of the organism, the kidney being deputed to eliminate these noxious matters. By the toxic power of the urine is meant the virulence of the toxines which it contains. These toxines are complex organic substances, the chemistry of which is as yet comparatively obscure.

The sulphuric acid, which appears in the urine in the form of sulphuric ether—*i. e.*, combined with an organic base—is derived from the process of decomposition in the intestine. It combines with other products of intestinal decomposition belonging to the "aromatic group"—namely, indol, skatol, phenol, cresol, etc.—and form sulphuric ethers.

Concerning indican there is not much to be said, as it has the same origin and occurs in increased quantities in the same conditions as sulphuric ether. The question which the writer proposes to investigate is whether there is a quantitative relation between the amount of indican and of sulphuric ether eliminated and the amount of toxines in the urine. If such a relation exists, and is known, it will be possible to test for that constituent which is most easily determined, and to infer the quantity of the others. The author made a number of experiments and concludes that there is absolutely no fixed quantitative relation between the amount of these three toxic constituents of the urine. Therefore it is necessary to test for all three if we desire to know whether they are present in increased amount.

Miscellaneous.

Hermaphroditism in Two "Sisters." — Chiarleino (*Accademia medico-chirurgica di Palermo*, 1899; *Gynécologie*, February 15th) reports the case of two children aged respectively seventeen and fifteen years, born of healthy normal parents having other children normal, who presented the same malformation, a perineal vulviform hypospadias with arrest of the testicles at the os pubis. There is a regular breast development in both cases, and the development of the body does not correspond to the male type. They had been brought up as girls and dressed accordingly. The author argues for the better education of midwives as well as physicians to render such errors impossible.

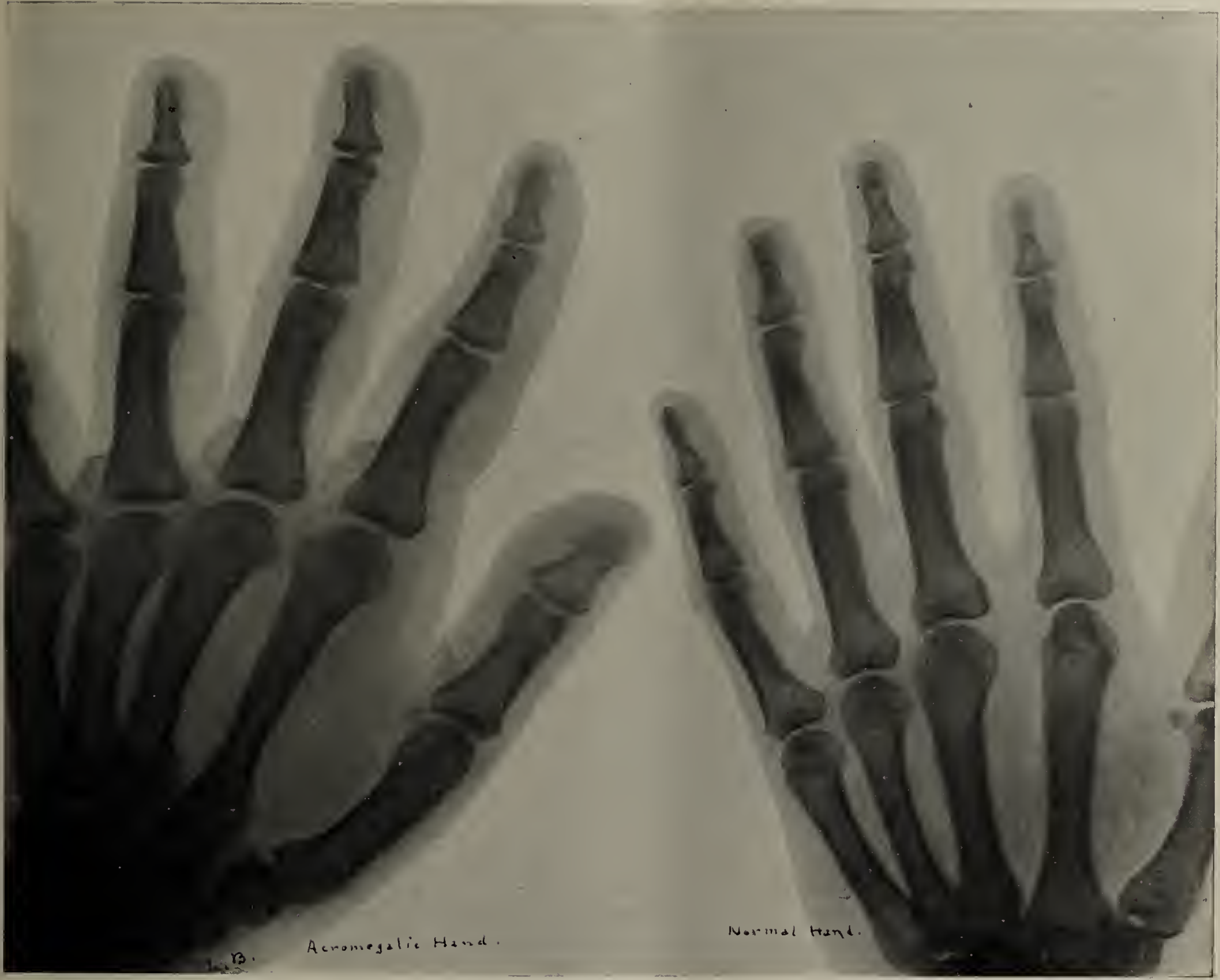

FIG. 9.

Proceedings of Societies.

THE SOCIETY OF THE ALUMNI OF THE CITY (CHARITY) HOSPITAL.

Meeting of November 8, 1899.

The President, Dr. WILLIAM L. STOWELL, in the Chair.

(Concluded from page 400.)

Chronic Rheumatism and Gout.

(*a*) **Ætiology.**—Dr. MORRIS MANGES, before reading his paper on the subject, presented three radiographs.

The first radiograph represented two hands (Fig. 9), both from young women aged twenty-three: one being the hand of a nurse in good health, the other that of a young woman with a most marked case of acromegalia. The plate distinctly showed the characteristic changes in the hands. The case presented the ordinary fully developed type of the disease; and in addition, the local phenomena due to enlargement of the pituitary gland—namely, blindness and intense pains in the head of a most lancinating character. In fact, it was of the pains in the head that she complained more than of any other symptom. In order to relieve her pains, the speaker advised doing craniectomy. Two large openings were made in the skull, and for three months the pain was greatly relieved. However, on the accumulation of the fluid there was an increase of pressure, and the pains returned; but, as the patient's condition was not good, it was not deemed wise to operate again.

The next case was the hand of a man with diabetes and alternating gout. The hand to the naked eye presented no features whatever, but the X-ray picture (Fig. 10) showed a decided thickening of the shafts of the bones.

The third picture showed the hands of a woman, twenty-eight years of age, married, with healthy children, and with an absolutely negative history of syphilis. She entered the hospital on account of a condition of the hand which at first glance was exactly like dactylitis, so graphically described by Dr. Taylor. On the left hand the index finger, and on the right hand the index and third fingers, presented marked changes; in several of the metacarpal bones there was a thickening of the shaft, especially at the lower ends. What the exact nature of the lesion was he did not know.

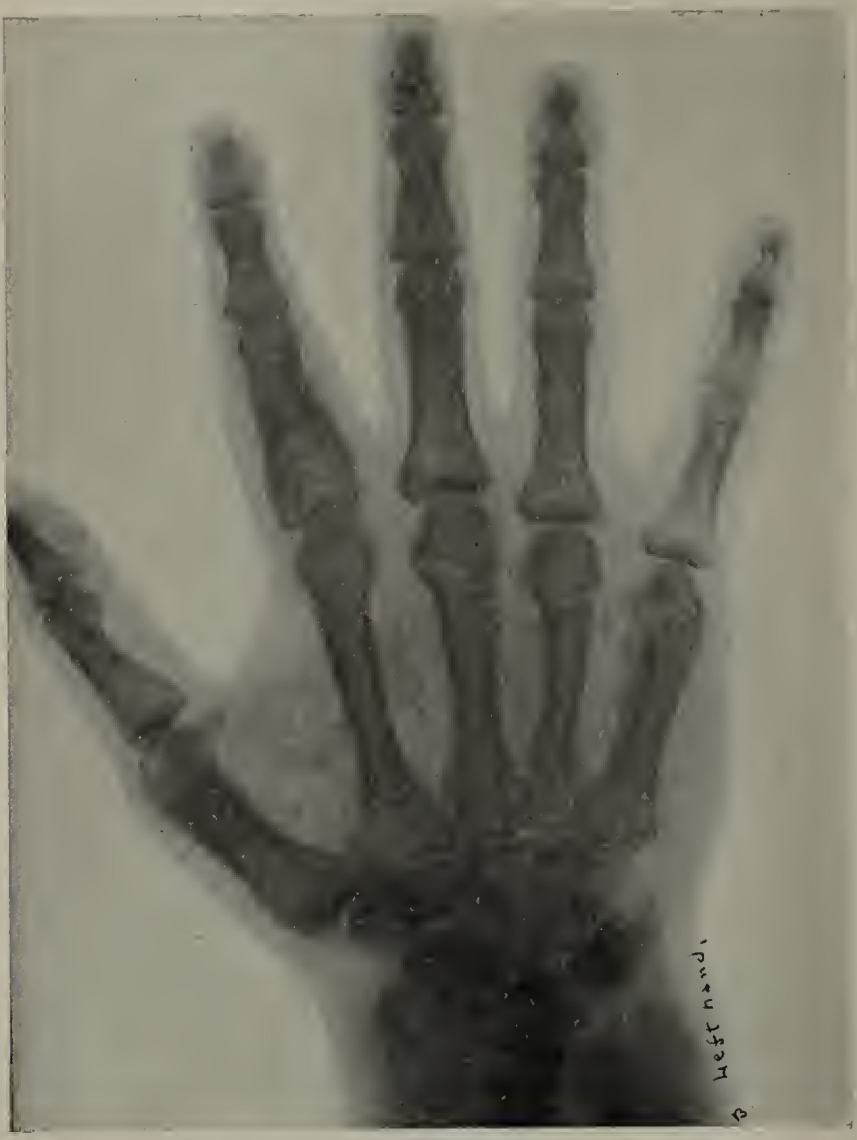

Fig. 10

The Ætiology of Chronic Rheumatism and Gout.—Dr. Morris Manges then read a paper with this title, of which the following is an abstract:

He said that the subject was one which presented great difficulties in the way of concise discussion for many reasons, of which the most important were (1) the confusion which existed as to what was included under each of these terms, and (2) the undue and improper importance which was attached, especially in this country, to uric acid as an ætiological factor. The presence of uric acid was only one of the essential manifestations of gout—that was to say, it was only one of the effects of the morbid process.

The ætiology of chronic rheumatism was still very obscure; our advances in pathology had done more in the way of eliminating many conditions which were formerly regarded as being cases of this condition, such as spinal arthropathies, acromegalia, muscular dystrophies, chronic metallic intoxications, etc., than they had in elucidating its causation.

It must be premised that the disease was a constitutional disorder with local lesions. Among the causal factors were improper modes of living, such as exposure, underfeeding, etc. Yet that these factors were not essential was seen in the fact that the disease was very common among people who had never had any privations. It sometimes followed acute attacks of articular rheumatism or gonorrhœal rheumatism, or traumatism. It might be associated with gout. Bannatyne claimed to have isolated a specific micro-organism in the synovial fluid of involved joints. The view which had most to support it was that chronic rheumatism was the result of self-intoxication.

Chronic gout being the result of oft-repeated attacks of acute gout, its ætiology coincided with that of the ordinary acute disease. The fact that so many theories had been advanced to explain gout showed that not one of them was perfectly satisfactory. Dr. Manges strongly advocated the views of Duckworth, Proust, Matthieu, and others that gout was a neurosis, primary or secondary, among the principal features of which were disturbances in the formation or elimination of uric acid. The important primary factor was the neurosis; the uric acid was only secondary. It was a member of a group of neuroses which included diabetes, obesity, bronchial asthma, migraine, neurasthenia, etc. They were closely related and had a common ætiology in which heredity played an important part. They might alternate or coexist in the same individual or in various members of the same family. To this primary neurosis, which was manifested by disturbances of the metabolism, all the other phenomena were secondary. This theory acknowledged the importance of the change in the reaction of the blood, and the variations which occurred in the functions of the kidneys and liver; it also attributed the same exciting causes for the attacks, and the remote ætiological effects, to alcohol, food excesses, mental overwork, etc.; heredity played the same important rôle; but it went a step further—it asserted that all these various factors were secondary, and that, important though they were, all of them combined could not produce gout unless there was added a something else—*i. e.*, a constitutional factor, the gouty neurosis. The exact nature of this gouty neurosis was at present unknown. That gout was essentially a neurosis was proved by many of the most prominent phenomena of gout, among which might be mentioned the paroxysmal nature of the disorder, the importance of anything which depressed the nerve forces of the individual in causing attacks, the alternations of various members of the family group, the marked bearing of heredity, etc. The best therapeutic results were obtained by those methods which treated gout from this neuropathological standpoint. Gout was something more than uric acid, as was proved by the failure of all the so-called uric-acid solvents and the lack of relation of the symptoms to the varieties in the formation, excretion, or retention of uric acid. The so-called poor man's gout was fully explained under this theory. But it did not explain everything in this interesting disease—no theory yet presented had done so; still, the neuropathic theory was more satisfactory than any other.

(*b*) **The Benefits of Balneotherapy.**—Dr. H. H. Schroeder read a paper on this subject. (See page 269.)

(*c*) **The Results of Treatment by the Hot-air Chamber.**—Dr. Lewis A. Coffin read a paper on this subject. (See page 336.)*

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* The expression "Denver mud antiphlogistine," used in Dr. Coffin's article, escaped his notice when he read the proof. The preparation, he now informs us, is made by the Denver Chemical Company, and he thinks it contains, among other things, glycerin, iodine, and ichthyol. It has the consistence of thick mud.—Editor.

(*d*) **Dietetic Management.**—Dr. William H. Porter read a paper on this subject. (See page 411.)

Dr. Stowell said that earlier in the evening they were much indebted to Dr. Cleaves for some of the radiographs. He was sorry she was not present at the time they were exhibited, but called on Dr. Cleaves at this point to speak about the radiographs or take part in the discussion.

Arthritis Deformans; Electrical Treatment. — Dr. Margaret A. Cleaves read a paper on this subject. (See page 458.)

Dr. W. L. Baner said he did not feel at all capable of opening the discussion of four such interesting papers as the society had just listened to. The question of the ætiology of these diseases was certainly a most puzzling one and a most discouraging one. He had hoped that Dr. Manges would come to the rescue. It had seemed at various times in recent years as if we were finally standing on firm ground in this matter and then some person living in Germany would proceed to disprove everything which we had considered as established. The speaker had just looked over a book by Dr. Henry W. Fuller, published in London in 1852, and it really seemed quite up to date on these diseases.

Some two or three years ago he had spent several weeks at the best known of the hot springs in this country. He was on very friendly terms with the physician in charge, and examined with him a number of cases coming there for treatment, cases of chronic rheumatism, arthritis, etc. In some cases the physician would predict a cure in a certain number of weeks, and then the very next case that would come in would show a joint seemingly almost identical in character with that of the preceding case, and the physician would say: "He has come for treatment and we must give it to him, but it won't do him much good." In point of fact it did not. These prognoses seemed to be based not so much on the joint condition as on certain temperamental qualities of the patient.

With all due respect to Dr. Manges's arguments on behalf of the neuropathic origin of these diseases, the speaker was inclined to agree with Dr. Porter that poisons produced somewhere in the alimentary canal by the malassimilation of proteids were the great causative factor. Certainly the most successful lines of treatment lay in this direction.

Dr. Carpenter said that he considered the prophylactic treatment of the greatest importance. After the joint changes occurred, treatment, at best, could be only palliative, for already in the digestive and vascular systems or in the kidneys chronic disease would have shown itself. This was notably true in the rheumatism of children. In them cardiac and nephritic lesions, especially the former, developed more insidiously than in adults. Here the joint trouble might not be present, or was so slight that it was not noticed. More often the rheumatism manifested itself as an amygdalitis, as chorea, urticaria, or an erythema. So frequently was this the case that it was well always to bear in mind the possibility of cardiac complications and to treat these patients accordingly.

Dr. Warren Coleman said his experience had been very limited, both in the ætiological study of this condition and with regard to the treatment. He spent two summers at the springs of which Dr. Baner spoke, the Hot Springs of Virginia, for the treatment of these diseases, but could not add anything to what had already been said with reference to the treatment of these general conditions. He was not prepared to accept the neuropathic theory of the ætiology of gout any more than he was prepared to accept the same explanation of the ætiology of diabetes, unless they included in this neuropathic theory the entire neurotic process. If metabolism was the result of perfect health, then gout was the result of disturbed metabolism. The relation of uric acid to gout was of extreme value. They did not know what the ætiology of these diseases was, aside from the fact that they arose from interrupted or disturbed metabolic processes.

Dr. H. G. Piffard said he thought the writer of one of the papers was wrong in regard to the influence of alcoholics on gout. He had had gout two or three times, and only after indulging too freely in champagne. As to the neurotic processes, the subject carried him back twenty-five years. There was a neurological society that invited one of its friends to read a paper on neuroses of the skin, and the physicians began sending their skin cases over to the neurologist. There was another neurological society that invited the speaker to read a paper on the neuroses of the skin. He told the society that there was not a skin disease he knew of in which some portion of the nervous system was not involved, but he declined to read the paper. As to gout and rheumatism, he supposed that there was some involvement of the nervous system everywhere. He granted Dr. Manges's theory that there was a neurosis present in the case of rheumatism and gout, but whether or not that neurosis was the cause of gout, whether that preceded certain underlying conditions or not, or whether it was the result of the disease, was another thing, and he was not prepared to accept the neurotic theory, more especially as the view presented by Dr. Porter was almost *verbatim* what the speaker put in print twenty-five years ago, and that was that rheumatism and gout were essentially diseases of suboxidation. The bacteriological factor did not occur to him twenty-five years ago. He agreed with Dr. Porter very thoroughly as to the influence of too much proteid in the production of both of these affections. He saw a good deal of rheumatism and gout, not so much in the joints as in the skin, and the treatment had been to cut the patients down from a meat diet to a vegetable diet. He told them to eat all the grass they could—beet tops, yellow dock, salads, sorrel, spinach, asparagus, etc. At all events, to eat as much green stuff as they could, provided they could digest it. If they could digest it, the rest was all right.

Dr. Adolph Rupp quoted an American humorist, who said, "Larning is the best substitute for experience." Personally, he had never suffered from gout, but instanced the high authority of Julius Cohenheim, who had suffered from and with it. Cohenheim, one of the most logical of medical writers, said that the ideas of lack of exercise and suboxidation were agreeable proofs to theories, but lacked a basis of fact in so far as the causation of gout was concerned.

Dr. R. C. Newton said there was one fact that would tend to explain the poor man's gout, and that was the lack of bathing. The poor man, as a rule, did not bathe, and consequently his skin was not in good condition to eliminate effete and toxic material, though he did have the muscular exercise which the rich man did not get.

Dr. Manges said that to answer the points raised would require a great deal more time than was at his disposal. In his paper he gave the arguments for the neurotic origin of gout. The patients might be put under the most ideal conditions, yet this would not cure the gout, but would only alleviate some of the immediate conditions; the symptoms would recur, would be reestablished when there were general nervous conditions, no matter what the diet was. It was not at all proved that there was suboxidation. For almost ten years he had been making urine analyses in gout, and as the result of ten years' careful work he could say that suboxidation did not exist; on the contrary, it was hyperoxidation. Instead of a minus quantity there was a plus quantity of urea, etc. As to the hot-air treatment: Two years and a half ago he introduced the hot-air treatment into Mount Sinai Hospital. His experience coincided with that of Dr. Coffin. He had had good results with it in treating joints in a fair proportion of cases, but not in all cases. Why it cured some and not others he did not know, but it was a treatment well worth carrying out. If general treatment was given as well as local, they would be agreeably surprised by the good results. The Betz apparatus was clumsy, and could not be trusted with many people, because the arrangement for getting heat from the combustion of wood alcohol might easily set fire to the patient. Furthermore, the patient complained bitterly of this pungent heat. The rest of the body was often cold, while the part in the oven was hot. Unless the nurse was careful about protecting the patient from exposure, morbid processes might start up in other parts of the body.

Dr. H. H. **Schroeder** spoke of the difference between patients under treatment. Some came in hobbling on crutches or carried on stretchers; yet after five or six weeks' treatment they were walking around without any help, though they seemed to be in the worst possible condition when they came to the springs for treatment. Others who had the same affection in a milder form yielded much less rapidly to treatment. Many of these cases could be cured just as well as an ordinary cold. Many persons, however, caught cold on every provocation, yet it would be unjust to say that the medical adviser had not alleviated and cured the preceding one. The same might be said about gout. The speaker thought it entirely wrong to rely on a purely local treatment. It was useless to put an affected joint in a hot box for the purpose of curing the disease. Local treatment would relieve some of the symptoms, but general treatment, which included judicious exercise, a warm, dry climate, regulation of the diet and functions, and hot general baths, would almost invariably be followed by good results.

Dr. **Porter** said, in defense of the suboxidation theory, he did not think that uric acid was gout by any means, but its presence in the urine was simply a symptom or manifestation of the suboxidation of the proteid constituents in the system. His observation differed from Dr. Manges's when he said that in some cases there was an excess of urea. An accurate observation of the quantity of proteid ingested and the amount of urea eliminated, in the author's experience, showed that there was a decrease of urea, and, of course, an excess of uric acid, and therefore he was a believer in suboxidation in all these cases. As to the neuropathic theory, this did not explain the condition; the nervous element must come into play; but in his opinion it was secondary and not primary. If toxic materials were introduced into the animal economy, they disturbed the normal action of the system, and in consequence thereof the nervous system would be disturbed. Effects should not be mistaken for ætiological factors.

Letters to the Editor.

THE SHELDON MURDER TRIAL.

34 West Thirty-seventh Street,
New York, *March 24, 1900.*

To the Editor of the New York Medical Journal:

Sir: Since the publication in the *Medical Journal* of a review of the Sheldon murder trial,* two of the gentlemen who were expert witnesses for the State have further insisted upon the justice of their conclusions.† The writer of that review is unable to perceive that any new matter of importance has been adduced, or that any restatement of the case has been made necessary, but feels that certain essential errors of fact and inference in the later article should be corrected.

The pistol employed in the experiments of Dr. Phelps was practically if not identically the same as the one which caused the death of Mrs. Sheldon and was used in the experiments of the prosecution. It was a five-chambered revolver of 0.30 calibre, made by the Colt Company in 1875, and had a barrel two inches and a quarter and chambers one inch in length. The exact date of manufacture of the Sheldon pistol is not stated, but the approximate date given (twenty to twenty-five years previous to 1896) makes it probable that the two weapons were made from the same mold and with the same tools; their only difference, that in the space between the chambers and the barrel, a sixty-fourth of an inch in the Sheldon pistol and a seventy-fifth of an inch in the one used by Dr. Phelps, is so nearly incalculable that it could cause no appreciable difference in results. The pistol used by the defense differed, it seems, from those which have been described; but this fact is immaterial, since in the review to which exception is taken comparisons of results were confined to those obtained by the State with those of the writer.

The inaccuracies alleged to exist in the reviewer's *résumé* of results obtained by witnesses for the State in firing at various ranges are not material, even in the light of what are termed "necessary corrections." They consist of four numerical errors or omissions in regard to area or fixation of powder grains, two of which existed in the printed evidence, and none of which affect the question at issue, and an error in transcription by which it was made to appear that at a range of four inches the smoke stain was not removed by ablution. It is well known that smoke stain is thus removable at all ranges and in the use of pistols of all calibres, so that this error, like the others, could have had no influence in causing a diversity of opinion.

The inference that the old cartridges used by Dr. Phelps were artificially dried is erroneous. Furthermore, the conclusions reached by him in regard to the comparative burning power of old and new powder refer only to the skin and hair, and do not in any way antagonize whatever general opinions may be held by "experts in the use of firearms." The demonstrated fact that hair upon the head of a cadaver can not be burned at a range of six inches and a half, or beyond, in the use of a Colt revolver of 0.30 calibre of the dimensions given, whether the powder be old or new, is unaffected by results obtained under other conditions. Whether Mrs. Sheldon's hair was damp or dry at the time of her death is a purely speculative question, and it is perhaps quite as conceivable that in her work about the kitchen stove on a hot day in July it would be dampened by perspiration as that it should be dry, as the State's witnesses prefer to suppose. If it were proved that Mrs. Sheldon's hair was dried by heat, which it has not been, that one condition of life might be "more closely imitated by a target of dry hair fastened to some backing" than by the head of a cadaver covered with its own hair; but no other condition of life could be so imitated to any appreciable extent.

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* *New York Medical Journal*, November 4, 1899.

† *Idem.*

The asserted "inherent improbability of any one attempting suicide at ranges other than contact, or nearly contact," is not in consonance with fact. That people do fire at their own heads at a range as great as four inches is amply proved. Several such instances have occurred within the knowledge of the writer in defiance of what is "the natural thing to do."

It has also been proved in a considerable number of instances that patches of lead and grains of powder escape through the space between the chamber and the barrel of a Colt revolver of 0.30 calibre, and for reasons, known or unknown, do abruptly change their direction, and reach points some inches both before and behind their starting point. Dr. John D. Gorman, an expert in pistol firing to whom I have been much indebted for assistance in experimentation, has the record of several such observations.

The statement that Dr. Phelps "admits" that "it is probably inevitable at ranges of a fraction of an inch to three feet that a certain number of powder grains—the number varying with the range—remain even after thorough ablution"—as quoted with the omission of the qualifying clause—misrepresents the opinion he expressed, and therefore fails to make him an "unconscious," "unwilling," or any other sort of witness for the prosecution as claimed. The probability of the fixation of one or more grains within the limits of range mentioned may be conceded, but exceptions to that rule were noted under conditions specified, even when the bullet entrance was at the site of Mrs. Sheldon's wound.

The further statement that the experiments made by Dr. Phelps "lead him to precisely the same conclusions reached by us" (witnesses for the State), is obviously untrue—whatever interpretation that statement was intended to bear. It is equally untrue that he formed or formulated any theory as to the exact range at which the fatal shot was fired; he expressed the opinion that it was not proved that this shot was homicidal, and incidentally stated that the appearances described had been reproduced at a range of four inches.

It will be unnecessary to refer to other contentions in the supplementary statement of the witnesses for the State, which might properly be questioned or denied, as they are of subsidiary importance.

The assumption that the reviewer was a "hostile witness," or a partisan of the defense, is not justified; and he regrets that what he wrote should have impressed the gentlemen who appeared for the State as otherwise than what it was, a dispassionate study of the case from the evidence, and from which he must necessarily accept the conclusion of one side or the other.

CHARLES PHELPS, M. D.

Book Notices.

Christian Science. An Exposition of Mrs. Eddy's Wonderful Discovery, including its Legal Aspects. A Plea for Children and other Helpless Sick. By WILLIAM A. PURRINGTON, Lecturer in the University and Bellevue Hospital Medical College, and in the New York College of Dentistry, upon Law in Relation to Medical Practice, etc. New York: E. B. Treat & Co., 1900.

THIS is a careful and dispassionate study of Mrs. Eddy's "discovery" in all its protean aspects—as a religion, as a philosophy, as a method of healing the sick, and as a phenomenal money-making scheme. Its inconsistencies and absurdities are laid bare in the most logical manner, reliance being had chiefly upon the citation of statements from authoritative sources and the marshaling and contrasting of conflicting dicta from the principal founts of her philosophy, and with but little added in the way of personal comment. The author leaves the evidence itself to tell its own tale to the discriminating reader. The book itself consists chiefly of a series of separate papers previously published in various magazines. These papers are: 1. Christian Science and its Legal Aspects. 2. The Case against Christian Science. 3. Manslaughter, Christian Science, and the Law. 4. Christian Science before the Law. 5. How Far can Legislation aid in Maintaining a Proper Standard of Medical Education? 6. The Evolution of the Apothecary. To these are added two appendices: The Claims of Christian Science and Christian Science and the Law. Those who have read Mrs. Eddy's book, *Science and Health, with a Key to the Scriptures,* and have been struck with the tissue of contradictions and absurdities contained therein will find these contradictions marshaled in the author's book for their more systematic notice. The chief point insisted on is the enormity of permitting helpless children and adults mentally incapacitated from judging for themselves, whether temporarily or otherwise, to be submitted to the often fatal results of neglect, equally criminal, surely, with the analogous neglect of allowing them to die for want of the physical necessaries of life. Mr. Purrington gives due credit to the substratum of natural law known to, and more or less acted upon by, physicians all the world over, which constitutes the only active principle in Mrs. Eddy's scheme, and is incontinently disowned by her. She succeeds in impressing a certain class of people by a method similar to that of a man who, taking a phonograph to a savage island, should induce a native to speak into it, and then reproduce his words with voice and intonation to some other native in a far-off place to whom they were well known, and to whom the reproduction would seem marvelous enough to justify the deification of the miracle-worker. If the said miracle-worker should further encourage the superstitious reverence thus induced, denying the natural means at work in his performance, and trading upon the ignorance of the native for his own aggrandizement, he would be called a charlatan. What shall we call Mrs. Eddy? Mr. Purrington does not contemplate the passing of laws to prohibit Christian Science or any other mode of healing. He insists that no one should be allowed to practise it, however, unless, like all other practitioners, he has shown a competent knowledge of the human economy and the sciences related thereto, and renders himself equally with them liable to action for malpractice. There are cases in which Christian-Science methods—or those of suggestion, which is all of good that they contain—are a suitable treatment; but an adequate training is requisite to enable the practitioner to distinguish them from those cases in which they are not. And there are cases also in which the objective character of the disease so affects the individual, as in organic alteration, or the community, as in infectious diseases transmissible to others, as to make their employment not merely a waste of time, but a positive injury to the patient, the community, or both. In the former case the individual, if a minor or mentally powerless, deserves protection against a possible and probable misuse of methods employed without his intelligent consent. In the latter, the protection due to the community is even more important than that due to the individual. If the patient is of years of discretion and neither unconscious, insane, nor helpless, let him and his healer by all means retire to the backwoods and get on with his healing where his diphtheria or typhoid can not endanger the lives of others. But in a community it should not be allowed.

Mr. Purrington's book will well repay a careful perusal by all physicians; and, should any such have a generally intelligent patient whose by no means blameable ignorance in the present state of public knowledge regarding matters of the human economy renders him or her fascinated by this specious charlatanry, he will probably find the author's book as useful an antidote as any to the poison, provided always that the patient is not too far gone. Where mental poisoning on the subject has, however, set in, no antidote will avail.

BOOKS, ETC., RECEIVED.

Surgical Pathology and Therapeutics. By John Collins Warren, M. D., LL. D., Professor of Surgery in Harvard University, etc. Illustrated. Second Edition, with an Appendix containing an Enumeration of the Scientific Aids to Surgical Diagnosis, together with a Series of Sections on Regional Bacteriology. Philadelphia: W. B. Saunders, 1900. Pp. 5 to 873. [Price, $5.]

The Medical Review (Medical and Surgical Review of Reviews). An Indexed and Illustrated Monthly Summary of all that is Important to the Practitioner in the Medical Periodicals of the World. Edited by Nathan E. Boyd, M. D. Volume II. January–December, 1899. Pp. 3 to 678.

The Irrigation Treatment of Gonorrhœa. Its Local Complications and Sequelæ. By Ferd. C. Valentine, M. D., Professor of Genito-urinary Diseases, New York School of Clinical Medicine, etc. Illustrated by Fifty-seven Engravings. New York: William Wood and Company, 1900. Pp. 221. [Price, $2.]

Clinical Studies in Vice and in Insanity. By George R. Wilson, M. D., Medical Superintendent, Mavisbank Asylum. New York: The Macmillan Company. Edinburgh: William F. Clay, 1900. Pp. xi–3 to 234. [Price, $3.]

Transactions of the American Pædiatric Society. Eleventh Session, held in Deer Park, Maryland, June 27, 28, and 29, 1899. Volume XI.

Nordrach at Home, or Hygienic Treatment of Consumption. Adapted to English Home Life. By Joseph J. S. Lucas, B. A. Lond., M. R. C. S., L. R. C. P., Late Medical Registrar and Pathologist at North London Consumption Hospital. London: Simpkin, Marshall, Hamilton, Kent, & Co., Limited, 1900. Pp. viii–9 to 60.

Consumption: Its Nature and Treatment. With a Chapter on Bacteria and Antiseptics. By William H. Spencer, M. A., M. D., Cantab., M. R. C. P. Lond., Consulting Physician to the Bristol Royal Infirmary, etc. London: Henry J. Glaisher, 1900. Pp. 83.

Twenty-fourth Annual Report of the Managers and Officers of the New Jersey State Hospital at Morris Plains. For the Year ending October 31, 1899.

Annual Report of the Superintendent of the Erie County Penitentiary. For the Year ending December 31, 1899.

The Operative Treatment of Uterine Fibroids. By F. A. Lockhart, M. D., of Montreal. [Reprinted from the *American Gynæcological and Obstetrical Journal.*]

On the Ætiology of the Nausea and Vomiting of Pregnancy. By David James Evans, M. D., of Montreal. [Reprinted from the *American Gynæcological and Obstetrical Journal.*]

Intestinal Obstruction due to Intussusception. By John F. Erdmann, M. D. [Reprinted from the *Annals of Surgery.*]

On the Resuscitation of Apparently Dead Newborn by Laborde's Method. By Francis Eustace Fronczak, M. D., of Buffalo. [Reprinted from the *Philadelphia Medical Journal.*]

Notes upon Acute Osteomyelitis—Cancer of the Rectum—The Treatment of Hernia in the Aged. By Charles C. Allison, M. D., of Omaha, Nebraska. [Read before the Medical Society of the Missouri Valley, September 21, 1899.]

The X Rays as a Diagnostic Agent in Pulmonary Diseases. By J. Edward Stubbert, M. D., of Liberty. [Reprinted from the Special X-ray Number of the *Philadelphia Medical Journal.*]

The Diagnosis of Gastric Ulcer, with a Report of Cases. By Frank H. Murdoch, M. D., of Pittsburgh. [Reprinted from the *Philadelphia Medical Journal.*]

Proceedings of the New York Mycological Club. The Toxicology and Chemistry of Mushrooms. By Thomas J. Keenan. [Read before the New York Mycological Club at a Stated Meeting held in the College of Pharmacy of the City of New York, February 6, 1900.]

A Study of Aural Vertigo. By Lewis S. Somers, M. D., of Philadelphia. [Reprinted from *Medicine.*]

The Contagiousness of Pulmonary Consumption. By Ernest L. Shurly, M. D., of Detroit. [Reprinted from the *Physician and Surgeon.*]

The Treatment of Nephrolithiasis with Glycerin. By A. Hermann, M. D., of Carlsbad, Bohemia. [Reprinted from the *Medical Chronicle.*]

Neue Mitteilungen zur galvanokaustischen Radikalbehandlung der Prostatahypertrophie per vias naturales (Bottini'sche Operation). Von Dr. Albert Freudenberg, in Berlin. [Sonder-Abdruck aus *Deutsche Medizinal-Zeitung.*]

Miscellany.

The Late Dr. Hans Rudolph Hoffmann.—At a special meeting of the North Hudson County Medical Society held at West Hoboken, New Jersey, March 19, 1900, the following preamble and resolutions were unanimously adopted:

Whereas, In this early history of our society we are called upon to record the death of Hans Rudolph Hoffmann, M. D., one of our prominent, honored, and useful members, as an expression of our sentiment in the loss which we have sustained be it

Resolved, That we, the North Hudson County Medical Society, deeply regret the death of our esteemed colleague and desire to express the sense of the great loss suffered, not only by the community, but by the medical profession. And be it also

Resolved, That we tender to his bereaved family our heartfelt sympathy in the great loss they have sustained. And be it further

Resolved, That a copy of these resolutions be sent by the society to the family, and be published in the daily papers and the medical journals.

[Signed.] Richard Jahr, M. D.,
A. J. Walscheid, M. D.,
William Menger, M. D.,
Committee.

The American Medical Association.—We have received the preliminary programme of the Section in Diseases of Children (chairman, Dr. Edwin Rosenthal, of Philadelphia; secretary, Dr. Louis Fischer, of New York; executive committee, Dr. A. C. Cotton, of Chicago, Dr. J. P. Crozer Griffith, of Philadelphia, and Dr. H. E. Tuley, of Louisville) for the next annual meeting, to be held in Atlantic City, New Jersey, on June 5th, 6th, 7th, and 8th. At a session devoted to the consideration of school children the following papers will be presented: Symmetrical Development, or, Does our Present School System Develop the Highest Powers of the Child? by Dr. E. Stuver, of Fort Collins, Col.; School Break-downs, by Mr. J. Henry Bartlett, of Philadelphia; Eye Strain, by Dr. Thomas H. Fenton, of Philadelphia; The Care of the Ear in School Children, by Dr. Louis J. Lautenbach, of Philadelphia; The Physician's Responsibility in the Physical Education of School Children, by Dr. Grace E. Spiegle, of Philadelphia; and The Neglect of the Teeth in Childhood, by Dr. A. D. Rosenthal, of New York.

At a session devoted to the consideration of contagious diseases papers will be presented as follows: Shall Children be Kept from Measles and the Exanthemata usually Incident to Childhood? by Dr. C. F. Wahrer, of Fort Madison, Iowa; Rötheln, a Distinct Affection apart from Measles and Scarlatina, and its Differentiation from these Exanthemata, by Dr. Henry Koplik, of New York; A Clinical and Pathological Study of the Rash of Scarlet Fever, with Special Reference to the Origin and Character of the Desquamation, by Dr. Jay M. Schamberg, of Philadelphia; Fœtal and Infantile Typhoid, by Dr. John Lovett Morse, of Boston; Decubitus following Intubation, by Dr. Joseph Trumpp, of Munich; The Differential Diagnosis between the Eruptions of Influenza and the Other Infectious Diseases of Children, by Dr. A. S. Daniel, of New York; and The Causation, Relative Frequency, etc., of Typhlitis, Perityphlitis, and Appendicitis in Infancy and Childhood, by Dr. Joseph H. Byrne, of New York.

At a session devoted to the consideration of the feeble-minded and of nervous diseases the following papers will be presented: The Ætiology of Idiocy and Imbecility, by Dr. Martin W. Barr, of Elwyn, N. Y.; The Physiological Method of Training the Feeble-minded, by Dr. S. J. Fort, of Ellicott City, Md.; The Feeble-minded (which title the author may change), by Dr. A. W. Wilmarth, of Chippewa Falls, Wis.; Diseases of the Feeble-minded, by Dr. J. Madison Taylor, of Philadelphia; Common Forms of Paralysis in Children, by Dr. William M. Leszynsky, of New York; and Chorea, by Dr. J. Clements, of Kansas City, Mo.

At a session devoted to diseases of the blood and of the circulation papers will be read as follows: Purpura Hæmorrhagica or Scorbutus—a Clinical Sketch, by Dr. Henry E. Tuley, of Louisville; Rheumatism, by Dr. Samuel E. Woody, of Louisville; The Essential Points in the Treatment of the Adolescent and the Senile Heart, by Dr. John A. Robison, of Chicago; The Abortive Treatment of Pneumonia, by Dr. H. Illoway, of New York; Resulting Injuries due to Extubation, by Dr. János Bokay, of Budapest (to be read by Dr. Alexander Klein, of Philadelphia); and The Medicinal and Surgical Treatment of so-called Scrofula, by Dr. Gustavus M. Blech, of Chicago.

At a session devoted to infant feeding and to diseases of the intestinal tract the following papers will be presented: The Milk Supply, etc., by Dr. Adolf Baginsky, of Berlin; Gastro-intestinal Hæmorrhage in the Newborn, by Dr. Edward H. Small, of Pittsburgh; Statistics on Intussusception in Children, by Dr. S. Weiss, of Vienna; The Clinical Significance of the Stools in the Diarrhœa of Infants, by Dr. William E. Darnall, of Atlantic City; Disease of the Antrum of Highmore in Young Children, by Dr. Emil Mayer, of New York; Congenital Malformation of the Rectum—a Case of Maternal Impression, by Dr. Thomas Charles Martin, of Cleveland; Movable Kidney (Floating Kidney) in Children, by Dr. Isaac Abt, of Chicago; The Symptomatology of Appendicular Inflammations in Children, by Dr. Thomas H. Manley, of New York; Normal Salt Transfusion in the Newborn for Hæmorrhage from the Cord, by Dr. John S. Miller, of Philadelphia; Some Joint Diseases in Children—their Diagnosis and Treatment, by Dr. Edward A. Tracy, of South Boston; and Athrepsia Infantum—Diagnosis and Treatment, by Dr. Louis Fischer, of New York.

A Congress for Combating Tuberculosis will be held, under the patronage of her Majesty the Queen of Italy, in Naples, from the 25th to the 28th of April, under the presidency of his Excellency Minister Baccelli. The general committee presided over by Senator Professor de Renzi, and of which Professor A. Rubino is the secretary, superintends the arrangements of the congress, the aim of whose labors is the same as that first set on foot at the congress of Berlin. It will be divided into the following sections, each of which has a separate committee of management: 1. *Ætiology and Prophylaxis.* 2. *Clinical pathology.* 3. *Therapeutics.* 4. *Sanatoria.* In this congress are entitled to take part physicians, naturalists, and engineers, as well as representatives of the social and philanthropic sciences. The subscription for each person is twenty francs (Italian) and entitles to the member's ticket and badge of the congress, as well as to the reduced fares on the Italian railways and steamboats, to the *Transactions* of the congress, and all publications connected with the same, and free entrance to the museums, Pompeii, Herculaneum, etc. Ladies connected with members of the congress can, on payment of the same sum of twenty francs, take part in the congress. During the congress numerous festivities will take place, including a reception by the municipality of Naples, a gala performance at the theatre of San Carlo, excursions, with luncheons, to Pompeii, Sorrento, and Capri, an excursion to Palermo, and a visit to the sanatorium Hygeia, founded by Commendatore Florio. The exact programme of these festivities will be communicated to the members of the congress with the least possible delay. The applications as well as the entrance money are to be sent to the secretary's office of the general committee, 1 Clinica medica della R. Università di Napoli (*Ospedale clinico*).

The Canadian Medical Association.—The general secretary, Dr. F. N. G. Starr, of Toronto, informs us that at a largely attended meeting of the profession in Ottawa recently it was decided to hold the meeting of the Canadian Medical Association on the 12th, 13th, and 14th of September. The meeting was unanimous in the desire to make the century gathering of the association the best meeting ever held. A large sum of money was subscribed by those present for the entertainment of visiting members, making it a certainty that those in attendance will have, if possible, even a better time than they have ever before had in the capital city. The president, Dr. R. W. Powell, of Ottawa, has recently heard from Mr. Edmund Owen, of London, England, the gratifying information that he will deliver the address in surgery. This in itself should assure a large attendance.

A Grand Concert for the Red Cross in Africa took place on March 22d at the Metropolitan Opera House in support of the American hospital ship *Maine,* and of the Red Cross services working in South Africa. Among the artists were Madame Emma Eames, Madame Suzanne Adams, Madame Nordica, Madame Calvé, Mdlle. Zelie de Lussan, Miss Marie Brema, Madame Clementine de Vere, M. Edouard de Reszke, M. Plançon, Signor Campanari, and Signor Scotti. The financial result is stated in the *New York Herald* for March 23d to have amounted to twelve thousand dollars.

Professor Osler and the University of Edinburgh.—*Science* for March 16th quotes the following from *Nature* concerning the recommendation of Professor Osler to fill the chair left vacant by the death of Sir Thomas Grainger Stewart: "The desire has been widely expressed in university circles in Edinburgh that the Curators of Patronage, with whom the appointment to the chair of medicine rests, should offer the post to Professor Osler, of the Johns Hopkins University, who is well known as a teacher and clinicist of the highest scientific eminence, and whose acceptance of it would greatly strengthen both the systematic and clinical teaching in the university. It would appear, however, that the curators have no choice in the matter, but are bound to advertise every vacancy, so that the far more satisfactory and dignified method of appointment by invitation is necessarily excluded. Nevertheless, it is confidently hoped that Professor Osler may be induced to send in a formal application for the chair, since it is certain that his claims would receive every consideration from the present board of curators, who have more than once, on recent occasions, shown that they are superior to merely local considerations, and that they have regard in making these appointments solely to the best interests of the university. Professor Osler is a Canadian by birth, and, although he has for many years successively occupied the important chairs of medicine in Philadelphia and Baltimore, he has, we believe, never renounced his British nationality. His appointment to Edinburgh, although it would be felt as a serious loss by our kinsfolk on the other side of the Atlantic, would doubtless be considered by them, and especially by our Canadian fellow-subjects, as a graceful recognition that we are one people, bound together in science, as in politics, by common interests, and that we are prepared to welcome the best man, from whichever side of the water he may hail. Applications for the post, with testimonials, must be lodged with Mr. R. Herbert Johnston, secretary to the curators, at 66 Frederick Street, Edinburgh, on or before April 14th."

Leprosy in Crete.—According to *Science* for March 16th, Dr. Edward Ehlers, of Copenhagen, will go to Crete in April to make arrangements for the segregation of the lepers on the island. They number about two thousand and will be placed on a small island off the north coast.

A Bronze Medallion of Pasteur has been placed, according to *Science* for March 16th, on the house in Strassburg in which the scientist lived in 1852.

Bequest for Researches upon Cancer.—*Science* for March 16th states that the bequest of one hundred thousand dollars for researches into the cause and cure of cancer, originally made by Mrs. Caroline Brewer Croft to Dr. H. K. Oliver and Dr. J. C. Warren, has been turned over to Harvard University, and the medical school has organized the work to be prosecuted. Dr. E. H. Nichols, '86, goes to Europe to study cancer abroad.

Another Medical Commission to West Africa.—According to *Science* for March 16th, the committee of the Liverpool School of Tropical Diseases has decided to send out next month, under the direction of Dr. Annett, another expedition to West Africa. The expedition will make its headquarters in Old Calabar and carry on researches in southern Nigeria. If time and opportunity permit, the upper Niger will be visited.

Examinations for Government Medical Appointments.—According to *Science* for March 16th, the United States Civil Service Commission announces that in view of the needs of the service all persons who have been examined within the past six months and have failed to attain eligible averages in the following-named examinations will be permitted reexamination this spring upon filing new applications. These examinations will be held at various places throughout the country, beginning April 17, 1900: Acting assistant surgeon Marine-Hospital Service, hospital steward, physician, and trained nurse.

A Bacteriological Laboratory for the Study of Bubonic Plague is to be established, according to *Science* for March 16th, by the Italian government on the island of Pianosa.

A National Antituberculous Institute for the study of the treatment of tuberculosis is, according to *Science* for March 16th, citing the *British Medical Journal,* the subject of a bill before the French senate. The introducer, M. Fleury-Ravarin, asks for state aid by the authorization of the title "national" and an annual subsidy of three thousand dollars.

Original Communications.

PUERPERAL SEPTICÆMIA:
ESPECIALLY ITS BACTERIOLOGY AND TREATMENT BY SERUM.

By LOUIS A. HERING, M. D.,
COLORADO SPRINGS, COL.

MUCH has been written on puerperal septicæmia and, it appears, little definite information given, although the subject is a very interesting one for research. The condition under consideration always causes some apprehension and usually complicates carelessly conducted accouchements or follows abortions criminally induced or otherwise; in the wake of such infection follow all the distressing phases of pelvic inflammation, the *fons et origo* of which is usually the uterine cavity. Given a woman with pelvic inflammation, with all its possibilities of spreading both by continuity and contiguity, and let her neglect to consult competent medical authority until a state of chronicity is present, and the chances are largely in favor of invalidism. Many patients under the most favorable conditions never regain their former state of health.

Of septicæmia cases the chances are much in favor of death; what we understand, however, as puerperal septicæmia, whether of gonorrhœal, streptococcus, or mixed bacterial origin, has in my judgment a shade the better chance under judicious medical and surgical management. I say surgical management, because no case should be managed by purely medical measures alone if a cure is to be attained. Medical measures in this affection are at present somewhat tentative, while surgical measures are radical and tend toward a cure, but they must be radical to cure.

It is in the management of these cases that one is driven to employ any medicament which holds out any hope, and in the treatment of my series of cases (three) I have employed two remedial agents which to my mind are still *sub judice*. I do not urge as good practice the use of one agent which I employed. That agent was guaiacol. It served me well, however, in lessening temperature; but since the hyperthermia in this septic condition is due to pus somewhere in the pelvis, either in the pelvic organs or the supporting pelvic tissues, the better practice for reducing it is to give vent to the pus, which is, of course, palpable to every one; yet sometimes it occurs that the signs and symptoms which herald pus are indefinite, and we may experience some difficulty in determining our point of approach to it. Under these circumstances something which will temporarily check rise of temperature is desirable, and I can recommend guaiacol. Given a patient with a thermometric record ranging from 100° to 105° F., and the general depression attendant upon this state, one is rather loath to give the coal-tar products because of their well-known depressing effect upon the circulatory system. In suggesting the practice of hydrotherapeutic measures one still meets with strenuous objection. Whatever their advantages may be, one can not impress the laity with their utility unless demonstration is actually given by practising them. Permission to demonstrate is, however, reluctantly given. I have had objection made to the sponge bath. A practitioner, however, who succeeds by this means in bringing down the temperature one degree is doing very well, judging from my experience; but when it is practised it is always beneficial and refreshing to the patient, especially if alcohol is added for its refrigerant action. Maci has been led to try the treatment of puerperal sepsis by cold baths on account of the successful results obtained in one of his serious cases, but there are many contraindications to its routine employment. Fochier uses this method when the heart becomes weak and the urine diminished. Charles advocates it as a stimulant to heart action. In the cases under consideration sponge baths were given at regular intervals and guaiacol rubbed into the abdominal walls every hour until its antithermic effect became manifest. As a stimulant to fortify against the depression which some writers urge against its employment, but which I have not observed, I gave caffeine sodio-salicylate in five-grain doses. The temperature was always lessened, notwithstanding the pus accumulations in the pelvis, which were evacuated later, as soon as demonstrable. The good effect was fleeting, however; as soon as the use of guaiacol was discontinued the temperature again rose. I may be pardoned the digression here for a moment to state that I have found guaiacol innocuous in paludism, but effective in controlling the fever of tuberculosis. Its employment as an agent facilitating diagnosis therefore becomes at once apparent.

The other agent which I employed for combating the septic process was antistreptococcus serum. Of this product of modern orrhotherapeutical research I hope for much, in the light of my experience with it. Indeed, the good results attendant upon its use have encouraged and determined me to use it again in these cases and those of a like type and character. I am of opinion that failure in the hands of so many can be traced to causes other than inefficacy of the serum used.

Bacteriology and Mode of Entrance of the Infecting Organisms.—It may be safely accepted that septicæmia is caused by infection introduced from without in most cases; it is, however, evident, from the extensive bibliography on the subject *pro et con*, that the bacteriology, especially of puerperal infection, is still in a chaotic state. That the streptococcus is the chief source of mischief I think all are agreed, but I can not conceive of an infection being purely streptococcic. Brieger first called attention to the presence of the staphylococcus in this infection, and later Hayes and Doderlein concurred in this view. That the staphylococcus produces only mild, circumscribed infection (as the popular notion has it) is, I think, due to an improper concept of its life history and the laxity of investigators; *per contra,* I think it is proved by the reported fatal cases in which bacteriological investigation demonstrated the presence of both streptococci and staphylococci, and in which the serum was used with temporary benefit, that it is of sufficient virulence to produce death. Now, to my mind, it is in line with logical reasoning to assume that the serum, since it was only antistreptococcic, was a toxicide only to this organism; hence the transient improvement. But the staphylococcus and its work could not be combated by the serum; it went on working mischief unmolested and produced death. Is it not then reasonable to advance the suggestion that the staphylococcus was the direct cause? Strinkman has demonstrated this organism as the sole cause of death in at least one of his cases.

Then, again, the *Bacillus coli communis* by transmigration may enter the utero-vaginal canal and become an associated factor in the septic process. To my mind there is no Simon-pure streptococcus infection to be considered in this condition, as so many would have us believe; the infection is always mixed. But I can conceive of streptococci as being more prevalent and easily demonstrated, the staphylococcus next, and the *Bacillus coli* next. There are a number of other organisms which investigators claim to find, and which are stated to be pathogenic. I believe the *Bacillus typhosus,* which some have found in the puerperal infection, is always the *Bacillus coli;* they look alike to casual observers and under inefficient microscopes. I am willing to retract this somewhat dogmatic assertion if the reporters prove that typhoid fever was in such cases a complicating disease, or by methods of differentiation (appearance of culture on potato, or the negative indol test, as suggested by Kitasato *) demonstrate the *Bacillus typhosus.*

I can close my eyes to the infection in the utero-vaginal canal and have a picture of typhoid fever myself, or at least a so-called typhoidal condition in cases which take a bad turn. Again, the association of the colon bacillus with the streptococcus is of more frequent occurrence than is currently believed. Further, the staphylococcus is also more frequently present than is admitted; it is more tenacious of life than the streptococcus, since it has been demonstrated by experiment that it survives the effects of the acid vaginal secretion for a longer time. It is admitted also that the *Staphylococcus pyogenes aureus* may cause extensive lesions or even general septicæmia. The discordant views bearing on the bacteriological ætiology of the infection are undoubtedly due to faulty technique in obtaining cultures.

As to the mode of infection, one can say that since micro-organisms are omnipresent we may reasonably expect to find them in the utero-vaginal canal, in that portion of its extent where there is suitable pabulum. As a matter of fact, G. Winters finds micro-organisms which may be pathogenic constantly present in the lower part of cervices in pregnant as well as non-pregnant women; the upper part of the vagina, and especially the cervix, contain bacteria.*

In support of the proposition that the *Bacillus coli communis* is more frequently present than is reported, I may be permitted to suggest that the transmigration of this organism may take place by the blood or lymph channels, and it seems clear to my mind that the latter is the more probable route. The lymphatic vessels of the rectum are of large size and they pass into the sacral glands; the lymphatics of the cervix uteri and vagina also enter the sacral glands, establishing thus a direct avenue of communication between the rectum and vagina. During gestation these glands are greatly enlarged and their activity correspondingly increased; hence a broader avenue for travel for the *Bacillus coli* from the rectum, its natural habitat, to the vagina.

The speculations of some writers (not observers) as to the identity of the infection and the avenues of entrance of the *Bacillus coli* are amusing. Thus a writer recently suggested that the *Bacillus coli communis* has only a short distance from the anus to the vagina. Perhaps the organism has inherent intelligence directing its travel that way, and perhaps it is athletic enough to swing itself by one of the pubic hairs from the anus to the introitus vaginæ with its war paint on to associate itself with the streptococcus. It seems to me, though, more rational to assume that, if infection must be, Nature, always wise, provides a more direct route, and also a battleground where the most harm can be done by the invaders—namely, the lymph channels—as outlined above.

Why Serum Treatment Fails.—Since the introduction of serum by Marmorek in France simultaneously with Charrin and Rogers, it has in turn been highly lauded and condemned—chiefly condemned. The streptococcus is an extremely variable organism, and there are very marked differences between individual streptococci, which are manifested by their varying virulence, their morphology, behavior on culture media, and toward coloring matters. I would call attention to their varying virulence. Observers have shown that serum which is produced from one variety of streptococcus may only be efficacious against infection due to that particular organism, but inert against infection produced by streptococci obtained from other sources. Against this must be considered, however, the generally accepted opinion that streptococci are all of one family, and that the serum is alike efficacious against all.

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* Von Jaksch, *Clinical Diag.*, p. 206–209.

* J. Halle. *Annales de gynécologie*, March, 1899.

Failures in the action of serum may be attributed to—

1. Old serums.
2. Strictly antistreptococcic serum can only be efficient against toxines produced by streptococci; it must be useless when we have a mixed infection to deal with.
3. Delay in inaugurating treatment with the serum and administering it in insufficient quantities.
4. Overstimulation of the patient.

Treatment.—All cases were curetted as soon as they came into my hands, gently yet thoroughly, and the uterine cavity irrigated, using a return-current catheter with a weak bichloride solution. I can not reconcile myself to the advice given to ignore the local mischief by avoiding curettage, because I am not satisfied that the use of the curette is so pernicious and useless a measure as some writers urge. I would, however, advise gentleness and the use of weak antiseptic solutions, because strong ones add to the already existing trauma. Injudicious local treatment is here harmful, as in every other bodily ill. The reason urged against the use of the curette in septic cases is the risk of introducing added infection; this I consider untenable, on the ground that careful men do not introduce or add to the already existing infection by unclean instrumentation, nor will they add to the already existing trauma by unnecessary handling or examination, or by introducing strong antiseptic solutions under high pressure.

As a matter of routine treatment, then, I do not hesitate to advise, in cases coming under observation, to remove the detritus early from the uterus by curettage, gently flushing out the cavity by means of the return-current catheter with a weak hot bichloride solution, then introducing a narrow strip of iodoform gauze which is sterile. *Where pus is getatable, get at it,* should be adopted as a homely maxim and be constantly kept in mind. Evacuate pus by vaginal incision, guided by the technique laid down by Pryor. Vaginal section for evacuating pus is a minor operation, yet it may be followed by the same result which attends major operations when one has been faulty in antiseptic technique—namely, death. "That we are dealing with an infection and have pus anyway" is no excuse for ignoring the basic principle of surgery—namely, cleanliness.

In addition, I have given my cases a daily intrauterine douche of a hot weak bichloride solution and noticed a reduction of temperature of at least one degree follow each douche. I would most earnestly condemn the use of morphine in this condition. Septicæmia being of a septic nature, we should avail ourselves of every possible means to keep avenues of escape of septic material open. Morphine shuts them up; besides, it adds to an already existing nausea. Keep the bowels open. If saline preparations are rejected—and of these the best in this condition is the effervescent citrate of magnesium—remember enemata of glycerin and water, or the "Oel Einlaufe" of olive oil as practised by the Germans, or glycerin suppositories.

Begin the administration of antistreptococcus serum as soon as you can procure it, and do this immediately after giving a stimulant, into a sterile area of tissue with a sterile syringe held in sterile hands. When pus is located, it should be evacuated and drained. Now, given a case with an accumulation in the *cul-de-sac* of Douglas, a transverse incision should be made posterior to the cervix, and in the after-treatment of the case care should be exercised to keep the passage patulous, inserting the drainage ahead of the adhesions each day, first washing out the cavity with a weak current of bichloride solution, remembering that strong currents may break down the newly forming adhesions. The advice to give quinine, I think, should be accepted with some reserve. It impairs the oxygen-carrying function of the red blood-cells, but it also favors the phenomenon of phagocytosis; however, the good effects are overbalanced by its tendency for evil. When given at all, it should be combined with ergot, which somewhat prevents cinchonism, and both drugs cause contraction of the uterus, which is a desirable condition for this organ to assume in puerperal infection.

Another source of added infection is the pernicious practice of introducing into wound areas the so-called sterile iodoform gauze put up by pharmaceutical houses. I always, as a measure of precaution, add more iodoform, and then throw the gauze into a bichloride solution, keeping it there until wanted for introduction into the vagina and uterus. Patients always need stimulation, but I enter objection to the routine practice of exhibiting strychnine and whisky in large doses for a very long time for the reason that a patient outwears the effect of strychnine, and instead of a stimulant it becomes a paralyzer. Whisky ultimately depresses and nauseates. I am of opinion that septicæmia cases—in fact, any malady having a tendency to the moribund stage—can be stimulated to death. A happy medium must be sought, with the proper remedy. Not enough stimulation allows the patient to slip under the gate; too much stimulation helps him over the gate. I would advise beginning the administration of strychnine in large doses, from a fortieth to a thirtieth of a grain, and tapering off, and as one tapers off giving in conjunction caffeine sodio salicylate in three- or five-grain doses every three or four hours, continuing this drug after quitting strychnine. Patients after having taken caffeine for some time become restless and complain of insomnia. To combat these I give a powder containing trional, twenty grains, and codeine, a quarter of a grain, at bedtime. Generally the stomachs of septicæmia patients are non-retentive; and if vomiting does not take place nausea is complained of. This condition is aggravated by whisky, so that if the patient has been having whisky I advise its withdrawal and order champagne and ice. The strength of the patient must be kept up by a liquid dietary, of which peptonized milk, broths, beef juice, kumyss, egg-albumen water, and panopepton are examples.

Those who favor the administration of quinine in conjunction with serum gather strength against the infection, if Bordet's observation is correct. He maintains that serum favors phagocytosis; quinine also favors this phenomenon. Hence they may be associated with expectations of good.

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CHRONIC CARBON-MONOXIDE POISONING,

WITH REPORT OF AN ILLUSTRATIVE CASE.

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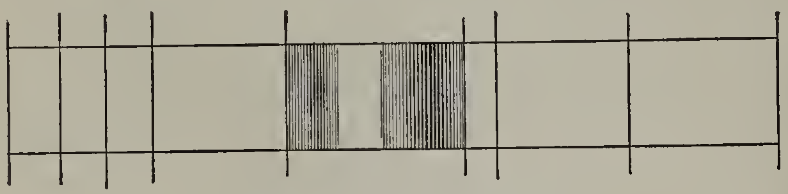
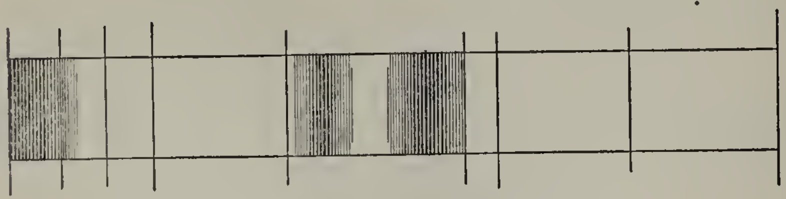
Owing to the possibility of confounding chronic carbon-monoxide poisoning with various other conditions, such as anæmia, acute and chronic gastro-enteric affections, ptomaine and leucomaine poisoning, auto- and other intoxications, etc., it is probable that many cases of this toxæmia escape recognition.

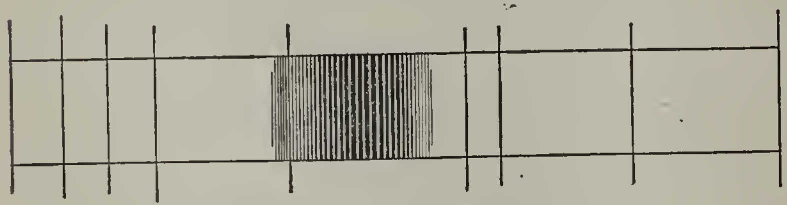
Carbon monoxide, as is well known, forms a very stable chemical combination with hæmoglobin, so that blood once impregnated with this gas loses its normal function of an oxygen carrier. Carbon-monoxide hæmoglobin is of a bright, florid, cherry-red color, and the complexion of an individual acutely poisoned acquires somewhat the same tint. Blood artificially treated with carbon monoxide by passing a stream of coal gas through it shows no tendency to lose the bright-red color, or to become reduced to hæmoglobin. It has been used by pathologists as a substitute for red ink.



Spectrum of oxyhæmoglobin.



Spectrum of carbonic-oxide hæmoglobin.



Spectrum of reduced hæmoglobin.

Stengel, in his excellent work (*A Text-book of Pathology*), divides the specific blood poisons into the following classes:

(*a*) Poisons which act by entering into combination with the hæmoglobin without affecting the corpuscles. Among these are carbon monoxide, cyanogen, and sulphureted hydrogen, to which we may add nitric oxide; the latter forms even a more stable compound than carbon monoxide with hæmoglobin, and has produced a very fatal form of pneumonia.

(*b*) Poisons which disorganize the corpuscles (used in medical practice and the arts). Among these are chlorate of potassium, nitroglycerin, aniline, nitrobenzol, coal-tar derivatives, and arseniureted hydrogen. To this list we may add nitrite of amyl, nitrites, etc.

(*c*) Agents which disorganize the blood and cause parenchymatous changes in various organs. Among these are abrin and ricin.

(*d*) Substances which affect the coagulability of the blood: calcium chloride, carbonic-acid gas, and fibrin ferment increasing it, albumoses decreasing it. I would suggest that the changes in the blood observed in poisoning by the above substances may be divided into four classes, as follows:

Macroscopic.—In which the blood appears of abnormal color, such as the cherry color of carbon-monoxide hæmoglobin, the brown or chocolate color of methæmoglobin, etc.

Microscopic.—Where the cellular constituents are seen to be altered from the normal—poikilocytosis, microcytosis, macrocytosis, unusual pallor of erythrocytes (also presence of normoblasts in attempted reorganization).

Spectroscopic.—In which the characteristic absorption bands are present, such as those of carbonic-oxide hæmoglobin, methæmoglobin, nitrosyl-hæmoglobin, etc.

Chemical.—In which the blood reacts with certain chemical substances in a manner unlike normal blood.

The most frequent cause of poisoning by carbon monoxide is by inhalation of the fumes from burning charcoal (a favorite method of suicide in France) and the inhalation of coal gas and water gas from leaks, sewers, etc.

It would seem that in chronic carbon-monoxide poisoning parenchymatous changes and fatty degeneration occur in various organs (as will be noticed in the urinary analysis of the present case), while it is well known that hæmorrhages into various organs, marked fatty degeneration, and parenchymatous changes have occurred from the absorption or inhalation of many of the poisons mentioned previously.

In chronic poisoning by carbon monoxide the latter substance coexists in the blood with oxygen, so that the hæmoglobin still retains a crippled function of carrying oxygen to the tissues, though in instances where the individual is exposed to a small but constant quantity of the gas in the atmosphere, as from a leaky gas pipe or drain, the effect upon his health is soon felt. The symptoms, though sometimes vague, may be summed up briefly as anæmia, generally of a simple type, with or without leucocytosis, frontal headache, anorexia, tinnitus aurium, vertigo, foul taste in mouth, abdominal pains, very often of a colicky character, constipation, and persistent disorder of digestion. To these symptoms may be added weakness and lassitude, amounting almost to prostration. The patient "never feels well," to use his own words, although he is much improved when in the fresh air and out of doors for a while.

The chronic form differs markedly from the acute, as in the former type of toxæmia the florid countenance is not often seen.

In examining the blood for carbon-monoxide hæmoglobin, especially in chronic cases, some form of spectroscope is indispensable. The method of examining may be briefly outlined as follows: The finger of the individual is pricked, as in other blood examinations, and the drop of blood drawn into a pipette and mixed and diluted with distilled water. It is then placed in a test tube, if using a hand spectroscope, or more conveniently in a cell of special construction, if using a microspectroscope, and the examination begun. The absorption bands are noted and ammonium sulphide or Stokes's reagent is then added to the liquid, and the mixture stirred thoroughly (with a thin glass rod or platinum wire) and slightly warmed. If carbon-monoxide hæmoglobin is present it will be found that the normal reduction to hæmoglobin (reduced) does not take place, but the alpha and beta bands persist and are somewhat closer to the violet end of the spectrum than those of oxyhæmoglobin. Other chemical tests have been used, but for delicacy the spectroscope surpasses them all.

Some of the chemical tests are as follows:

Salkowski shakes the diluted blood with sulphureted hydrogen, which turns normal blood to a dirty green color in a few minutes.

Katayama uses ammonium sulphide and acetic acid in the same manner.

Richter uses formic acid instead of acetic and proceeds as above.

Zaleski adds a few drops of a solution of a copper salt to four cubic centimetres of the suspected sample diluted with an equal quantity of water. With this test normal blood gives a chocolate-brown precipitate, carbon monoxide a brick red.

Rubner finds a similar reaction with lead-acetate solution, and Wetzel gives a similar reaction.

Hoppe-Seyler advocates as a proof of the presence of carbon monoxide the fact that blood exposed to putrefactive changes still shows two absorption bands in the before-mentioned position in the spectrum.

By passing carbon-monoxide gas through a solution of oxyhæmoglobin, adding alcohol and freezing, crystals of carbon-monoxide hæmoglobin separate, and it may be noticed that their color is much more blue than that of oxyhæmoglobin.

Hoppe-Seyler states that it is also unaffected by pancreatic ferment or putrefactive changes. I have found in a solution of carbon-monoxide hæmoglobin that had stood for a long while, crystals and amorphous masses closely resembling hæmatoidin.

It is well to have a specimen of the blood mixed and diluted with water alone before the comparison prism of the spectroscope for the purpose of comparing with the portion treated with ammonium sulphide.

The Sorby and Zeiss microspectroscopes leave nothing to be desired in their construction except perhaps an accurate scale for the measurement of absorption bands, though the importance of the latter in performing these examinations is not great.

To detect small quantities of carbon-monoxide hæmoglobin, L. de Saint-Martin (*Comptes rendus*, 1898, vol. cxxvi, p. 1036) strongly advocates exhausting the suspected fluid twice—first, to get rid of all gases other than carbon monoxide (these are carbon dioxide, oxygen, nitrogen, and traces of hydrogen). A second exhaustion is made to remove the carbon monoxide mixed with traces of carbon dioxide and nitrogen.

The following case came under my observation on June 17, 1899:

Mr. J. W. Lynd, white, aged fifty-two years, had not felt well for a number of years, and now complained of anorexia, nausea, frontal headache, rapid pulse, colicky pains in abdomen, indigestion, and obstinate constipation. His weakness amounted almost to prostration, and he had been confined to his bed for several days in a room which was badly ventilated.

Being struck by the strong odor of illuminating gas when I entered the house, I made on the same morning a spectroscopic examination of his blood and found carbon-monoxide hæmoglobin present, as shown by the position of the absorption bands and the impossibility of reducing them with ammonium sulphide to the single band of reduced hæmoglobin. It was also present in the blood of a sister of the patient, but was absent from the blood of the other members of the family. The rooms of the patient and his sister were poorly ventilated, especially at night. The other members of the family slept upon an upper floor of the house, and their rooms were well aired. This probably, together with the fact that they took a good deal of outdoor exercise, explains their freedom from the effects of the escaping gas. The blood of the patient at the first examination contained 3,700,000 erythrocytes, and a moderate leucocytosis was present.

A differential count of a thousand leucocytes gave the following: Polymorphonuclear, sixty-one per cent.; small lymphocytes, 30.8 per cent.; large lymphocytes, 3.8 per cent.; eosinophiles, 3.6 per cent.; myelocytes, eight per cent.

It will be noticed that a myelocytosis was present; otherwise there is little interest to be attached to the count.

Examination of Urine.—Color, amber; odor, normal; transparency, hazy; sediment, none visible to naked eye; reaction, acid; specific gravity, 1.026; albumin, globulin, albumose, and dextrose negative; urea, three per cent. (by hypobromite method). Urobilin and uric acid normal; bile negative; indican markedly increased;

chlorides normal; phosphates increased; nucleo-albumin and acetone normal.

Microscopical examination showed numerous renal epithelial cells in a state of fatty degeneration; hyaline, fatty, and broad granular casts; squamous epithelium, granular *débris*, and a few cylindroids. This examination shows, I think, the effect of the toxæmia upon the kidney.

A diagnosis of chronic carbon-monoxide poisoning being pronounced, the patient and his family removed to the suburbs, where he was advised to remain in the fresh air as much as possible. He was placed upon a tonic treatment, with bone marrow, and immediately improved. One month after his removal I examined his blood and urine and found them to be in a perfectly normal condition.

A heavy trip hammer operating in the neighborhood had probably been responsible for the continual leakage of gas in the cellar. The premises had been thoroughly investigated and the gas pipes repeatedly repaired; notwithstanding, there was still a leakage of gas.

Desgrez and Nicloux find that carbon monoxide is continually present in the blood of animals confined in large cities, and have made interesting researches on the subject in the city of Paris. I have examined the blood of three dogs that were closely confined in the house and am unable to confirm these researches.

Friedberger and Frohner do not mention the poisoning of animals by carbon monoxide in their work *The Pathology and Therapeutics of the Domestic Animals.*

It is of the utmost importance to detect this gas in the atmosphere, especially where the quantity is so small as not to be apparent by its odor, as in the instance of leakage of coal gas or water gas. The dangers of burning charcoal are too well known to give any caution regarding them.

The excellent method of Vogel may be attempted for the detection of carbon monoxide where its presence is suspected.

Fresh normal blood is diluted with distilled water until it is tinged faintly red, and about three to five cubic centimetres are placed in a flask of the capacity of one hundred to one hundred and fifty cubic centimetres. The flask is then shaken for a minute in the suspected atmosphere, and if carbon monoxide is present the diluted blood will have assumed a bright rose tint. On adding ammonium sulphide and making a spectroscopic examination, the two absorption bands characteristic of normal blood will be replaced by the band of reduced hæmoglobin, but the two bands of carbon-monoxide hæmoglobin will persist unchanged. The delicacy of this test may be increased by using a larger flask.

My object in presenting this paper is to call attention to and emphasize what is probably a more frequent evil than we imagine, and I would strongly urge the use of the spectroscope in cases of obscure affections.

Haldane has pointed out that in the case of Boston, where ninety per cent. of the gas used is water gas, one out of every three hundred deaths is due to accidental poisoning. If this is so, there must be many additional cases of chronic carbon-monoxide poisoning which escape recognition.

In conclusion, I may say that I am forced to disagree with the *Medical Record* of New York (February 24, 1900, p. 322) when it makes the astonishing statement that coal gas is comparatively harmless.

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GUNSHOT WOUNDS.

A REPORT OF GUNSHOT CASES IN THE SPANISH-AMERICAN WAR, AND DEDUCTIONS THEREFROM.

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(*Continued from page 454.*)

Wounds made by the Jacketed, Small-calibre Bullet.—These wounds were made by the Mauser bullet with two exceptions, where the injury was from the Krag-Jorgensen.

The characters of these wounds were as follows:

Mauser Bullet.	Perforating.	Penetrating.	Lacerated.	Total.
Flesh wounds.............	114	19	27	160
Compound fractures.......	36	2	0	38
Total	150	21	27	198

APPEARANCE OF THE ENTRANCE AND EXIT WOUNDS MADE BY THE JACKETED BULLET.

Wounds of Entrance.—With the exception of one lacerated wound, apparently made by a ricocheted bullet turning on its long axis, the wounds of entrance were all small in size and presented two main types.

Those of one type were about 1.25 centimetre in diameter, circular, slightly depressed, the skin at the edges of the wound whitened, and with the appearance of very slight superficial necrosis or infection. These all dried and healed immediately under dressings of iodoform gauze.

The entrance wounds of the other type were smaller, not exceeding 0.5 to 0.75 centimetre in diameter, and were dark in appearance, with absolutely no sign of even the slightest infection. They were not all regularly circular in form, some being slitlike or irregularly notched at the edges.

Wounds of marked oval outline were not observed, the bullet from its small calibre producing nearly circular wounds even when entering the body obliquely.

With the exception of the lacerated wound above referred to, none of the wounds exhibited evidence of inflammation either at entrance, exit, or in the course of the bullet, except those which had been subjected to operative interference at the field hospitals.

Wounds of Exit.—The most marked peculiarity of these wounds was their small size. They were, as a rule, slightly irregular in outline; a few of them larger than their corresponding entrance wounds, but the majority were of equal size or smaller.

In many cases it was not possible to determine from inspection which was the wound of entrance, especially in those cases where the wounds were of the extremely small kind. In these cases the wound of entrance could only be determined by questioning the wounded man. While, as before stated, many of the wounds of entrance had the appearance of slight superficial infection, the wounds of exit were, with extremely few exceptions, entirely aseptic, the slight infection from the clothing or bullet apparently having been conveyed to the wound of entrance only, and the course of the bullet and the exit wound were clean.

Where multiple wounds were produced by the same bullet, the second wound of entrance and exit differed in no marked particular from the wound first made. In one case (No. XXV), where the bullet passed through the chest of one man and the arm and chest of another, the entrance wounds in the arm and chest of the second man were small and aseptic, and differed in no way from those made by a bullet which had passed through no other obstacle.

In the great majority of cases, contrary to what might have been expected, the passage of a bullet through a bone did not affect the appearance of the exit wound, the wound in those cases exhibiting no difference from those in which the bullet had passed through the soft parts only.

Effects of the Compound Bullet on the Soft Parts.—There were several interesting facts noted regarding the effect of the Mauser bullet on the soft parts.

First of these was the slight disability from wounds through large parts, provided no important nerve or vessel was injured, results strikingly different from those which would have obtained with the large-calibre lead bullet. Wounds through the neck, fleshy part of the arm, and parietes of the chest gave little trouble, and men with wounds deeply through the buttock, thigh, or leg walked with little difficulty, at most using a cane only. Men with flesh wounds stated that when wounded the sensation was that of having been struck with a heavy cane, while, when a bone was struck, the sensation was like a blow from a heavy iron bar or club.

Where the soft parts only were involved there was no external evidence indicating any difference in the amount of tissue destruction produced at different ranges.

The two following cases strikingly illustrate both the slight disability from wounds through the soft parts and their aseptic nature:

CASE XIII. *Aseptic Perforating Mauser-bullet Wound of the Testicle and Thigh.*—Lieutenant J. A. C., First United States Volunteer Cavalry, was wounded by a Mauser bullet at about three hundred yards' range. The bullet entered the right side of the scrotum and passed through the right testicle, behind the left testicle, then entered and passed deeply through the right thigh posterior to the femur.

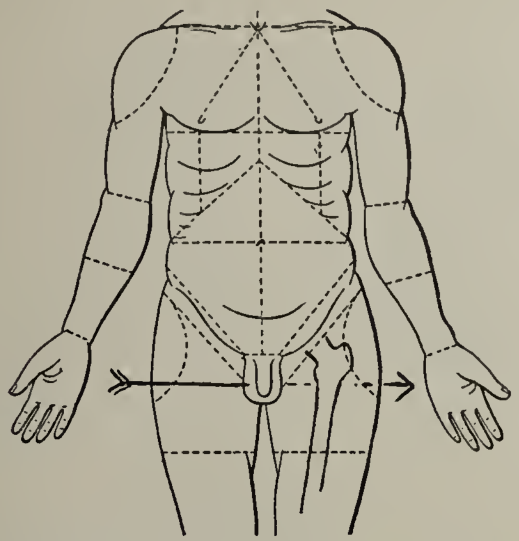

FIG. 3.—Lieutenant J. A. C., First United States Volunteer Cavalry.

On his arrival at the hospital all the wounds were aseptic and nearly healed. He was not confined to his bed, and, though he walked with some difficulty, he used a cane only. The right testicle was of double the normal size, quite hard, and sensitive, but with no appearance of infective inflammation. No treatment was indicated other than suspension of the testicle, and he left the hospital July 7th for the North. On November 22d he writes that he is perfectly sound so far as he is able to determine, and that there is no atrophy of either testicle.

This case demonstrates forcibly the asepticity of Mauser-bullet wounds from the known difficulty of complete sterilization of the scrotum on account of the depth of the skin rugæ, the deep sebaceous glands, and the favorable opportunities for infection given by the loose and not overvascular tissue.

In the following case the immediate and resulting disability was considerable, but was slight to what might have been expected from the course of the ball; also, it is probable that the soft parts were not alone involved, and that the greater disability of the left leg was due to a perforation of the femur by the ball.

CASE XIV. *Severe Perforating, Aseptic Mauser-bullet Wound of Both Hips and Perinæum.*—Private A. H. D., Troop D, First United States Volunteer Cavalry, was wounded at three or four hundred yards by a Mauser bullet which entered an inch and a half below and an inch posterior to the greater trochanter of the right femur, passed behind the femur, then through the perinæum, and emerged directly over the left femur, two inches below the great trochanter.

From the location of the exit wound directly over the femur, and from the pain in the part, it was thought probable that the left femur was perforated without fracturing, though no probing was done to determine the fact. When the patient reached the hospital, the entrance and exit wounds were aseptically closed under a scab. The right leg could be used to some extent; the left leg was useless and gave considerable pain. The perinæum and scrotum were much ecchymosed, the bullet having passed not deeply below the surface of the perinæum. There was no evidence of injury to urethra or rectum. The day after his arrival he developed tertian malarial fever which, like most of the malarial fevers which originated in Cuba, was rather difficult to control, but in about two weeks he was able to be up and move about on crutches, using his right leg fairly well. The left leg improved but slowly, and when he was transferred north on the *San Marcus,* August 22d, he was still unable to use it. In November he writes: "Am unable to walk without crutches, owing to intense pain when weight is placed on left leg. Right leg is not very troublesome, though it aches and smarts quite frequently."

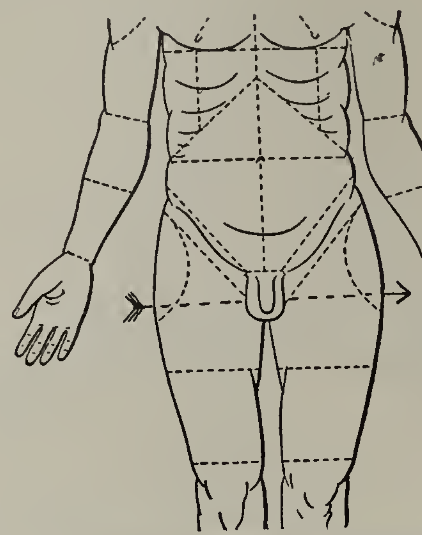

FIG. 4.—Private A. H. D., First United States Volunteer Cavalry.

Considering the course of the bullet through both thighs and the perinæum, the amount of grave injury was remarkably small. That a bullet could take the course it did in this case and the recipient of the injury be able to move about in a few days on crutches was illustrative of many instances where only local trouble resulted, though from the course of the small-calibre bullet injury sufficiently grave to threaten life would naturally have been expected.

Wounds of Blood-vessels.—But one case was observed in which an artery had been wounded.

When full statistics shall have been obtained of the wounds, it will be of great interest to know in how many cases this complication occurred and recovery resulted. Arguing from this single case which came under my observation, convalescent wounded with this complication were rare.

CASE XV. *Perforating Mauser-bullet Wound involving Radial Artery; Suppuration; Recovery.*—Private T. R., Battery M, Fourth United States Artillery, was wounded at about one thousand yards' range by a Mauser bullet, which passed from before backward through the upper third of the forearm close to the median nerve and severed the radial artery. The wound bled profusely, but the bleeding was checked by the application of a tourniquet, and at the field hospital by packing and pressure under a dressing. On his arrival at the general hospital the wound was suppurating. It healed rapidly, but there was some impairment of power in the forearm, apparently due to involvement of the median nerve in the cicatrix.

Wounds of Nerves.—There were two cases besides the above in which nerve injury was a complication, and from these it would seem that nerves do not evade the compound bullet, but are easily severed by it. One interesting case of nerve injury is given in Case XIX. The following is the third case observed:

CASE XVI. *Aseptic Perforating Mauser-bullet Wound, with Nerve Injury.*—Private W. B., Company A, Sixteenth United States Infantry, wounded July 2d by a Mauser bullet, which entered the top of the left shoulder just in front of the outer end of the clavicle, ranged downward and backward near the shoulder joint internal to the humerus, and passed out on the back of the arm at the junction of the middle and upper thirds. On his arrival at the hospital the wounds of entrance and exit were aseptic. There were no symptoms except loss of power, confined, so far as could be determined, to the deltoid and latissimus dorsi muscles. The muscles disabled and the course of the ball indicated that the circumflex and subscapular nerves had been severed. He has since been discharged from the service for loss of power in the muscles above named.

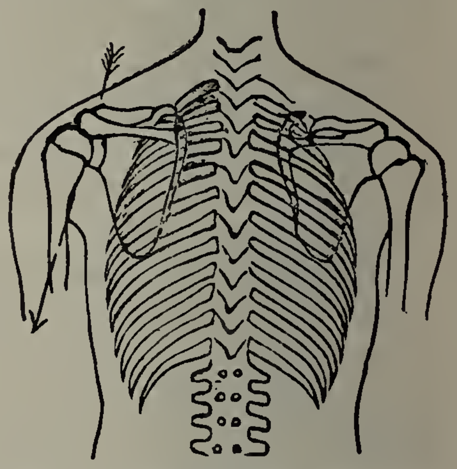

FIG. 5.—Private W. B., Sixteenth United States Infantry.

Wounds of the Joint Capsule.—There was one case in which the capsule of the joint and the tissues about it were wounded without bone injury, and one in which the bone was also possibly involved. In both cases disability resulted from fibrous, partial ankylosis. From these cases it would seem that wounds of the joint capsule, even though aseptic, are liable to produce some impairment of function, motion being interfered with by the cicatricial tissue formed in the track of the wound.

CASE XVII. *Aseptic Perforating Mauser-bullet Wound, involving Capsule of Elbow Joint.*—Private R. K., Company C, Seventh United States Infantry, was wounded July 1st, at three or four hundred yards' range, by a Mauser bullet, which entered the upper third of the ulnar side of the forearm, ranged backward and outward across the front of the elbow joint, wounded the capsule, and emerged on the outer side of the arm

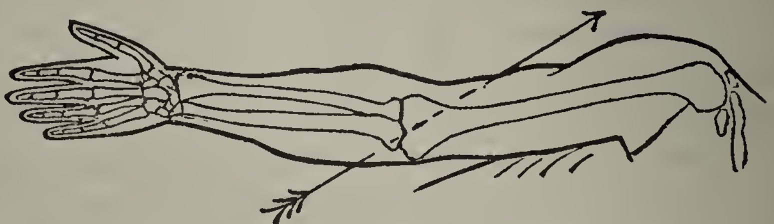

FIG. 6.—Private R. K., Seventh United States Infantry.

in its lower third. This, like many other wounds, is remarkable for the close proximity of the track of the bullet to important vessels.

The entrance and exit wounds were aseptic and healed rapidly, but there was considerable cicatricial contraction along the bullet track, which produced impaired extension. An extemporized extension apparatus was applied to counteract this, which it did to a great extent. It is probable, however, that some impairment of motion is permanent, as his company commander writes in December: "The arm is weaker than the left, and there is a slight ankylosis of the elbow."

CASE XVIII. *Perforating Mauser-bullet Wound, involving the Elbow Joint.*—Private A. C., Company H, Thirteenth United States Infantry, was wounded July 1st, at seven hundred yards' range, by a Mauser bullet, which entered the radial side of the forearm at the middle third when the arm was midway between pronation and supination, passed backward and inward, fracturing the radius and wounding the capsule of the elbow joint, and passed out to the left of the acromion process.

On his arrival at the hospital the entrance and exit wounds were aseptic. The arm was put up on an internal angular splint, and at the end of two weeks careful passive motion was begun and later an improvised extension apparatus was applied to overcome threatened ankylosis of the joint. On August 23d, when he was transferred north, the radius was firmly united and rotation was nearly perfect, but flexion and extension were limited. The disability is probably permanent, as the surgeon in attendance writes in December: "Flexion and extension incomplete; can not lift more than four pounds. The arm is practically useless, save for minor personal use."

Perforation of Important Parts and Organs by the Compound Bullet.—In wounds by the compound bullet a most marked circumstance was the passage of the bullet through parts where it would not have been thought possible that a missile could pass without fatal, or at least most serious, injury. Yet cases were observed of deep perforation of the neck where it was a marvel that vital structures had not been injured, and other cases where the bullet had passed through the thoracic or abdominal cavities with little apparent inconvenience to the recipient of the injury.

The following cases of deep perforation of the neck and of the thorax and abdomen are illustrative:

CASE XIX. *Deep Perforating Mauser-bullet Wound of the Neck, with Nerve Injury.*—Captain C. W. T., Ninth United States Cavalry, was wounded July 2d by a Mauser bullet at about three hundred yards' range. The bullet entered the right side of the neck at the inner edge of the sterno-mastoid muscle at the level of the upper border of the thyreoid bone, passed downward, backward, and to the left, and emerged an inch to the left side of the seventh cervical spine.

On his arrival at the hospital the entrance and exit wounds were aseptic and characteristically small, and there was no evidence of inflammation along the bullet track. The left arm was swollen and partially paralyzed and sensation was diminished. The areas of paralysis and anæsthesia indicated that the bullet had severed the fifth or sixth cervical nerve.

There was considerable pain in the arm, forearm, and hand, but no other special symptoms, and he was otherwise in good condition. He was able to travel, and left the hospital July 11th for the North. In the latter part of November he states, in reply to inquiry, "Left arm crippled but improving; very painful."

In view of the anatomy of the neck, it would seem that his head must have been turned strongly to the left when he was struck, otherwise the ball would have injured the spinal column; but even with his head turned it is hardly conceivable how the ball passed outside the line of the transverse processes of the vertebræ.

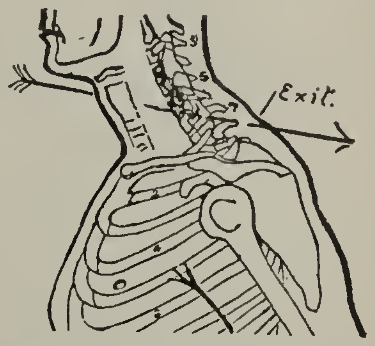

FIG. 7.—Captain C. W. T., Ninth United States Cavalry.

CASE XX. *Deep Perforating Mauser-bullet Wound of the Neck, with Marked Pain.*—Captain J. B. R., Twentieth United States Infantry, was wounded July 1st by a Mauser bullet at about three or four hundred yards' range. The bullet entered at the lower angle of the left superior carotid triangle, passed downward and backward, and emerged just over the left posterior superior angle of the scapula.

On his admission to the hospital the entrance and exit wounds were aseptic; there was impairment of motion of the left arm, apparently due to muscular soreness in the track of the bullet and not to severance of a nerve. Pain was great, could be controlled only by repeated hypodermics of morphine, and seemed to be due to irritation in the tract of the wound. There was some induration and swelling about two inches backward from the wound of entrance, and this, with the pain, caused suspicion that there might be a lodgment of a bit of cloth or some infecting material, and an incision and thorough exploration were made July 17th, under anæsthesia, but nothing was found. The operation wound healed by first intention and the pain gradually decreased, but had not entirely disappeared when he left for the North July 23d. On December 2d he wrote: "Have recovered use of left arm, though still weak."

CASE XXI. *Deep Perforating Mauser-bullet Wound of the Neck.*—Corporal J. F., Sixteenth United States Infantry, was wounded July 1st by a Mauser bullet at about five hundred yards' range. The bullet entered just behind the anterior border of the right sterno-mastoid muscle at the level of the thyreoid cartilage, ranged downward and backward, and emerged at the spinous process of the seventh cervical vertebra, just grazing the bone. Though the bullet passed quite deeply, there were no symptoms other than occasional cephalalgia, which the patient attributed to the shock from the ball striking the spinous process of the vertebra.

CASE XXII. *Deep Perforating Mauser-bullet Wound.*—Private J. R., Troop B, Tenth United States Cavalry, was wounded July 1st by two bullets at about six hundred yards' range. One bullet entered the top of the shoulder, ranged downward and outward, and passed out about the centre of the left biceps muscle. The other bullet entered the left side of the neck just above the middle of the clavicle, passed through the neck, and emerged on the right side through the sterno-mastoid at the level of the thyreoid cartilage.

It is remarkable that the bullet passed through the neck as it did without injury to the œsophagus, trachea, or other important structure, but there was no evidence of any such injury, and when received at the hospital there were no symptoms of note of any kind, and he was apparently entirely well when furloughed on August 1st.

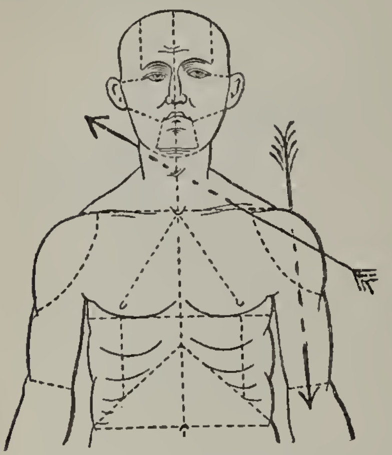

Fig. 8.—Private J. R., Tenth United States Cavalry.

On December 17th the surgeon of his regiment reports: “Some stiffness of muscles of shoulder and difficulty in placing hand on top of head. Symptoms of wound of neck entirely subjective; soldier claims difficulty from breathing and pressure over trachea, but examination reveals no adhesion and but slight induration.”

Wounds of the Body Cavities by the Compound Bullet.—Three cases were observed where the body cavities had been penetrated and their contents injured—one of the skull, one of the thorax, and one of the abdomen. These cases were all noticeable for the absence of grave symptoms and for rapidity of recovery.

To these is to be added one case of brain injury without perforation or apparent fracture of the skull in which disability resulted.

Case XXIII. *Compound Bullet Wound of the Head.*—R. S. V., seaman, United States Navy, one of a boat's crew engaged in cutting the cable at Cienfuegos, May 11th, received four Mauser-bullet wounds at unknown range. One bullet perforated the scalp in the occipital region and cut a furrow through both tables of the skull as neatly as though done by a carpenter's gouge, at the same time cutting the dura mater and lacerating the brain. The patient was brought to Key West, and on the morning of the 13th the wound was laid open under aseptic precautions. Brain matter was oozing from the opening in the skull, but, as there was no depression of the inner table, the wound was thoroughly cleansed and closed, with the exception of an opening in which a small iodoform-gauze drain was placed. The patient complained of some headache, which gradually disappeared, and in a few days he was up and about the hospital.

The history of the receipt of the injury and the result of the case is given by Lieutenant Winslow, United States Navy, in his account of the cable cutting at Cienfuegos in the *Century* for March, 1899, as follows: “As I faced the shore to look at the trenches, a seaman, Robert Volz, standing in the stern sheets of my boat, collapsed, then struggled to his feet, and immediately after sank in the bottom of the boat, a gaping wound six inches long in his head, two bullet holes through his body, and a bullet in his shoulder, probably the result of machine-gun fire. Had the gun been depressed a little more, hardly a man in the boat would have escaped being hit. This man lived, and ten days later, while the *Nashville* was at Key West, he ran away from the hospital on shore, came off to the ship in one of our boats, and reported.”

The course and outcome of this case would indicate that the compound bullet may be a very humane missile in some instances, and also that the application of antiseptic methods will perhaps give as brilliant results in those cases of brain injury which admit of treatment as they have in surgery generally.

The other case of wounds of the head, with symptoms of cerebral complications, did not result so well, though the initial injury was apparently much less severe.

Case XXIV.—Private J. M., Troop D, Sixth United State Cavalry, was wounded July 1st by a Mauser bullet, which produced a perforating scalp wound, the bullet passing deeply through the tissues in the right occipital region. The wounds of entrance and exit were about three inches apart.

July 5th.—On his arrival at the hospital he complained of headache and seemed dull and stupid; temperature and pulse normal; complained of dimness of vision, and there was commencing diverging strabismus.

7th.—Severe headache, dimness of vision, marked divergent strabismus, marked hebetude; lay in bed and answered only when obliged to. Wounds of entrance and exit practically aseptic; no rise of temperature or pulse. The symptoms had increased gradually after admission and seemed to point to a probable fracture of the skull and intracranial complications. On laying open the track of the ball it was found that it had passed in a direct line, just grazing the occipital bone and denuding it of periosteum for the distance of about an inch. There was no fracture, and in view of the fact that when laid open the course of the bullet was direct, and showed only lateral impingement against the bone, it was thought probable that the cerebral symptoms were due to concussion of the brain from the lateral oscillatory shock of the bullet at high velocity, rather than to fracture of the internal table of the skull or to intracranial hæmorrhage. Trephining was, therefore, not done, and the wound was dressed aseptically. The patient's condition improved rapidly after the operation, the headache, dimness of vision, and divergent strabismus gradually disappeared, and he was apparently entirely convalescent when furloughed home on August 7th.

This case was particularly interesting on account of the marked symptoms and their late development, and, though they seemed to point distinctly to cerebral irritation or compression rather than concussion, I could not think trephining indicated after the course of the bullet had been determined by laying open the wound. The man has since, however, been discharged for epilepsy thought to have been due to the injury, and it would perhaps have been better to have trephined and determined whether or not there was injury of the internal table of the skull. In a similar case I would advocate such procedure in view of the fact that, though the immediate symptoms disappeared, disability afterward resulted.

Perforating Compound Bullet Wound of the Thorax, with Involvement of the Lung.—Like the perforating wound of the brain given above, this case was most noticeable on account of the quick return of the patient to duty; for, though the bullet passed through the wounded man's arm and chest, he insisted upon returning to duty, and rejoined his troop within ten days after the receipt of the injury.

Case XXV.—Lieutenant W. C. S., Sixth United States Cavalry, was wounded by a Mauser bullet at a range of about four hundred yards. The bullet passed through the body of a man standing directly in front of him, entered the outer side of his right arm midway between the elbow and shoulder, passed through the arm behind the bone in a line parallel with the ground, entered his right side two inches and three eighths below the axilla in the mid-axillary line, and emerged a quarter of an inch to the right of the spine.

There were great pain in breathing and a troublesome and painful cough, but no other noticeable symptoms.

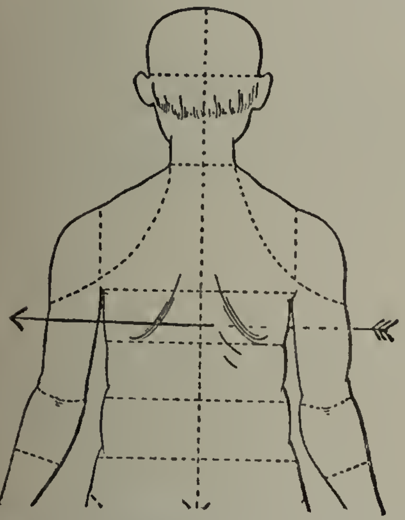

Fig. 9.—Lieutenant W. C. S., Sixth United States Cavalry.

In spite of the wound this officer left the hospital two days after his arrival and returned to Santiago. In December he writes that he is entirely well except that his arm troubles him when he attempts to raise it very high or when it receives a severe wrench.

Compound Bullet Wound of the Abdominal Cavity.—The one case of this kind also showed well the humane effect of the bullet in some cases.

Case XXVI.—H. H., seaman, United States Navy, was wounded in action off Cienfuegos, Cuba, May 11th, by a Mauser bullet, exact range unknown. The bullet entered the right hypochondriac region, passed through the right lobe of the liver, and made its exit at the back about two inches external to the spinal column. The shock was very severe, but there was no evidence of internal hæmorrhage, at least none of any account. He was brought to Key West on May 14th and placed in the hospital at Key West Barracks, where I saw him two days after the receipt of the injury. He had rallied from the shock at that time, his pulse and temperature were normal, and his general appearance excellent. As the wound was forty-eight hours old, and the condition of the patient almost marvelously good, laparotomy was, of course, entirely contraindicated.

On May 28th he was transferred to the general hospital. When admitted, the wounds of entrance and exit were healed, he had been walking about for several days, and complained of nothing except a sensation of weakness about the hepatic region. On June 1st he was transferred north on the *Solace*. His further history, as given by the Naval Hospital records, says: "Suffered at intervals from nervous and bilious attacks, and was invalided from the service July 28th."

These three cases of wounds of the body cavities certainly show that under some conditions the effect of the jacketed bullet is most humane.

The excellent result in the case of abdominal wound is in line with the result in several other cases treated by the expectant plan during the late war, while all cases operated on died.

Laparotomy for gunshot wounds, in order to be effective, has to be done within a very short time after the receipt of the injury.

Previous to the experience gathered in this war, many writers, arguing from the standpoint of laparotomy in civil hospitals where there are all the appliances necessary to asepsis, held that laparotomy for gunshot wounds would become a recognized principle in military surgery. The attempt to carry out this principle was disastrous, and, as several cases of abdominal wounds recovered under the expectant treatment, it may now be considered as settled that laparotomy should only be resorted to in those cases in which the surgeon is sure that death will occur without it.

Penetrating Compound Bullet Wounds.—Of the one hundred and ninety-six jacketed-bullet wounds, eighteen, or a little over nine per cent., were penetrating. The percentage of penetrating to perforating wounds, of which there were one hundred and fifty-one, was somewhat higher, being a little over eleven per cent. This rather high percentage of penetrating wounds was undoubtedly largely due to the long range at which the wounds were received, or to their having been made by bullets which had lost much of their velocity from having first struck other objects. This is attested by the fact that of the eighteen penetrating cases, nine lodged very superficially and were removed at the field hospitals; while of the five which lodged more deeply, and which I located by the Röntgen ray and removed, two were slightly deformed and were lying butt end foremost in the part (Case XXVII) is illustrative), and two were fragments of bullets, indicating that they had struck some other object before entering.

In several instances lacerated wounds were made by penetrating bullets. Of the cases given below, Cases XXVIII and XXIX are illustrative of this class. In Case XXIX the laceration was so great that the wound was thought to have been made by a fragment of shell until the fluoroscope revealed a Mauser bullet. From the laceration and lodgment it is thought that the ball must have ricocheted and been turning on its long axis when it struck the shoulder.

These cases show that the penetrating compound bullet when ricocheted makes wounds of entrance as liable to be infected as those made by lead bullets.

The four unlocated bullets were all classed as Mauser, though some of them may have been shrapnel, as in Cases VI, VII, and VIII. Case XXX of the unlocated bullets is interesting on account of the aseptic wound and the resulting disability. In this case the symptoms indicated that the spinal column was injured, and it was unfortunate that the bullet could not be located.

Taken together with the cases of penetrating shrapnel bullets, these cases show a class of gunshot wounds unlike the aseptic perforating wounds made by the compound bullet, and which require for treatment the resources of modern surgery.

Case XXVII. *Penetrating Mauser-bullet Wound, with Compound Fracture of Right Radius.*—Private J. C., Company C, Thirteenth United States Infantry, was wounded July 1st, at an estimated range of four hundred yards, by a Mauser bullet, which entered the posterior and outer aspect of the forearm at the lower third, passed upward and inward through the ulna, and lodged near the internal condyle of the humerus, beneath the flexor profundus digitorum, where it was located by the fluoroscope and removed July 28th. The fracture united well, and he wrote in November, 1898, that the arm could be freely used.

When this case was first examined by the fluoroscope, the static machine, from the excessive dampness of the atmosphere, was not working well, and what was thought to be a bullet was dimly seen directly over the fracture. This was cut down upon July 9th, under aseptic precautions, when the supposed bullet was found to be a fragment of bone. This was removed, and the wound healed by first intention. Subsequent research, with better light, revealed the bullet, and it was removed.

Case XXVIII. *Lacerated, Penetrating Mauser-bullet Wound.*—Private P. A. H., Company G, Twenty-fourth United States Infantry, was wounded July 1st by what was probably a ricochet ball, as it split the upper lip, producing a lacerated wound, and lodged superficially just beneath the lip in the tissues over the superior maxilla. It was removed at the field hospital, and the wound healed without trouble.

Case XXIX. *Lacerated, Perforating, Mauser-bullet Wound; Fracture of Clavicle; Infection.*—Private J. R. K., Troop L, First United States Volunteer Cavalry, was wounded June 24th by a Mauser bullet, which entered over the clavicle at the junction of its outer and middle thirds. No wound of exit.

The entrance wound was about three inches long, and so lacerated that it was thought that the injury had been done by a fragment of a shell. The fluoroscope, however, showed a Mauser bullet just back of the left border of the sternum at the second intercostal space. The large size and laceration of the external wound indicated that the ball had ricocheted. As the clavicle was badly shattered and the wound much inflamed and suppurating, it was thoroughly cleansed under anæsthesia and all loose fragments of bone removed. It healed very slowly, and a small sinus still existed when the patient was transferred to New York, August 23d. There he was admitted to the Roosevelt Hospital, where Dr. Robert Abbe again cleaned out the wound and took a radiograph of the case. No attempt was made to remove the bullet, as it was doing no harm and its exact depth within the chest wall could not be determined, though observations made with the fluoroscope indicated that it lay close beneath the sternum. I was informed by Dr. Abbe that the patient left the Roosevelt Hospital without leave, the wound still unhealed, but very small.

Case XXX. *Penetrating Gunshot Wound; Resulting Partial Paralysis.*—Private E. E. C., Company A, Tenth United States Infantry, was wounded July 1st in two places. One ball passed from before backward and somewhat downward through the middle third of the left leg. This wound healed rapidly and produced but little inconvenience. Another bullet entered between the sixth and seventh ribs, left side, in the mid-axillary line, passed backward, and probably lodged in the lumbar region. He complained of pain, and there was some impairment of power, in both lower limbs. Unsuccessful attempts were made to locate the bullet with the fluoroscope, but this was a case in which the static machine, working in the damp air of Key West, failed in penetration.

When the hospital was broken up the patient was transferred north, and was discharged in January, 1899, for disability. When discharged, the surgeon stated that he had "partial motor paralysis of the lower extremities, no loss of sensation, and was unable to stand without crutches."

(*To be concluded.*)

SOME CRITICAL AND DESULTORY REMARKS ON RECENT LARYNGOLOGICAL AND RHINOLOGICAL LITERATURE.

By JONATHAN WRIGHT, M. D.,
BROOKLYN.

(*Tenth Paper.*)

TUBERCULOSIS (*continued*).

It is a familiar attitude for the modern historian of the progress of civilization to stand amazed when he considers the enormous contributions made to our positive knowledge in this century. The bursting of the ecclesiastical and civil bonds which bound the human intellect of the eighteenth century resulted in changes in the nineteenth which none could foresee, and which it is even now impossible for us at the threshold of the twentieth to realize. In spite of the multiplication of new problems which the solution of each former problem reveals, the number of workers at each constantly increases. In order that we should not be buried beneath an accumulation of unclassified observations; in order that as few of the discovered facts as possible may be lost; in order that as many as possible of the errors may be weeded out; in order, finally, that our grasp of the laws which govern phenomena may keep pace with their revelation, it is necessary that the results of this ceaseless intellectual and physical activity should be subjected to constant criticism and review. There is no problem of medical science to which this general statement is more applicable than to the various questions involved in the study of tuberculosis. There is no problem in medicine so fraught with the interests of the human race in their constant struggle to escape premature death and needless suffering. These considerations therefore may form an excuse for taking up so much of the space in these papers with a discussion of that part of the problems of tuberculosis with which laryngologists are especially concerned. That part, of course, is inextricably interwoven with other parts, and the whole subject forms in itself a part of biology in general. A more complete review of this part of the subject may be found in the late address of Chiari, delivered before a tuberculosis commission in Munich,* and even from this skilled *exposé* it will be seen how difficult it is to give a well-digested review of the subject if any attempt is made at completeness.

A recent communication of Viquerat † has a most important bearing upon the principles upon which are based our conception of the nature of tuberculosis. As the result of numerous and extended researches, which he promises later to report in detail, he says that "tuberculin, glycerin extract, TO or TR is nothing but a watery solution of an alkaline succinic (amber) acid salt, costs nothing, and may be found in every pharmacy."

"Further researches, which will soon be published, show that succinic acid plays the principal part in the tuberculosis question; the tubercle bacillus, or rather the succinic-acid bacillus, does not form a toxine, and works in this connection much more as the producer of a diathesis like gout than as a true toxine-forming variety of bacillus."

It is hardly necessary to say that if this is true it opens a new field for constructive research and a new opportunity for destructive criticism. It certainly is in line with the failure of innumerable and persistent attempts to manufacture an immunizing substance outside of the body which will check the pernicious activity of the tubercle bacillus within the body. Whether Viquerat's assertion will be confirmed or refuted remains to be seen. His investigations, concerned as they are with the chemical constitution of tubercle bacilli, are in the domain of organic chemistry, from which we may justly expect so much and from which as yet we have derived so little. If, however, we have few data from this field of bacteriological study, the supply from other directions is undiminished and of considerable interest.

Cornet has published some experiments on guinea-pigs to uphold his contention of the importance of dried tuberculous sputum in the form of dust as an ætiological factor in the production of human tuberculosis.‡ After considerable difficulty, owing to the tendency of the sputum to absorb moisture, he succeeded in infecting a number of the animals. He also found that he himself, in spite of precautions, had inspired into his nose tubercle bacilli. Most of the guinea-pigs died, as did also another guinea-pig into whom he injected his own nasal mucus, containing tubercle bacilli. Cornet himself escaped without presenting the slightest evidence of tuberculous infection. We have long known that guinea-pigs could be infected in this way, but the conclusions which I should draw from such experiments would be these:

1. It is possible to infect guinea-pigs by means of a carefully arranged apparatus for compelling them to breathe tuberculous dust blown into their noses and mouths, especially the latter.

2. It is difficult for even the most skilled experimenter to prevent it, when present in the air, from entering the respiratory passages.

3. Such a high contagionist as Cornet seems to be immune, and in his own person has furnished the most striking experimental proof of the contentions of the low contagionists—*i. e.*, that while the tubercle bacillus is an indispensable factor, it is not by itself a potential one in man.

It must be confessed, however, that Cornet demolishes Flügge's assertion that the bacilli, sprayed into the air by coughing, sneezing, etc., amount to much in the way of transmitting tuberculosis from man to man. By a few well-chosen arguments he demonstrates the futility and the impracticability of B. Fraenkel's recommendation that all patients with phthisis pulmonalis should be urged to wear masks in front of their faces. A very interesting discussion of this subject may be found in the same numbers of the journal.

After a consideration of the ways in which a bacillus may be brought to the surface of the mucous membranes, a consideration of the ways by which it penetrates them is naturally in order. I have elsewhere had occasion to refer to the excellent work of Dr. Goodale,* of Boston, in which he succeeded in demonstrating that the lymphoid material of the faucial tonsils, or rather their covering of epithelium, could absorb the insoluble grains of carmine placed, by means of an emulsion syringed through a blunt cannula, in the tonsillar lacunæ.

Hendelsohn † has more recently shown that the same absorption takes place when various powdered substances are blown upon the surface of the pharyngeal as well as of the faucial tonsils. This would be of small practical interest, of course, if it did not help us in our knowledge as to the probability of the surface acting in the same manner toward various bacteria, and especially toward the tubercle bacillus. It has been shown that streptococci rubbed on the surface of the tonsillar tissue of animals will subsequently be found to have infected them. I do not understand that this latter experiment has been attempted in man, for obvious reasons, but non-pathogenic bacteria, tried in the same way in man, have failed to give positive results. It will be remembered that Hodenpyl ‡ obtained negative results from rubbing atropine on the faucial tonsils. The inference from his experiments with atropine that bacteria or dust particles would also fail to be absorbed seems therefore to have been unwarranted. There is one expression used in many of the treatises on this subject which is misleading. Writers constantly refer to the *function* of the tonsils. Now, I suppose that the term "function" is so universally conceived as the physiological attribute of a normal organ that we are naturally, at least for the moment, led to think of the tonsils as normal structures. As a matter of fact, we might as well speak of the function of corns. While certain lymph nodes exist normally in the folds which the pharynges of young human beings regularly present, we can not too strongly insist upon the correctness of the view that the tonsils are pathological entities when they can be demonstrated clinically. Therefore what recent work has shown is that hypertrophied lymphoid tissue will absorb dust and possibly bacteria. I am unacquainted with any experiments showing how the normal lymph nodes, from which the tonsils spring, act toward these particles, nor have I seen in any of the reports any account taken of the bacteria or dust which may pass through the mucous membrane around the lymphoid structures, or in other parts of the respiratory tract. While, therefore, the hypertrophied tonsil has been shown to absorb dust particles, and probably to allow the entrance of bacteria into the human organism, it does not follow that on this account alone it is to be condemned as a source of danger to the individual because, as is to be inferred from what I have just remarked, it has not been shown that after ablation the region from which it grew would be any less adapted to the absorption of noxious elements. *A priori*, we might suppose normal lymph nodes to possess a greater absorbing power than hypertrophied ones. It is superfluous to say that there are better and more conclusive indications for amygdalotomy and the removal of adenoids. Let us not, therefore, fall into the possible error of regarding tonsils and adenoids as the exclusive gates of entry in the pharynx for the tubercle bacillus. In Hendelsohn's experiments, as well as in those of Goodale, the dust particles passed not only between the epithelial cells, but could be seen within them. In Hendelsohn's plates they are seen to be very much more abundant just beneath the epithelium. I do not know whether or not we are to argue from this that they pass through the epithelium more rapidly than they can be carried away by the lymph and blood channels.

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* *Berl. klin. Woch.*, No. 45, 1899.

† *Centralbl. f. Bakt.*, Band xxvi, No. 10.

‡ *Berl. klin. Woch.*, Nos. 11 and 12, 1899.

* Published in the *Archiv f. Laryng.*, Band vii, p. 90.

† *Archiv f. Laryng.*, Band viii, p. 476.

‡ *Journal of the American Medical Association*, March, 1891.

Intimately connected with this question is the subject of "latent tuberculosis" of the tonsils, both pharyngeal and faucial. L. Lewin * has published the results of his investigations in regard to the frequency with which the pharyngeal tonsil is the seat of latent tuberculosis. He found in two hundred cases evidences of tuberculosis in ten. He sums up the cases reported by other observers who have, except Broca, obtained similar results (Lermoyez, Broca, Gottstein, Brindel, Pluder and Fischer, Luzzati, Hinitzsch, Wex), and, adding them to his own, obtains a total of nine hundred and five cases examined, latent tuberculosis being found in forty-five, or about five per cent. of the cases. It must always be remembered, in studying statistics of this kind, that they are indications simply of the percentage obtaining in given localities and may not be applicable elsewhere. It is said that both tuberculosis and syphilis are more common in the continental cities of Europe than in England, and much more so than in this country. Lewin's tables are not entirely free from the charge of being somewhat selective. As we shall see later on, the technique of the investigations on which these figures are based is open to criticism.

Without stopping, however, to enlarge at present upon possible fallacies, let us accept Lewin's figures—*i. e.*, five per cent. of "adenoids" contain foci of latent tuberculosis. Let us also accept as accurate the often-repeated assertion that one in seven of the human race dies of tuberculosis, and that one in two or three bodies at post-mortems is found on careful examination to present evidence of having had a tuberculous process going on at some period during life. Now, the most that can be claimed from the statistics of Lewin is that one in twenty cases having lymphoid hypertrophies in the nasopharynx presents evidence, not macroscopic but microscopical, of tuberculosis in them. Suppose it were possible to make microscopic sections from head to foot of nine hundred dead bodies, would not one expect to find a higher percentage than from macroscopic appearances alone? Does it not, then, seem extraordinary that the percentage in the lymphoid tissue of the pharynx is not much higher than Lewin's figure?

When we consider that the pharynx is *par excellence* the place where there must be the greatest exposure to the contact of the *Bacillus tuberculosis*, it being the cross roads of the food and air ways, it is very surprising that a pathological structure, such as the pharyngeal or faucial tonsil, should not more frequently than once in twenty instances contain the tubercle bacillus, or some microscopic evidence of its presence. In the preceding paper I have attempted to point out the same puzzling phenomenon in the larynx. It would seem, therefore, that the upper air-passages possess some protective characteristics which the lower do not to an equal degree, and this is only the confirmation of an old observation. In a second series of cases reported by Lewin this is again evident. The pharyngeal tonsil taken both during life and post mortem from cases suffering from pulmonary phthisis showed latent tuberculosis only once in four cases.

Lewin sums up the results of his observations as follows:

"1. According to our experience, five per cent. of hyperplastic pharyngeal tonsils contain tubercular deposits.

"2. The tuberculosis resembles in its characteristics the so-called tumor form of tuberculosis of the mucous membranes. It is characterized by the absence of all recognizable external signs—'latent' tuberculosis of the tonsils.

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* *Archiv f. Laryng.*, Band ix, Heft 3.

"3. This latent tuberculosis apparently can represent the first and the only localization of tuberculosis in the affected body.

"4. It is usually combined with other more extensive tuberculosis, especially of the lungs, although this at the time of the operation is often not manifest.

"5. It is a relatively frequent phenomenon in pulmonary tuberculosis.

"6. It may affect normal large (*sic*) tonsils as well as hyperplastic pharyngeal tonsils. It is doubtful whether it can itself produce hyperplasia, perhaps through the influence of toxines. It can at any rate delay the involution of the pharyngeal tonsil.

"7. It plays very little part in the ætiology of the hypertrophy of the pharyngeal tonsil.

"8. It may be entirely destroyed by the removal of the pharyngeal tonsil, even when coexisting with pulmonary tuberculosis."

In the body of his paper Lewin states that having found tubercle bacilli in some cases in the cervical lymphatics while the tonsils were free of tubercle, he concludes that the tonsils could have had nothing to do with their entry into the lymphatics. This, it seems to me, is a very unwarranted assumption. It is impossible to explain many of the phenomena of tuberculosis without supposing that the tubercle bacilli may be carried long distances through the lymphatics before lodging and producing tubercle. In a case of laryngeal tuberculosis I have seen the bacilli lying in and between the layers of epithelium without any evidence of tubercle, that only being seen in the subepithelial tissue. It would be impossible to explain the tuberculosis of joints unless we assume that the bacillus and certain tissues or localities in certain individuals have, as it were, elective affinities. However, as intimated above, there is no proof that the lymphoid tissue and its coverings absorb bacilli any more readily than do the mucous surfaces elsewhere.

Lewin recommends searching excised tonsils for bacilli and giant cells as an aid to the early diagnosis of pulmonary tuberculosis. This will not recommend itself to the average diagnostician, especially after a study of his conclusions.

He says miliary tuberculosis has never been satisfactorily proved to have followed an operation for the removal of "adenoids" even when they contained foci of latent tuberculosis. This may be so, but in the cases reported by Lermoyez, and in the case reported by Chapell, it was supposed by the observers that the operation produced an active tuberculosis where before it had not been suspected. It is unnecessary to produce that amount of traumatism in the experimentation on animals. On the other hand, he sees no indication for an especially early, or an especially radical extirpation, of the lymphoid tissue, because it contains "latent tuberculosis."

And now for the consideration of the evidences of the presence of "latent tuberculosis." In some instances the diagnosis was made by Lewin from histological evidence only, in others from the histological appearances and the detection of the tubercle bacillus by staining, while in only one case was there a positive result from animal inoculation. In only twenty of the cases examined did he use animal inoculation to demonstrate the presence of the tubercle bacillus, and nineteen of these gave negative results. In the discussion which has been going on for the last three or four years in regard to this subject reports of a very large number of cases may be found in which the tissues referred to were examined for evidences of the morbid process, practically with the same technique as that used by Lewin. Now, in order that we should be in a position to judge of those contributions to our knowledge of tuberculous disease it is necessary to understand exactly what we mean by the term "evidences of latent tuberculosis." One can not long peruse the literature of the subject without being impressed with the variety of views as to this point, as well as by the fact that this important aspect of the subject has been but little discussed. It is not my purpose here to specifically review all the literature illustrating this point. Much of it I have had occasion to refer to elsewhere. Let us consider *seriatim* the evidences of tuberculosis having a bearing on this part of the subject. As for the clinical evidences of tuberculosis, there are none in "latent tuberculosis," nor are we here confronted with the gross lesions of anatomical tubercle, appreciable to the naked eye either during life or post mortem. Manifestations of this character in the lymphoid tissue of the pharynx we know to be very rare. Therefore, practically, the nature of the evidence of "latent tuberculosis" must be almost entirely microscopical and experimental. These are (1) animal inoculation, (2) section staining for bacilli, (3) reaction to tuberculin, (4) microscopical appearance of anatomical tubercle.

1. It seemed at first as though animal inoculation should give the most reliable results from a positive as well as from a negative standpoint, but it was at once suggested by Cornil and by Helme that surface contamination with the tubercle bacillus could not be entirely ruled out. The investigations of Strauss, of Cornet, and of others have shown that the tubercle bacillus is occasionally found in the secretions of the upper air-passages of healthy people. A great drawback to experimentation on animals with excised tonsils and adenoids is that they are very apt to die from septicæmia due to pyogenic germs, which haunt the crypts and cavities of these excrescences. Another drawback to this method lies in the scarcity of the tubercle bacillus in latent lesions, since the tubercle and the bacillus might be present, but the latter not in

sufficient numbers to infect even the susceptible guinea-pig.

2. No one who has had any extended experience in looking for the bacillus by the process of staining thin sections of the growth in the necessary manner fails to appreciate the amount of labor involved and the difficulty of thus demonstrating its presence. It is a matter of some difficulty to find tubercle bacilli in lymphoid tissue studded with tubercles visible to the naked eye. It is the exception to find them in the scanty anatomical tubercle of "latent tuberculosis."

3. Reaction to the injections of tuberculin it is obviously impracticable to make use of in any considerable number of cases, even were the presence of the reaction in individual cases always conclusive.

4. Diagnosis by means of the microscopical appearances of anatomical tubercle is probably the most satisfactory of any one method of proving the presence in the tissues of the tubercle bacillus, but even this is frequently attended with difficulty. The presence of giant cells, of lymphoid and epithelioid cells, and of areas of coagulation necrosis, when all occurring in a certain arrangement, makes up the picture of the anatomical condition we call tubercle. When these are all present in one or more places of a section we have only to consider whether it may not be due to another influence than the bacillus of tubercle. It may be a foreign body, and on this point as to the lymphoid tissue of the pharynx we have not, so far as I am aware, a great deal of accurate information to guide us. I have several times drawn attention to the liability of error in making a diagnosis of tubercle in the nose and throat from the presence of giant cells alone, a subject which has been exhaustively treated by Manasse.

Therefore, when we have studied the technique upon which are based figures representing the frequency of tuberculous infection of the lymphoid tissue of the pharynx, and have subjected this technique to intelligent critical analysis, we find that the statistics thus far published can not be implicitly relied upon to establish the proportion of cases of "adenoids" and tonsils which are the seat of the so-called latent tuberculosis. Nevertheless, a certain number of cases have been reported in which a positive diagnosis was undoubtedly correct. It is only the proportion of cases which is in doubt. A recent paper by Scheibner * shows practically the same results as those arrived at by Lewin, but it seems to be freer from criticism in some respects than does the one I have reviewed more at length.

The personal equation of the observer is an important factor not only in negative but in positive reports as to the existence of the evidences of tuberculosis. It is with the full appreciation of the possibility that I have failed to recognize evidences of latent tuberculosis where others might have succeeded that I make here a supplementary report of my own observations, including all the cases of which I have record to the present time.

Faucial tonsils	54
Pharyngeal tonsils	51
Lingual tonsils	16
Total	121

As stated in a paper in this *Journal* (September 26, 1896), twelve of these cases were tested by animal inoculation, and sections from the growth in these twelve cases as well as in many of the others were stained for the tubercle bacillus. The search for anatomical tubercle chiefly by means of hæmatoxylin and eosin stain was made in all cases. No bacilli, no tubercle, no typical giant cells were found in any of them. In the case of Dr. Chapell (*New York Medical Journal*, September 19, 1896), where there was clinical evidence of tuberculosis, the animals died of tubercle, tubercle was present in the tissues, and the bacillus was present in the tubercle; but I think such a case can not be properly classed among the cases of latent tuberculosis, although it may have been such a case before it became clinical tuberculosis.

As I examine a certain number of tonsils microscopically every year, I may meet with enough cases finally to bring up my average to five per cent., but I am not expecting it. Having admitted the possibility of error on my part in failing to find any evidence of latent tuberculosis in the lymphoid tissue I have examined under the microscope, it may not be thought presumptuous to acknowledge a feeling of doubt in my mind as to the infallibility from error in the personal equation of others. Of course, as has been stated, it is possible that the difference in the frequency of tuberculosis in European and American cities may easily explain the discrepancy without impugning anybody's diagnostic acumen.

CREOSOTE.

SOME CLINICAL OBSERVATIONS ON ITS USE IN VARIOUS CONDITIONS.

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AT the present time, when each year brings so many additions to the materia medica of synthetic coal-tar derivatives, recently identified alkaloids, new organic salts of the metals, and the like, too many general practitioners, confused by the array, are apt to become either skeptics or enthusiasts. A safer stand is rather one in which, while habitually employing established reliable remedies, the practitioner at the same time not only is on the alert to avail himself of such newer aids as are proved to accomplish a given end more satisfactorily than could be done by the earlier means at command, but also on his own account uses his reason, as opportunity affords, in widening the range of usefulness of the seasoned therapeutic weapons he already possesses.

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* *Deutsche med. Woch.*, May 25, 1899.

It is in the latter connection that the appended clinical notes are presented, the observations having been made to test for personal satisfaction and by actual experience the therapeutic value of creosote in the several conditions treated with it. The cases by no means develop new facts, but merely show what were regarded as interesting results of creosote administration.

Creosote, though not one of the newer drugs, and in spite of the extensive exploitation it received some years since, when its use in tuberculosis was first advocated, does not yet seem to be as generally appreciated and employed as its properties would warrant. In fact, to all appearances it is not so thoroughly worked out in regard to its physiological action as many remedies of much later introduction, if the space and matter allotted it in the average text-book are criterions. It is briefly set down as a rather caustic antiseptic, which in small internal doses manifests, it would seem, its chief effect on mucous membranes, where it exercises a varying sedative action on the terminal nerve filaments, while at the same time it stimulates the glands, by which it is eliminated, rendering the mucus more or less antiseptic, according to the amount of the drug ingested. It is this action that has led to its employment in the treatment of pulmonary tuberculosis.

Indeed, popularly it has come largely to be regarded as limited in usefulness to such treatment, with the occasional administration of minute doses for the relief of obstinate nausea and vomiting. On the contrary, its scope of value is much wider, as has been shown of recent years by the use of it or its derivative, guaiacol, in typhoid fever, and more lately yet, by the prominent place accorded it in the newer treatment of pneumonia. It was its employment in other cases, wherein it was thought it might prove beneficial, that led to the formulation of these notes.

As will be seen, a variety of conditions was treated, those being chosen that seemed to require internal antiseptics. Among others, the condition of intestinal indigestion, with its resulting fermentation, so frequently encountered, and which so often offers stubborn resistance to treatment with carefully limited diet, digestive extracts, and various antiferments, affords an excellent field for the use of creosote, as shown by the following:

Case I.—Mrs. C., aged twenty-seven, housewife. She had the usual history of indefinite digestive disturbances for several years, chiefly showing themselves as intestinal fermentation and flatulence, with frequently intense occipital headaches. Relief from this self-intoxication resulted only when the coexistent obstinate constipation was overcome. The condition was finally aggravated through a surgical operation, when most serious hyperemesis, intestinal paresis, and fermentation were set up by the anæsthetic. This attack was treated with papoid and soda, in conjunction with strychnine, and a strictly non-farinaceous diet was also carried out for four weeks. At the end of that time the condition, though improved, was still one of excessive fermentation, beginning even while a meal was being eaten and continuing several hours, often until the next meal.

The patient then resumed a mixed diet, with the addition of diastase to the medication. The hoped-for pronounced benefit failed to result, and for some weeks following the treatment was with various combinations of the digestive ferments, malt, and resorcin, naphthol, and salol, the medication being changed when its use for some time failed to show the result desired.

After six weeks the patient began treatment with creosote, in the dose of two minims after meals, the drug being given thoroughly mixed with a malt preparation, for palatability, as well as the better to insure its thorough absorption and the minimum of irritation.

The action of the drug was surprisingly prompt, a decided remission of the fermentation following the first three doses. A diminishing degree of flatulence existed for some days, but at the end of the first week of creosote administration there was scarcely a trace of fermentation present. The improvement induced the patient shortly to suspend treatment, with the reappearance of the fermentation after some days as a natural result. It, however, again yielded to the creosote, which this time was continued for a longer period. At present the patient expresses herself as being free from headaches, and practically so from fermentation, although the constipation still exists to a lessening extent.

Case II.—Miss N., aged twenty-five, factory girl. Patient gave a history of intestinal fermentation and flatulence for the preceding three months, associated with severe occipital headaches and moderate constipation. She was given ox gall, pancreatin, nux vomica, and compound extract of colocynth, with salol and cascara on retiring. This treatment continued for three weeks, with improvement of the constipation, but only a minor bettering of the fermentation and headaches.

The administration of creosote was then begun, two minims being given after meals, as in the previous case. With this patient improvement was slower, but benefit was apparent at the end of a week, and in two weeks the fermentative processes had ceased to give trouble. The creosote was suspended after four weeks' treatment, when there was no noticeable fermentation, and the headaches were infrequent and lighter.

In these cases the antifermentative action of the creosote may have been exerted directly, before its absorption into the system, or later, through elimination by the mucous glands of the small intestines, rendering the intestinal mucus antiseptic to an extent sufficient to inhibit fermentative processes. Since the amount of creosote taken was small, it is probable that its action was largely direct, for, as its elimination after absorption is from all mucous membranes, and the kidneys as well, only a small part of the amount ingested would find its way to the intestinal mucous glands.

In connection with the foregoing may be considered the following:

Case III.—Willie F., aged fourteen, schoolboy. Some three years before he had been attacked with epileptic seizures, the form being that of *grand mal,* and the attacks lasting from five to thirty minutes. When seen, the patient had been on a steady medication of bromides and other sedatives for a number of months, but, in spite of increasing doses of the sedatives, the seizures continued, occurring every week or two, though much less severe than formerly. Some intestinal fermentation was present, and it was noticed that toward the end of an attack considerable flatus was expelled, followed by the cessation of the seizure. Additional treatment was instituted with pepsin, pancreatin, nux vomica, and salol, in the hope of checking the fermentation. The flatulence and attacks persisted, however.

After about three weeks creosote was substituted for the digestives and salol, in doses of two minims four times a day, thoroughly mixed with malt. The sedatives were also continued. Two weeks later an attack occurred, but lasting only half a minute, and without the appearance of flatus. The creosote was continued two months, with the subsidence of the intestinal fermentation and freedom from further seizures. Shortly after ceasing it a brief attack occurred, but the case remains much improved, with fermentation and flatus absent, and the seizures much less frequent.

The clinical aspects of this case forced the view that the renewed attacks were largely due to gastro-intestinal disturbance, as so often is the case, and the creosote improved the condition as none of the previous medication seemed able to do. That feature being eliminated, the bromides were enabled once more to gain control.

The reports of some other cases of intestinal disturbance follow.

CASE IV.—Katie R., aged a year and six months. Patient was suffering with a severe diarrhœa of four days' standing. The bowels were moving seven to ten times in the twenty-four hours, and vomiting occurred three or four times a day. The stools were liquid and greenish and expelled with more or less flatus. The child had a history of measles two months before, and was thin and drawn, with a persisting cough, and a weight of but nineteen pounds. She was put on a diet of sterilized milk, varied with rice water mixed with beaten white of egg. Medication was with calomel, salol, and malt.

Three days later the condition was much the same, except that the passages were somewhat fewer. The calomel and salol were withdrawn and replaced by creosote, one minim every three hours, given in the malt. In a week the diarrhœa and fermentation had been entirely overcome, and the stools were practically normal. As a little cough lingered, the creosote was continued some days longer, for its effect on the bronchial mucous membrane. When seen two weeks later, the cough was absent, the color and appetite were good, and the bowels regular. At the end of two months, when observation ceased, the patient was thriving and had gained five pounds in weight.

CASE V.—James W., aged six years and six months. Patient languid, with history of almost daily headaches, more severe since an attack of measles two months before, and often associated with a slight rash. Chronic constipation, with frequent flatulence, and poor appetite were present. To relieve the evident self-intoxication calomel was at first given, in hourly one-tenth-grain doses on alternate days.

A week later, the condition being but slightly improved, creosote, in minim doses four times a day, was added to the treatment. After a few days the rashes ceased to appear, and in ten days the headaches and flatulence were much less frequent. The calomel was stopped, but the creosote was administered six weeks, with steady improvement and only one or two headaches. At the end of that time a gain of three pounds in weight was reported, with the child bright and active, and apparently free from headaches and fermentation.

These cases all serve to show that creosote has a very decided value in the treatment of fermentative intestinal disorders, both acute and chronic, and in children as well as adults. It has the advantage of being non-toxic in these small doses, while its ready anti-fermentative action, both before absorption and after elimination, if authorities are right, renders its effect a continuous one. Combined with a mild purgative, to empty the alimentary tract as completely as possible, it promptly acts to render that canal sufficiently antiseptic to overcome the trouble. The rapidity and completeness of this action vary in different cases, but in no instance were good results lacking.

A more familiar phase of the effect of creosote administration, showing its sedative action, is the following:

CASE VI.—Mrs. E., aged twenty-five, housewife. She presented herself in second month of third pregnancy, with a history of excessive nausea and vomiting for past four weeks. For the last two weeks she had been unable to retain food upon the stomach more than a very few minutes. She was pale and exhausted from the retching and enforced fasting. Creosote was prescribed in minim doses every two hours until vomiting ceased, a dose being taken before each attempt to eat.

Three days later the patient reported that the first two doses had been thrown up, but that since there had been no vomiting whatever. The creosote treatment was continued ten days, a minim before meals, with steady improvement in appetite and strength, and freedom from vomiting, when the patient passed from observation.

In the cases so far cited the results from the creosote were largely due to its primary action before absorption. In the remaining cases, of respiratory affections, the action was necessarily secondary, after its elimination through the mucous glands, and by its presence in their secretions.

CASE VII.—Johnnie M., aged three. Patient had had whooping-cough for six weeks previous, and the paroxysms, when he presented, had begun to be less frequent, though still occurring several times daily, and with violence. Creosote was prescribed in minim doses every two hours.

At the end of a week the paroxysms had decreased about one half in number and were of shorter duration, with looser expectoration. The creosote was directed to be continued, but the case disappeared from observation.

Case VIII.—Mamie W., aged four. Whooping-cough of about two weeks' duration. The paroxysms were occurring two or three an hour, with considerable violence, and not infrequently epistaxis. Creosote was prescribed as above, and appeared to exercise a soothing effect with the first dose. Continued doses caused first a looser expectoration, and then less violent paroxysms, with fewer nosebleeds. At the end of a week the paroxysms were reduced to five or six a day.

The creosote was then neglected, and the case relapsed somewhat. Resumption of the medication again improved the condition, but the case was shortly lost from observation in a state markedly better than before the creosote treatment.

Case IX.—Nellie H., aged four. Patient had a bronchitis of about twenty-four hours' duration. There were some sonorous râles and a rather dry, harsh cough. Respiration was quickened and temperature 101° F. Creosote was given in minim doses every two hours.

Within twelve hours the râles were moister and the cough was looser, and in twenty-four hours the temperature had fallen to normal. The physical signs of bronchitis steadily diminished, and in two days had practically vanished, but the creosote was continued nearly a week.

From the infectious character of pertussis and the presence of the specific organisms on the respiratory mucous membrane, creosote seems admirably adapted to directly antagonize the disease, through rendering the pulmonary mucus antiseptic, and so inhibiting the growth of the bacteria, or destroying them outright. If, as is held by many, bronchitis is a bacterial disease, the germicidal action of the creosote comes into play here also. In both conditions the creosote was given for the effect of its sedative and stimulative actions on the nerve endings and mucous glands respectively, easing the cough and liquefying the mucus, and the results apparently justify the procedure. This in spite of the fact that circumstances prevented satisfactory treatment and observation in all the cases.

The following case may be of interest as showing the action of creosote in its most popularly accepted function:

Case X.—Mike C., aged forty, fireman. Patient gave a history of having coughed for a year and of having had three hæmorrhages a few months before. Coughed a good deal, with some pain. There was some dyspnœa, especially on exertion. Numerous subcrepitant and moist râles, particularly on left side, where a small cavity was found. Expectoration not very profuse. The sputum examination showed tubercle bacilli.

Creosote was given, two minims four times a day, thoroughly mixed with malt. For the first few days no change was noticeable, but by the end of a week the cough grew looser and less painful, and expectoration was freer. In two weeks the patient had less dyspnœa, and declared himself as feeling stronger. The expectoration was decidedly less purulent in appearance and the râles were moister. This condition continued a month, when the patient entered a hospital and passed from observation. In this time there had been a gain of four pounds in weight.

These few cases are cited as showing conditions in which creosote is not ordinarily employed by most practitioners, and yet where it has proved itself to be of value, in some instances where other means were insufficient. The germicidal properties of creosote, and its action on mucous membranes by stimulating the glands and exercising a sedative effect on the nerve endings, both before absorption and on elimination, certainly afford it a wide field of usefulness, which does not seem to be generally acknowledged in its entirety. A frequently quoted objection to the use of creosote is the irritation sometimes produced in the gastro-intestinal tract. This is often due to the size of the dose ingested, for in amounts of several minims it certainly is apt to produce a local caustic action on the average stomach. This can not be thoroughly obviated by administering it in capsules, milk, or other media, if the dose remains large. The safer plan is to give it in smaller doses, frequently repeated, and so thoroughly mixed with some vehicle as to prevent any great amount of the creosote from coming in contact with the mucous membrane at one spot. The menstruum used in the above cases was maltine, with which the creosote was thoroughly incorporated, and thus so completely subdivided into minute droplets as to minimize the chances of caustic action. This subdivision also rendered its absorption more rapid and complete, and so by the frequently repeated small doses the effect of larger doses was really attained, without their irritating action. When, then, the safety and value of creosote in such cases as the foregoing and allied conditions are better appreciated than at present they seem to be, its more extensive employment surely may be expected.

4401 Indiana Avenue.

THE TREATMENT OF GOUTY DEPOSITS.*

By E. L'H. McGINNIS, M. D.

When our good friend Dr. Weeks sent out his notices of a meeting one or two months ago, he was unkind enough to make the announcement thereon that a paper would be expected of me at this session of our society.

Those of you who have been similarly startled by a like prospect can deeply sympathize with me, I am sure, for one naturally has a dread of trying to interest an audience with a subject to which, perhaps, they have given but little attention; and, realizing that the work with which my name has been more or less associated for something over fifteen years was not of great interest to this society of specialists in other branches of medicine, I sought for a subject with which we are all occasionally thrown into contact; hence it will, I hope, prove of more interest to you than one relating more particularly to my own specialty.

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* Read before the Hospital Graduates' Club, December 28, 1899.

There is also another most potent reason for my choice—viz., that I want to know more about the subject myself, and the best and easiest way to learn is to start you, my fellow members, on my trail; and, with guns loaded and shotted with criticism, yet wadded with kindly feeling, I hope, I may pick up some nuggets of information from your fusillade of animadversion, and thus enrich myself; for, "tell it not in Gath," I feel myself in need of it. Hence my subject, The Treatment of Gouty Deposits.

There are probably few conditions that we are called upon to treat more annoying, more persistent, and more obstinate to dispel than the concretion coincident with and following an attack of gout. It is a lasting and unpleasant reminder of many a good dinner, and is the only blemish on the memory of "happy days gone by"; and, to make it even more disagreeable, if possible, the man *minus* the good dinner is occasionally afflicted, and truly is he to be pitied, for sometimes "the game *is* worth the candle." But that is for each to decide for himself. Let us therefore proceed to business, and recognize that patients do have these attack, do suffer untold torments, and do come to us for relief from their woes in the shape of joints rendered wholly or in part useless by the well-known characteristic gouty deposit around them.

This concretion is generally conceded to consist of the urates and phosphates, with some lime. It is hard, white, and generally manages to resist most attempts at its destruction, much to the disgust of both patient and physician.

Remedies galore have been tried; much-vaunted nostrums have been faithfully used; massage has been of some service, but has still left much to be desired, and applications of electricity alone do not cure the condition.

But long ago it was found that lithia in one form or another would dissolve the deposit, and then came the question as to how it could be applied directly to it.

It is but fair to suppose that most of you at least know what cataphoresis, or electrical osmosis, is; and perhaps it would be better for our patients did we oftener remember that cocaine solution on the positive pole of a galvanic battery, and applied to an aching nerve, as in sciatica, will relieve where the electric current alone and by itself will not.

The fact is generally recognized that the current will carry certain drugs through the tissues and directly to the seat of the trouble, and I am told that to-day in this city a certain party (and a non-graduate, I believe) is treating tuberculous patients by methylene blue applied directly to the diseased tissues by this method, and with a surprising degree of success.

I had made use of cataphoresis a few times, and invariably to my satisfaction, but my experience was largely with treatment of neuralgias, etc., and accordingly I was much interested in its development, and gladly undertook to relieve a patient suffering from gouty deposit sent me last year by Dr. R. B. Talbot, of this city.

I shall not stop here to give the detailed history of the attacks. They were numerous and severe, and had left the characteristic deposit around the knuckles to such an extent that the freedom of motion of the fingers was seriously impaired, while the removal of rings that had formerly been loose was an absolute impossibility.

For certain reasons it seemed to me wise to use a solution of the iodide of lithium rather than the citrate or other preparation mentioned in the very excellent and exhaustive article on Cataphoresis written by our friend and fellow member Dr. Frederick Peterson for the *International Encyclopædia of Electro-therapeutics*, from whom I hope to gain some further knowledge to-night.

The fingers of the patient were first prepared by being sponged off with chloroform, the idea being to dissolve any fatty or sebaceous matter that might clog the pores of the skin, and thus leave the way clear for the transit of the salt through the tissues.

This having been carefully done, thin sheets of the borated absorbent cotton were wrapped around the joints and thoroughly wetted with a solution of the lithium. The fingers were then covered by the metal handles of the ordinary galvanic battery, each being connected with a terminal from a cord leading to the positive pole, the negative being a flat metal plate upon which the other hand was laid, and the current turned on.

I was governed as to the strength somewhat by the feelings of the patient, who found from fifteen to twenty-five milliampères about sufficient, as the metal was separated from the sensitive integument by only the thin layer of saturated cotton, which, of course, was an excellent conductor.

The current was thus applied for from eight to ten minutes, and on the removal of the electrodes and cotton the joints were vigorously massaged for several minutes more with the idea of forcing in all the salt possible, and also of increasing the local circulation by this friction. This was done daily as far as possible, and after the third treatment there was a marked diminution of the tenderness. The *motion* of the joint was much slower in being affected, but at the end of two weeks the patient was so much encouraged that she was no longer in doubt as to the success of the method. The size of the joint gradually lessened and in six weeks more she could remove her rings, something that she had been unable to do for years.

The treatment was here interrupted by enforced absence from town, but on her return it was resumed until her departure for Europe, whither she felt warranted in going by being almost well again, and correspondingly happy and grateful.

My second case of the trouble treated in this way was even more satisfactory, and resulted in the entire disappearance of the deposit; and, although it was over a year ago, I may mention that there has been no return of the gout itself thus far, something unprecedented in the patient's experience for that length of time in years. Whether it was due to the system being pretty well charged with the lithia, to a more careful diet and hygiene, or to a merciful Providence, I do not know. Nevertheless, the fact remains, and that is all the patient cares for.

I am now attending my third case treated by this method, and the patient is so much improved that neither she nor her family have any doubt as to the successful result eventually.

Now, I am fully alive to the fact that my experience is limited, and there is undoubtedly much to be learned regarding the method. I report the cases to you for what they are worth, though, from what I have thus far observed, I can not but believe that the condition can be very greatly benefited by the treatment as described, and eagerly await further developments regarding it, and, in conclusion, I ask for information as to any more successful method with which you may be familiar.

Amsterdam Avenue and Seventy-fifth Street.

A CRITICAL STUDY OF THE JUSTUS BLOOD TEST FOR SYPHILIS.*

By DAVID H. JONES, M. D.,
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Historical.—In 1895, Justus, an assistant at Schwimmer's clinic at Budapest, described in Virchow's *Archiv*, vol. cxl, p. 91, a new test for doubtful cases of syphilis. He elaborated this work in a paper appearing in the *Archiv* of 1897, vol. cxlviii, p. 533, and since that time there has been, so far as I have been able to learn, only one report which was confirmatory, that made by Dr. R. C. Cabot and Dr. P. S. Mertins, of Boston, published in the *Boston Medical and Surgical Journal* for April 6, 1899, p. 323.

The test is based on the asserted fact that a single inunction of mercury in all untreated cases of secondary, tertiary, and congenital forms of syphilis causes a reduction in the hæmoglobin, due to the sensitiveness of the red blood-corpuscles to the action of the drug, while in non-syphilitics no reaction follows.

Justus says that this reduction follows intravenous and subcutaneous injections as well as inunctions, and that it amounts to from ten to twenty per cent. The administration by the mouth produces no effect on the blood.

Justus reports observations in more than three hundred cases of syphilis which gave a positive reaction, and on very many control cases which were negative.

Cabot reports positive results in seven cases of syphilis and negative in thirty-one control cases; Justus apparently did not find a reduction in any control case, while Cabot found the reaction in two cases: one a tertian malaria in which the reduction may have been due to the chill, and the other in chlorosis, in which the reason was unaccounted for.

Justus also found the sign in thirteen out of sixteen cases in which only a fresh chancre and inguinal adenitis were present, but Cabot apparently did not test such cases.

It is agreed by both observers that so-called "latent" cases, and cases which are subsiding either spontaneously or under treatment, do not respond to the test.

Personal Experience.—During the past six months I have applied this test in fifty-three cases drawn from the in-service and out-patient departments of Gouverneur and Bellevue Hospitals.

The diagnosis in most of the syphilitic cases was confirmed by Dr. Winfield Ayres.

The hæmoglobin was estimated by the Hammerschlag or specific-gravity test, and the method of performing the test was as follows:

I took a dry urinometer glass and mixed in it such quantities of chloroform and benzol that the specific gravity of the resulting mixture, taken by ordinary urinometer, was 1.059, the specific gravity of normal blood.

I then punctured the patient's ear, drew the blood into a pipette, and expelled the drop into the mixture; chloroform or benzol was then added until the blood drop remained in the centre of the fluid; the specific gravity was then read off, and the percentage of hæmoglobin noted from Hammerschlag's table. The patient was then given from forty to sixty grains of unguentum hydrargyri and told to rub it thoroughly into his breast the night before the second test was to be made, when another drop of blood would be drawn and the test repeated. The interval between the first and second blood examinations varied from twenty-four to seventy-two hours. In a few cases the Hammerschlag method was controlled by the Fleischl hæmometer test, but the results were practically the same with each.

These fifty-three cases I shall divide for convenience into (*a*) thirty-five syphilitics, (*b*) eighteen control cases.

The syphilitics are subdivided into (1) seventeen cases of active syphilis not under treatment; (2) one case of active syphilis under treatment; (3) two latent cases; (4) eight cases of chancre with adenitis; (5) seven cases of chancre without adenitis.

Of the seventeen cases of active syphilis not under treatment, thirteen responded and four were negative to the test.

Of the thirteen positive cases, twelve had a macular or papular syphilide and a history of chancre, and were tested from three to ten weeks after its appearance; the remaining one had a characteristic mucous patch on the inner side of the cheek, but no history of chancre could be elicited, and the possibility of infection was denied. It is worthy of note that ten days' treatment of this case with unguentum hydrargyri caused marked improvement.

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* Read before the Section in General Medicine of the New York Academy of Medicine, January 16, 1900.

Of the four negative cases, three had a characteristic syphilide, confirmed by Dr. Ayres and Dr. Alger, and either a present chancre or the history of chancre. The first, in whom mucous patches occurred in the mouth a month and a half after test, was tested twice by specific-gravity method; the second, who had all the symptoms of syphilis, was tested both by specific gravity and Fleischl's hæmometer, and in the third the reduction was only three per cent., and the case was therefore not counted. The fourth had a mucous patch and sore throat, but no history of chancre could be obtained.

The only case in my list of active syphilis under treatment did not respond to the test, and both of the latent cases were negative.

Of the eight cases of chancre with adenitis, two reacted positively and six negatively to the test. One of the positive cases was tested twice by specific-gravity method, and was negative both times, and once later by Fleischl's hæmometer, and was then positive; the

	Diagnosis.	Hæmoglobin.			Remarks.
		Before inunction.	After inunction.	Loss.	
		Per cent.	Per cent.	Per cent.	
1	Active syphilis not under treatment.	107	85	22	Chancre, papular eruption on body.
2	“ “ “ “ “	105	93	12	Chancre, enlarged glands, sore throat, eruption, headache, and alopecia.
3	“ “ “ “ “	105	88	17	Chancre, macular eruption on body, and two weeks after test mucous patches in mouth.
4	“ “ “ “ “	102	85	17	Chancre on dorsum of penis, enlarged glands, macular eruption on forehead.
5	“ “ “ “ “	98	80	18	Chancre, enlarged glands, and general syphilitic eruption.
6	“ “ “ “ “	110	95	15	Chancre of meatus, and two weeks after test general papular eruption on abdomen.
7	“ “ “ “ “	105	88	17	Ulcerating chancre of prepuce, general eruption.
8	“ “ “ “ “	102	88	14	Chancre, inguinal adenitis, roseolar eruption and mucous patches in mouth.
9	“ “ “ “ “	105	85	20	Chancre, inguinal adenitis, mucous patches, general eruption.
10	“ “ “ “ “	102	80	22	Chancre, general papular eruption, mucous patches, sore throat.
11	“ “ “ “ “	85	70	15	Chancre, mucous patches, and general syphilitic eruption.
12	“ “ “ “ “	85	70	15	Chancre, papular eruption of body, sore throat, inguinal adenitis.
13	“ “ “ “ “	92	75	17	Mucous patch on inner side of cheek; no other specific symptoms. Ten days after, sore improved on unguentum hydrargyri.
14	“ “ “ “ “	102 102	102 102	..	Chancre, papular eruption, mucous patches, sore throat.
15	“ “ “ “ “	102 108	102 108	..	Chancre, macular eruption, morning headache. A month and a half later, mucous patches.
16	“ “ “ “ “	98	105	..	Three months after connection, mucous patch, sore throat.
17	“ “ “ “ “	105	102	3	Chancre, no mucous patches, syphilitic eruption on body.
18	Active syphilis under treatment.....	108	105	..	Chancre and general eruption, but under treatment.
19	Latent syphilis....................	98	98	..	Chancre four years ago, and syphilitic ulcer on leg.
20	“ “	108	108	..	Chancre one year ago, and syphilitic eruption on leg. (?)

	Diagnosis.	Hæmoglobin.			Remarks.
		Before inunction.	After inunction.	Loss.	
		Per cent.	Per cent.	Per cent.	
1	Chancre with adenitis	90	78	12	Chancre, inguinal adenitis; four weeks since appearance of chancre.
2	“ “ “	98 98 100	98 98 85	15	Chancre, inguinal adenitis; two weeks since appearance of chancre.
3	“ “ “	105	105	..	Chancre, inguinal adenitis not sensitive; three weeks since appearance of chancre.
4	“ “ “	102	105	..	Chancre, inguinal adenitis; four weeks since appearance of chancre.
5	“ “ “	98	105	..	Chancre, inguinal adenitis.
6	“ “ “	95	98	..	Chancre, inguinal adenitis (slight); ten days since appearance of lesion.
7	“ “ “	98	108	..	Chancre on frenum, inguinal adenitis; four weeks since appearance of lesion.
8	“ “ “	110	110	..	Two ulcers undermined, glandular swelling; three weeks since appearance of lesion.
9	Chancre without adenitis	98	80	18	Sore on penis which is suspicious.
10	“ “ “	110	110	..	Ulcer on dorsum penis back of glans; four weeks since appearance.
11	“ “ “	105	105	..	Chancre of meatus; four weeks since appearance.
12	“ “ “	105	105	..	Chancre of meatus; four weeks since appearance.
13	“ “ “	102	98	..	Hard, ulcerated mass at margin of prepuce.
14	“ “ “	95	95	..	Ulcerated mass back of glans; four weeks since appearance; used inunction twice.
15	“ “ “	105 105 100	105 105 100	..	Chancre, hard, deeply indurated, and ulcerated.

		Reaction. +	Reaction. −	Total.
Syphilitics...	Active syphilis not under treatment	13	4	17
	Active syphilis under treatment...	..	1	1
	Latent syphilis	..	2	2
	Chancre with adenitis	2	6	8
	Chancre without adenitis	1	6	7
				35
Control cases.	Chancroid	..	1	1
	Typhoid fever	..	1	1
	Apoplexy	..	1	1
	Colles's fracture	..	1	1
	Fractured rib	..	1	1
	Drug habit (morphine)	..	1	1
	Phthisis	..	5	5
	Acute alcoholism	..	7	7
				53 cases.

Control Cases.

	Diagnosis.	Hæmoglobin. Before innunction.	Hæmoglobin. After innunction.	Remarks.
		Per cent.	Per cent.	
1	Phthisis	50	55	
2	"	65	65	
3	"	55	55	
4	"	70	75	
5	Typhoid fever	88	88	
6	Apoplexy	95	92	
7	Fractured rib	85	85	
8	Colles's fracture	67	68	
9	Drug habit (morphine)	100	95	
10	Alcoholic	100	95	
11	"	80	80	
12	"	88	95	
13	"	68	70	
14	"	103	100	
15	"	100	103	
16	"	85	92	
17	"	92	95	
18	Chancroid	95	95	No venereal history; ulcers on scrotum and frenum.

other positive case was also tested by Fleischl's hæmometer. The first positive result was obtained six weeks and the second four weeks after the appearance of the chancre. Of the six remaining cases, three were tested at less than four weeks, two at four weeks, and one at an unknown time after the appearance of the chancre.

Of the seven cases of chancre without adenitis, I found only one with a positive reaction, the history in that case not being very definite. One of the negative cases, which was pronounced unquestionable chancre, was tested three times, twice by specific-gravity method and once later by Fleischl's hæmometer.

The control cases—which included five cases of phthisis, one case of typhoid fever, one of apoplexy, one of fractured rib, one Colles's fracture, one of drug habit, one of chancroid, and seven of acute alcoholism—were all negative to the test, and two were tested twice.

Conclusions.—The Justus test has a value in the recognition of doubtful cases of syphilis, although it is not infallible, as Cabot's case of chlorosis shows (and it is not impossible that other non-syphilitic conditions may be found in which the reaction occurs; but the work hitherto done certainly indicates the great variety of such non-syphilitic conditions. Moreover, the test often fails in two classes of syphilitic cases in which a diagnosis is especially desired—viz., in latent cases and in early chancre, and sometimes at the beginning of the secondary stage.

The limitations as to time and character of the disease—in other words, the range of usefulness of the test—have not been as yet entirely worked out. But in certain cases—of which the case of mucous patch with denied venereal history and uncertain other history from my own list, and Justus's case of ulcer of the larynx, in which the question was between a syphilitic and tuberculous origin, are examples—the Justus test is of decided weight and importance.

It is almost useless to expect at the present time to increase largely our limited list of pathognomonic signs. The practical possibility is to add to the list of such reactions, as the diazo reaction in typhoid fever, which in certain conditions are helpful in diagnosis and which have a great positive, though little or no negative, value, and then to find out as accurately as possible what the conditions are.

To this class, I think, the Justus test belongs, and to the definition of these conditions I have tried to contribute.

I wish to express my appreciation of the assistance of Dr. John H. Huddleston in this paper, and also to Dr. Winfield Ayres for his diagnosis and clinical material from his genito-urinary class at Bellevue Dispensary.

Therapeutical Notes.

Brooke's Ointment for Lupus and Other Tuberculous Conditions.—Dr. Couper (*Glasgow Medical Journal*, February) gives the following formula, the strength being varied to suit the individual skin:

℞ Oleate of mercury.... 2½ to 5 per cent.;
Salicylic acid .... 10 to 15 grains;
Ichthyol .... 15 minims;
Oil of lavender .... q. s.
M.

In unbroken skin this is used by inunction, but in ulcerated or excoriated conditions it is to be applied, diluted if need be, on lint. Brooke's paste is the ointment diluted with starch and zinc powder in equal parts, mixed with a double proportion of vaseline—viz., one part each of the powders to two of vaseline.

Hydrastis Canadensis for Use in Uterine Affections.—*Gazette hebdomadaire de médecine et de chirurgie* for January 11th ascribes the following formulæ to Lutaud:

1. For dysmenorrhœa:
℞ Tincture of hydrastis canadensis, Tincture of viburnum prunifolium, } of each, 225 grains.
M. Ten drops to be taken every two hours.

2. For vomiting of uterine origin:
℞ Hydrochloride of hydrastinine.. 15 grains;
Distilled water .... 150 "
M. From a half to one Pravaz syringeful.

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QUESTIONABLE TEACHING AS TO FRACTURES OF THE HUMERUS NEAR THE ELBOW.

If a person stretches out his or her arms toward you, the palms up, as in a familiar form of gesticulation, you will observe that the upper arm and the forearm do not lie in one continuous straight line; the two forearms diverge somewhat. It is a matter of common observation that they diverge more in women than in men. Nobody will deny that the fact is of importance in artistic anatomy. We grant that it is worth considering in surgery, but we doubt very much if it justifies the recommendation given by Dr. C. Hübscher, of Basel (*Deutsche Zeitschrift für Chirurgie*, liii, 5, 6), that fractures of the humerus near the elbow in women be treated with the limb in a state of extension, the prevention of ankylosis being left to the after-treatment. This teaching is questioned also by a writer whose abstract of Hübscher's article appears in the *Deutsche Medizinal-Zeitung* for December 21, 1899. This writer remarks that we do not always succeed in preventing ankylosis, and he goes on to say, with perfect correctness, that ankylosis of the elbow in a state of flexion leaves the arm still a useful member, whereas a stiff elbow with the forearm extended interferes seriously with the use of the limb.

In Hübscher's speculations as to the cause of the divergence of the forearms, and as to its being more decided in women than in men, there are certain points that seem to us somewhat remarkable. He attributes the obliquity to a slight outward curvature of the lower third of the humerus. We are using the word outward as a matter of convenience; the truth is that the curvature he means, if it exists, is outward when the palm of the hand is directed forward, forward when the palm is directed inward, and inward and a little backward when the palm is turned backward. Now, while we do not admit that any such curvature is the sole cause of the deviation of the forearm from a straight line continuous with the long axis of the upper arm, but attribute the divergence to obliquity of the articular surface of the humerus at the elbow, it may be interesting to consider Hübscher's theory that the curvature in question is produced by muscular action. He states that the muscles connected with the outer condyle are more powerful than their opponents, and consequently bend the lower part of the bone outward. He seems to base this statement on the fact that in two cases of infantile paralysis in which the supinator longus was the only muscle connected with the elbow that was not paralyzed the divergence of the forearm was greater than usual. But the supinator longus is a muscle of the forearm. How could it bend the humerus? If it bent anything, it would bend the radius and ulna.

The design in the divergence of the forearms, according to Hübscher, is to allow the arms to hang down limp without touching the hips, and, inasmuch as women's hips are broader than men's, the divergence is more marked in women than in men. He seems to forget that when the arms are allowed to drop by the sides, with the person in the erect posture, it is the backs of the hands, not the palms, that are directed forward, so that the divergence of the forearms is converted into convergence. There are other weak points in the author's reasoning, but we content ourselves with the foregoing.

THE POWERFUL INFLUENCE OF SUGGESTION.

The report of an unfortunate divorce case, which comes to us in the *Lancet* for March 17th, illustrates very forcibly the power of suggestion. A physician sent his wife to a well-known gynæcologist in London, whose pupil he had formerly been. Some years later this physician went, for some reason or other, to consult a professor of the mystic art of palmistry, who told him so much that was true about himself, or that perhaps he liked to believe true, that his wife was impelled to search for knowledge in the same direction. She went to the same palmist, who is reported to have told her that "she had committed adultery and would be divorced, occasioning great scandal thereby, and having first told her victim that she had a son, which was not the case, altered this to the prediction of the birth of a boy the father of whom was not to be her husband." The wife appears to have brooded over this statement, and some months later, after asking her husband what adultery was, informed him that she had committed it "heaps of times" with the gynæcologist in question.

The trial appears to have fully exonerated the gynæcologist, and, indeed, the respondent herself subsequently withdrew her "confession," which was without any shadow of supporting evidence apparently. It is pointed out that though the offenses were said to have occurred a long way back, the self-accusation was not made till after the suggestion implanted by the palmist, and no conscientious scruples seem to have been either felt by the respondent or suggested by the palmist. The legal correspondent who reports the case justly remarks: "As far as the evidence goes, it is entirely consistent with the view that the palmist simply told her victim that she had in fact committed adultery, and would at some future time be divorced, and, the impression of guilt having been produced, the feelings of bitter remorse followed naturally and developed rapidly." The proneness of women in certain conditions of health to accuse themselves of unchastity and others of violating them is well known; and if such a result may follow the indirect suggestion of associated ideas brought about by proper medical procedures, how much more likely is it to result from a direct verbal suggestion!

"NORMAL" PROPHYLACTIC REMOVAL OF THE VERMIFORM APPENDIX.

The proposition having been recently advanced that, in view of the dangers of appendicular inflammation and the comparative ease and innocuousness of the operation in uncomplicated cases, its removal in the case of all young children should be practised as a routine measure, as Jews practise circumcision, the editor of the *Medical Review* invited a number of representative American surgeons to express their views thereon. The surgeons' answers are published in the *Review* for March 17th, and the result is almost exactly what we should have expected—viz., that out of eighty-eight surgeons replying to the query, eighty-three express themselves more or less strongly in condemnation of the proposition. We say "almost exactly" what we should have expected advisedly. Our only surprise is that five should have been found to write with toleration of it.

INOCULATION FOR TYPHOID FEVER.

Some results based upon a sufficiently large scale are at last forthcoming as a first installment of data whereby to estimate the value of this procedure. The *Polyclinic* for March refers to results recently published in the *British Medical Journal* of unspecified date, derived from the Indian army. Professor Wright, of Netley, inoculated nearly three thousand British troops in India, in which country typhoid is always rife, and is said to cause thirty-seven per cent. of all deaths in the British army of occupation. The three thousand inoculated men were selected from an aggregate of about eleven thousand, the younger, more unseasoned men, being recent arrivals, having been selected for the inoculation as being those in greatest danger of contracting the disease. The results obtained give food for reflection. All the men were kept under observation. Of those not inoculated, 2.5 per cent. contracted the disease, while of the inoculated, only 0.95 per cent. have been attacked. Of the eight thousand uninoculated soldiers, 0.35 per cent. have died from typhoid, only 0.2 per cent. of the three thousand inoculated having succumbed; in other words, the disease rate in the uninoculated has been approximately treble, and the death-rate approaching double, that in the inoculated. These figures may be added to the mass of accumulating evidence as regards other diseases which tends to establish the general truth of the principle of prophylactic inoculation. The subject is at present only in its infancy.

PSOAS ABSCESS IN SCARLET FEVER.

Acute suppurative inflammation of the psoas muscle may, we presume, be included among the rare complications of scarlet fever. In a case recorded by Dr. A. Van de Velde (*Annales de la Société médico-chirurgicale d'Anvers*, February, 1899; *Centralblatt für Chirurgie*, March 24, 1900) the patient was a boy six years old. Symptoms of the abscess came on during the second week. A large incision was made above Poupart's ligament, and the abscess was opened and drained. It contained a pint of odorless pus. It healed promptly.

DETACHMENT OF THE ANTERIOR SUPERIOR SPINE OF THE ILIUM BY MUSCULAR ACTION.

A case of this rare injury is reported by Dr. J. L. Reverdin (*Revue médicale de la Suisse romande*, 1899, No. 12; *Centralblatt für Chirurgie*, March 24, 1900). The patient was a very muscular young man. While making an extreme exertion he felt a severe pain in the region of the anterior superior spine of the left ilium, with inability to walk or stand. Palpation revealed a sulcus an inch or more wide near the anterior part of the iliac crest, and the detached spine could readily be felt. In four days after the injury a plaster-of-Paris bandage was applied. It held the detached fragment in good position, and perfect union took place. A Röntgen-ray picture taken some time later showed a little displacement of the fragment inward and downward.

EPILEPSY IMPUTED TO COFFEE-EATING.

It is often difficult to come to a conclusion as to the relation between addiction to a certain drug and the occurrence of disease. Dr. O. Marburg is inclined to ascribe a causative action to coffee-eating in a case of epilepsy reported by him (*Wiener klinische Rundschau*, 1899, No. 21; *Centralblatt für innere Medicin*, March 17, 1900). It came on when the patient, a woman, was forty-four years old. For twenty or thirty years she had eaten roasted coffee beans, more than an ounce daily.

A PALMAR REFLEX.

The study of the reflexes has been of great service in the diagnosis of nervous diseases. It is only natural to suppose that since there exists a normal plantar reflex, a palmar reflex should also exist in the healthy individual, but we are unaware that any has been hitherto described. Dr. George E. Rennie, in the *Australasian Medical Gazette* for February 20th, describes a reflex consisting of a contraction of the palmaris brevis, causing a depression along the inner border of the palm, which may be induced by pressure on the pisiform bone, either upon its inner or outer side, and even by pressure on the ulnar nerve above the wrist or higher in the forearm. It might be objected that this contraction was simply due to stimulation of the nerve; but in that case, as Dr. Rennie points out, we should expect the contraction to extend to all the palmar muscles innervated by the ulnar. Moreover, that isolated contraction of the palmaris may be elicited by gentle stimulation of the skin over the hypothenar, as by stroking with the finger or a pin. The phenomenon has been investigated by Dr. Rennie in quite a number of cases, and he believes it will be found to be normally present, though the occasional absence of the palmaris brevis must not be overlooked. The absence of the reflex would point to a break in the arc, and the author points out that since the supply of this muscle is derived from the eighth cervical and first dorsal, the reflex may possibly be of service in localizing a lesion of the spinal cord. The phenomenon is worthy of study.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported for the two weeks ending March 31, 1900:

DISEASES.	Week ending Mar. 24.		Week ending Mar. 31.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	27	8	17	6
Scarlet fever	176	10	159	16
Cerebro-spinal meningitis	0	8	0	9
Measles	828	34	853	31
Diphtheria	265	46	253	37
Laryngeal diphtheria (croup)	26	13	16	8
Tuberculosis	251	192	219	171
Chicken-pox	26	0	27	0
Small-pox	2	0	1	0

The Buffalo Academy of Medicine.—At the last regular meeting of the Section in Surgery, on Friday evening, the 6th inst., the subject for discussion was a paper on Prostatectomy, by Dr. Paul Thorndike, of Boston.

Death of Professor St. George Mivart, F. R. S.—The death is announced from London of Professor St. George Mivart. Dr. Mivart was well known as an illustrious biologist who was at the same time an ardent Catholic. He had recently, however, had some controversy with Cardinal Vaughan on account of articles written by him in the *Nineteenth Century* and the *Fortnightly Review*, which led to his excommunication.

The St. Louis Medical Society of Missouri.—At the last regular meeting, on Saturday evening, March 31st, the special order of business was the determination of the relation of the society to the official journal and to other journals desiring to publish an account of the proceedings. Dr. G. W. Broome presented an interesting case and exhibited a specimen.

The Pennsylvania Society for the Prevention of Tuberculosis.—The annual meeting will be held on Wednesday, April 11th, at the Academy of Natural Sciences, Philadelphia.

The Richmond Academy of Medicine and Surgery.—The subject for discussion at the meeting of Tuesday, March 27th, was the difference in the causes, symptoms, treatment, and results of grippe and colds.

Marine-Hospital Service Health Reports.—The following cases of small-pox, yellow fever, cholera, and plague were reported to the surgeon-general during the week ending March 31, 1900:

Small-pox—United States.

Aurora, Ill.	Mar. 3–17	7 cases.	
Chicago, Ill.	Mar. 17–24	3 "	
Evansville, Ind.	Mar. 17–24	6 "	
Wichita, Kansas	Mar. 17–24	8 "	
Covington, Ky.	Mar. 17–24	14 "	
New Orleans, La.	Mar. 17–24	71 "	14 deaths.
Portland, Me.	Mar. 17–24	1 case.	
Detroit, Mich.	Mar. 17–24	2 cases,	1 death.
Albert Lee, Minn.	Mar. 20	2 "	
Anoka County, Minn.	Mar. 20	15 "	
Butterfield, Minn.	Mar. 20	1 case.	
Freeborn County, Minn.	Mar. 20	15 cases.	
Lesueur County, Minn.	Mar. 20	1 case.	
Minneapolis, Minn.	Mar. 20	42 cases.	
Northfield, Minn.	Mar. 20	7 "	
Rice County, Minn.	Mar. 20	1 case.	
St. Paul, Minn.	Mar. 20	6 cases.	
Watonwan County, Minn.	Mar. 20	2 "	
Omaha, Neb.	Mar. 17–24	1 case.	
New York, N. Y.	Mar. 17–24	2 cases.	
Cincinnati, Ohio	Mar. 17–23	1 case,	1 "
Cleveland, Ohio	Mar. 17–24	10 cases.	
McKeesport, Pa.	Mar. 17–24	1 case,	1 "
Greenville, S. C.	Mar. 17–24	2 cases.	
Salt Lake City, Utah	Mar. 17–24	6 "	
Millboro, Bath Co., Va.	Mar. 16	12 "	
Portsmouth, Va.	Mar. 17–24	1 case,	1 "
Spokane, Wash.	Mar. 17–24	2 cases.	
West Salem, Wis.	Mar. 21	5 "	

Small-pox—Foreign.

Prague, Austria	Mar. 3–10	3 cases.	
Antwerp, Belgium	Mar. 3–10	3 "	1 death.
Rio de Janeiro, Brazil	Feb. 2–9	25 "	22 deaths.
Province of Montreal, Canada	Mar. 26	1 case.	
Santiago, Cuba	Mar. 14	Reported.	
Cairo, Egypt	Feb. 18–25		3 "
Birmingham, England	Mar. 3–10	2 cases.	
London, England	Feb. 24–Mar. 3	7 "	1 death.
Lyons, France	Feb. 24–Mar. 3		1 "
Athens, Greece	Mar. 3–10	7 "	6 deaths.
Bombay, India	Feb. 13–20		228 "
Calcutta, India	Feb. 3–10		24 "
Kurrachee, India	Feb. 11–18	12 "	6 "
Chihuahua, Mexico	Mar. 10–17		3 "
City of Mexico, Mexico	Feb. 25–Mar. 4	68 "	24 "
Vera Cruz, Mexico	Mar. 10–17		4 "
Moscow, Russia	Feb. 25–Mar. 3	6 "	4 "
Odessa, Russia	Mar. 3–10	7 "	1 death.
St. Petersburg, Russia	Feb. 17–Mar. 3	47 "	12 deaths.
Warsaw, Russia	Feb. 17–24		3 "
Corunna, Spain	Mar. 3–10		1 death.
Madrid, Spain	Feb. 24–Mar. 3		7 deaths.
Straits Settlements, Singapore	Feb. 3–10		1 death.

Yellow Fever—Foreign.

Bahia, Brazil	Feb. 17–Mar. 3	2 cases,	1 death.
Rio de Janeiro, Brazil	Feb. 2–9		16 deaths.
Barranquilla, Colombia	Mar. 3–10	2 "	2 "
Panama, Colombia	Mar. 13–20	2 "	1 death.
Havana, Cuba	Mar. 11–17		1 "
Laguna, Mexico	Mar. 4	Several cases,	1 "

Cholera.

Bombay, India	Feb. 13–20		1 death.
Calcutta, India	Feb. 3–10		40 deaths.

Plague—Insular Possessions United States.

Honolulu, Hawaii	Mar. 22	1 suspect,	1 death.
Manila, Philippine Islands	To Feb. 13	100 cases,	90 deaths.

Plague—Foreign.

Bombay, India	Feb. 13–20		641 deaths.
Calcutta, India	Feb. 3–10		106 "
Kurrachee, India	Feb. 11–18	4 cases,	1 death.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 24 to March 31, 1900:*

CARSON, SAMUEL K., Acting Assistant Surgeon, United States Army, is assigned to temporary duty with troops on the transport *Meade*, to sail for the Philippine Islands March 17th, and report to the commanding general for duty on arrival there.

COMBE, FREDERICK J., Major and Surgeon, United States Volunteers, will proceed from New York city to San Francisco for duty.

DUVAL, DOUGLAS F., First Lieutenant and Assistant Surgeon, United States Army, will proceed to Manila and report in person to the commanding general, Department of the Pacific, and Eighth Army Corps, for assignment to temporary duty until the hospital ship *Missouri* returns to Manila.

HYSSELL, JAMES H., Major and Surgeon, United States Volunteers, is detailed as a member of the board of officers convened by Par. 2, S. O. 31, c. s., these headquarters, *vice* CARR, LAWRENCE C., Major and Surgeon, United States Volunteers, relieved.

MANLY, CLARENCE J., First Lieutenant and Assistant Surgeon, United States Army, will report for temporary duty with troops on the transport *Meade*, to sail from San Francisco about March 17th.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending March 31, 1900:*

KENNEDY, J. T., Assistant Surgeon. Ordered to additional duty at the marine recruiting rendezvous, San Francisco.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the United States Marine-Hospital Service for the Fourteen Days ending March 29, 1900:*

BERRY, THOMAS D., Assistant Surgeon. To proceed to New Orleans and report to the medical officer in temporary charge for duty and assignment to quarters.

GLENNAN, A. H., Surgeon. To proceed to Port Townsend, Washington, as inspector of quarantines.

PURVIANCE, GEORGE, Surgeon. Granted leave of absence for fifteen days from March 24th.

STEPHENSON, CHARLES W., Hospital Steward. To proceed to Chicago and report to the medical officer in command for duty and assignment to quarters.

WASDIN, EUGENE, Surgeon. To report in Washington for special temporary duty.

WHITE, M. J., Assistant Surgeon. To proceed to Reedy Island Quarantine Station for special temporary duty.

WILLIAMS, L. L., Surgeon. Leave of absence for two days (Paragraph 179, Regulations, M.-H. S.) from March 27, 1900.

Appointment.

BERRY, THOMAS D., of Texas, commissioned as assistant surgeon from March 24, 1900.

WAAS, W. THEODORE, appointed acting assistant surgeon for duty at Fernandina, Florida.

STEPHENSON, CHARLES W., of Ohio, appointed hospital steward.

Society Meetings for the Coming Week:

MONDAY, *April 9th:* New York Academy of Medicine (Section in General Surgery); New York Academy of Sciences (Section in Chemistry and Technology); New York Medico-historical Society (private); New York Ophthalmological Society (private); Lenox Medical and Surgical Society, New York (private); Harlem Medical Association of the City of New York; Gynæcological Society of Boston; Burlington, Vermont, Medical and Surgical Club; Norwalk, Connecticut, Medical Society (private).

TUESDAY, *April 10th:* New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private); New York Obstetrical Society (private); Buffalo Academy of Medicine (Section in Medicine); Kings County, New York Medical Association; Rome, New York, Medical Society; Medical Societies of the Counties of Jefferson (quarterly), Oneida (annual — Utica), Ontario (quarterly), Rensselaer, and Tioga (quarterly), New York; Newark (private) and Trenton, New Jersey, Medical Associations; Bergen (annual—Hackensack) and Cumberland (annual), New Jersey, County Medical Societies; Clinical Society of the Elizabeth, New Jersey, General Hospital and Dispensary; Fairfield, Connecticut, Medical Association (annual); Northwestern Medical Society of Philadelphia; Practitioners' Club, Richmond, Kentucky; Richmond, Virginia, Academy of Medicine and Surgery.

WEDNESDAY, *April 11th:* New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Society of the Alumni of the City (Charity) Hospital; Society for Medical Progress, New York; Medical Society of the County of Albany, New York; Tri-States Medical Association (Port Jervis), New York; Pittsfield, Massachusetts, Medical Association (private); Philadelphia County Medical Society; Kansas City, Missouri, Ophthalmological and Otological Society.

THURSDAY, *April 12th:* Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; Medical Society of the County of Cayuga, New York; New York Laryngological Society; South Boston, Massachusetts, Medical Club (private); New London, Connecticut, County Medical Society (annual); Pathological Society of Philadelphia.

FRIDAY, *April 13th:* New York Academy of Medicine (Section in Neurology); Yorkville Medical Association, New York (private); Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties, New York.

SATURDAY, *April 14th:* Obstetrical Society of Boston (private).

Births, Marriages, and Deaths.

Married.

BAUGH—COMBS.—In Ellisville, Mississippi, on Saturday, March 24th, Dr. R. B. Baugh, of Polkville, Mississippi, and Miss Bessie Combs.

Crump—Sawyer.—In New York, on Wednesday, March 28th, Dr. Walter Gray Crump and Mrs. Eudora Wright Sawyer.

Died.

Bartlett.—In Boston, on Tuesday, March 27th, Dr. George P. Bartlett, in the fiftieth year of his age.

Burdick.—In Providence, Rhode Island, on Sunday, March 25th, Mrs. L. Goodspeed Burdick, wife of Dr. Frank E. Burdick.

Butler. — In Jamaica, New York, on Sunday, March 25th, Dr. Charles Wooster Butler.

Cooper.—In Brooklyn, on Wednesday, March 28th, Dr. John Cooper, in the eighty-fifth year of his age.

Fitz-Gerald.—In New York, on Thursday, March 29th, Dr. Alphonsus Joseph Fitz-Gerald.

Hall.—In Glen Cove, Long Island, on Thursday, March 29th, Dr. Charles J. Hall, in the fifty-fourth year of his age.

Hunt.—In Metuchen, New Jersey, on Sunday, April 1st, Emma Madolin Hunt, daughter of Dr. A. Clark Hunt.

Lockwood.—In Bournemouth, England, on Sunday, March 11th, Dr. John Alexander Lockwood, United States Navy, retired.

Pusey.—In Biloxi, Mississippi, on Sunday, March 25th, Virginia, daughter of Dr. C. M. Pusey, of Chicago.

Skinner.—In Viareggio, Italy, on Tuesday, March 27th, Dr. Winslow W. Skinner, formerly of New York, in the forty-fifth year of his age.

Stackpole. — In Dover, New Hampshire, on Wednesday, March 28th, Dr. Paul A. Stackpole, in the eighty-sixth year of his age.

Wood. — In Stamford, Connecticut, on Monday, March 26th, Anna C. Wood, wife of Dr. David Wood, of Havana, Cuba.

Obituaries.

WINSLOW W. SKINNER, M. D.

It is announced that Dr. Skinner died in Viareggio, Italy, on March 27th, at the age of about forty-five years. He was a native of Youngstown, New York. His medical education was obtained in Paris. On his return home he settled in New York and soon became a member of the staff of the *New York Medical Journal.* He was engaged also in other work in medical literature, and in every situation he won the respect and esteem of his associates and of all who knew him. In a few years he was found to be affected with tuberculous disease of the bronchial glands, and he was obliged to leave New York. He spent some time in the Adirondacks, and then went to Italy, where he engaged in practice. His death will be keenly regretted by everybody who had the privilege of knowing him.

Pith of Current Literature.

Medical Record, March 31, 1900.

Muscular Rheumatism. By Dr. I. Adler.—Dr. Adler is satisfied that salol and its compounds are preferable to salicylate of sodium in muscular rheumatism, and has obtained better results from the local application of cold than from hot fomentations and hot-water bags. He believes that the so-called muscular rheumatism is an infection with germs—streptococci or staphylococci of attenuated virulence.

Observations on the Treatment of Cancer. By Dr. A. R. Robinson.

The Cardinal Pathognomonic Sign of Fracture of the Lower End of the Radius (Colles's). By Dr. Martin W. Ware.—In a series of three hundred cases of Colles's fracture, the silver-fork deformity was encountered in less than ten per cent. of the cases. The doctor observing that while under normal conditions the styloid of the radius is at a lower level than that of the ulna, and a line drawn between the two styloids is an oblique line, in every case of fracture of the lower end of the radius this line is leveled. This, in the doctor's opinion, is a diagnostic point of the first importance.

Locomotor Ataxia. By Dr. B. C. Loveland.—A description of the affection, with two cases.

The Journal of the American Medical Association, March 31, 1900.

The Humane Side of Warfare. By Dr. N. Senn.

A Pathologic Study of Eighty Tumors of the Mammary Gland, with Special Reference to the Occurrence of Malignancy. By Dr. Fritz Carleton Hyde.

Observations in Laryngotomy; Tracheotomy; Intubations; Based on Clinical and Experimental Evidence. By Dr. George W. Crile.

The Interdependence of Physiology and Morphology and their Educational Importance. By Dr. James Weir, Jr.

Are we Degenerating? If so, why? By Dr. E. Stuver.—Dr. Stuver believes that the spread of venereal diseases, tuberculosis, stimulants, and narcotics is tainting the blood and lowering the vital resistance of the nation, and if we would avert the fate of Rome, we must avoid the evils that led to Rome's downfall.

Notes on Fractures of the Long Bones without Deformity. The Subperiosteal Type of Fracture in the Young. By Dr. James Porter Fiske.

Albuminuria; its Prognostic Value in Chronic Nephritis. By Dr. Charles Alling Tuttle.

Simple and Ethereal Sulphates. A Simple and Rapid Method for their Separate Determination — Thirty Minutes.—By Dr. G. W. McCaskey.

A Study in Anæsthesia. By Dr. Rosalie M. Ladova.

A Physiologic Consideration of the Food Value of Alcohol, with Especial Reference to the Experiments of Professor W. O. Atwater, contained in Bulletin No. 69 of the United States Department of Agriculture. By Dr. Frank Woodbury and Dr. Seneca Egbert.

Shoulder-humero-scapula Articulation. By Dr. Thomas H. Manley.

Philadelphia Medical Journal, March 31, 1900.

The Inaccuracies of Home Modification of Cow's Milk. By Dr. Charles E. Woodruff.

A Case of Poliencephalomyelitis in an Adult. Presenting the Clinical Picture of Landry's Paralysis, and Terminating Fatally in Thirty-eight Hours after the Appearance of the First Definite Symptoms of Motor Disturbance. By Dr. De Witt H. Sherman.

The Prevalence and the Diagnosis of Leucæmia. By Dr. George Dock.

A Case of Membranous Non-diphtheritic Croup with Recurring Laryngeal Stenosis. By Dr. Hermann

B. Sheffield.—In a recent paper on diphtheria (*New York Medical Journal*, December 30, 1899), Dr. Sheffield emphasized the frequency with which membranous croup is met without the presence of diphtheria bacilli or any other pathognomonic signs of diphtheria. The case that follows strengthens his view. Two cultures were made of pieces of the coughed-up membrane, but no diphtheria bacilli were found.

An Unexplainable Congestion and Enlargement of the Left Arm Cured by an Exploratory Operation. Splenectomy. By Dr. Orville Horwitz.

Research into the Cause of Collapse or Death from Blows upon the Lower Chest and the Epigastrium. By Dr. George W. Crile.

Medical News, March 24, 1900.

Suprarenal Therapy. By Dr. W. H. Bates.—The aqueous extract of the suprarenal capsule is the most powerful astringent and hæmostatic known, and the author places great reliance upon it in all forms of inflammation and in inflammations in all parts of the body. It is the strongest known stimulant of the heart, and the reason that the use of this powerful substance has been followed by so little disturbance during a period of six years is that it is a material which is necessary to the normal functions of the body. Within the limits of its sphere of activity no other substance can take its place.

Some Directions as to the Care of the Hair. By Dr. George Thomas Jackson.—A plea to devote more attention to the hair during and after fevers; for, though such matters seem trivial to the physician, they do not appear so to the patient.

Neurological Observations in the Hawaiian Islands. By Dr. Daniel R. Brower.—It is possible to secure on the islands almost any desired climatic condition, but the general effect of the sea-level climate on the Anglo-Saxon is one of depression, and neurasthenia is not uncommon. The climate's uniformity makes it a desirable place for the spinal scleroses generally, and these diseases prevail there only to a very slight extent. The types of insanity among the natives are usually mild, and violent manifestations of mania are seldom seen. Notwithstanding the prevalence of syphilis, there has never been a case of general paresis in the large hospital for the insane at Honolulu. The proportion of the anæsthetic or nervous form of leprosy on the islands is less than twenty-five per cent. The tubercular forms constitute fifty per cent. of the cases, and the remainder are of the mixed type. On the islands the hereditary ætiology of leprosy is abandoned, and it is regarded as contagious. Its rapid spread among the natives is accounted for by their lowered resistance—a consequence of the prevalence of syphilis and the socialistic tendencies of the natives.

Alcohol as a General Stimulant and Heart Tonic; its Use to the Animal Economy in Health and Disease. By Dr. T. J. Hillis.—An interesting paper on the subject. "If the physician could look at alcohol in the abstract," and not with the bias of so-called temperance doctors and prohibitionists, "the objection to its use, when it could be useful, would quickly disappear." (To be continued.)

Medical News, March 31, 1900.

Myocarditis in Infancy and Childhood. By Dr. Henry Koplik.—The doctor states that this is one of the most important conditions met with at the bedside of the sick infant and child. While admitting the difficulty of diagnosis during life, he thinks that faintness, pallor, vomiting, and disturbed and irregular heart action in the course of an infectious disease are significant. Therapeutic methods in reducing temperature must compromise the utility of the heart.

Uterine Fibroids Complicated by Pregnancy. By Dr. Willis E. Ford.

Toxines from a Chemical and Pathogenic Standpoint. By Dr. A. E. Austin.

Alcohol in Health and Disease. By Dr. T. J. Hillis.—"Alcohol is a form of food already digested, but it is not adapted to the normal wants of the body, and is only indicated at a time and under conditions which render the digestion and assimilation of other foods impossible."

A Case of Pneumohydrothorax with Great Permanent Displacement of the Heart. By Dr. Charles Ross Jackson.—Clinical lecture.

The Treatment of Whooping-cough. By Dr. Henry Coggeshall.—In cases later than early infancy, cocainize as much of the nasal mucous membrane as can be done with a spray. Follow with an application of two- to four-per-cent. solution of nitrate of silver to nose and nasopharynx, then follow with a mild alkaline and antiseptic wash by spray or postnasal douche.

Boston Medical and Surgical Journal, March 22, 1900.

The Open and Operative Treatment of Fresh Fractures. Is it ever Justifiable? By Dr. Charles L. Scudder.—With an analysis of the results of the present methods of treatment in one hundred and fifty-three fractures of the lower extremity. (To be continued.)

Intermittent Gastric Hypersecretion, with a Report of a Case. By Dr. Arthur W. Elting.

A New Needle Holder. By Dr. George H. Monks.

A Self-closing Stopper for an Ether Bottle. By Dr. L. R. G. Crandon.

Boston Medical and Surgical Journal, March 29, 1900.

Typhoid Spine. By Dr. R. W. Lovett and Dr. Charles F. Withington.

Idiopathic Pneumothorax, with Recovery after Aspiration. By Dr. Elisha S. Boland.

The Open or Operative Treatment of Fresh Fractures. Is it ever Justifiable? By Dr. Charles L. Scudder.—Some highly interesting tables of unselected cases of fractures are given with a view to showing the results many years after treatment.

Bradycardia, with Intermittent Albuminuria. By Dr. Andrew H. Whitridge.

Pœdiatrics, March 15, 1900.

The Hygiene of Children's Sleeping Apartments. By Dr. Joseph Byrne.—Dr. Byrne gives a very graphic and by no means overdrawn picture of the horrors of the dark middle rooms in many tenements, of the vitiation of the air by the use of a stove, especially the gas stove, and of the insufficiency of what passes for sleep on the part of many a poor child, but is in reality "a restless, semistuporous condition," with the child "tortured by dreams and nightmares."

Cretinism, with a Report of a Case of the Sporadic Variety. By Dr. Christopher Graham.

Five Years' Experience in Private Practice with Diphtheritic Antitoxine Serum. By Dr. Frank W. Wright.

A Fatal Case of Carbolic-acid Poisoning in an Infant, Due to Absorption by the Skin. By Dr. R. Abrahams.

The Lancet, March 24, 1900.

The Typhoid Bacillus and Typhoid Fever. By Dr. P. Horton-Smith.

The Surgery of the Stomach. By Dr. A. W. Mayo Robson.—In the third of the Hunterian lectures upon this subject the writer first discusses injuries and wounds of the stomach. Owing to its anatomical position, the stomach is rarely ruptured by blows upon the abdominal wall from blunt instruments, etc. Where rupture is suspected, it is advised that the stomach be inflated before any operation is undertaken, thus determining whether rupture has taken place. The operation consists in arresting hæmorrhage, closing the laceration with Lembert sutures, cleansing the peritonæum, and closing up. Cancer of the stomach, its occurrence, its signs and symptoms, and its prognosis, are next discussed. Dr. Robson thinks that surgical interference should be considered at a much earlier period than is now the custom, since simple cancer of the stomach offers an even more favorable opportunity for a radical operation than cancer of the breast or tongue. An analysis of cases in which the radical operation has been performed by Maydl, Kocher, and Czerny is given and shows that the prognosis is not so hopeless as supposed. Of Maydl's twenty-five cases, four died from the operation, seven had recurrence of the disease within from two to twenty months, and fourteen were still alive. In seven of the fourteen, over two years had elapsed since the operation. Kocher resected the pylorus in fifty-seven cases with a mortality of 8.7 per cent. Of the recovered cases, four are still living. Czerny operated in twenty-four cases with a mortality of 37.5 per cent. Four of the cases were still alive.

The operation may be radical (pylorectomy) or palliative (gastrostomy, jejunostomy, gastro-enterostomy, and total gastrectomy). Descriptions of these various operations are given, with tables compiled from the reports of various operators, and diagrams. Two hundred and seventy-three cases of pylorectomy gave a mortality of thirty-four per cent. Seven hundred and sixty-nine cases of gastrostomy gave a mortality of 44.2 per cent., the same as in nine cases of jejunostomy. Of eight cases in which complete gastrectomy was performed, death took place in four—fifty per cent. In certain cases a partial gastrectomy may be performed. Of the last thirty-two operations on the stomach performed by the writer in his private practice all recovered.

Practical Observations on Cancer of the Breast. By Sir W. M. Banks.—(See abstract of the *British Medical Journal* for March 24th in this number of the *Journal.*)

Note on the Causation of Cancer. By Sir James Sawyer.—The writer states his belief that the increase of cancer in England in recent years is due to the increased feeding of the population upon meat. He does not think that vegetarians escape cancer, but comes to the above conclusion because the increase of cancer is principally in the males of the lower and middle classes, and the greatly increased consumption of meat has taken place almost entirely in those classes. Such meat consumption is the only great and widely spread change that has taken place in their habits of life.

On the Influence of the Temperature of Liquid Air on Bacteria. By Dr. A. MacFadyen.—The writer reports the results of a series of experiments in which he exposed certain micro-organisms to the temperature of liquid air. The organisms tested were the following: *Bacillus typhosus, Bacillus coli communis, Bacillus diphtheriæ, Spirillum choleræ asiaticæ, Proteus vulgaris, Bacillus acidi lactici, Bacillus anthracis* (sporulating culture), *Staphylococcus pyogenes, Bacillus phosphorescens* and *Photobacterium balticum.* In no instance, whether on solid or liquid media, could any impairment of their vitality be detected. The photogenic bacteria preserved their normal luminous properties. The various organisms were exposed to a temperature of − 190° C. for a period of twenty hours.

Phosphatic Diabetes. By Dr. Guthrie Rankin.

A Case of Irreducible Dislocation at the Elbow. By Dr. R. H. Russell.—The writer reports a case of backward dislocation of both bones of the forearm in a boy aged eight years, due to a fall. All efforts at reduction, even under chloroform, were of no avail. Upon operation it was found that the humerus had pushed its way through the anterior ligament of the joint, and had become lodged in front of the brachialis anticus muscle, which latter was pinched between the humerus and coronoid process of the ulna, so preventing reduction. A portion of the muscle was removed and the dislocation reduced, a perfect cure resulting.

The British Medical Journal, March 24, 1900.

Practical Observations on Cancer of the Breast. By Sir W. Banks.—In the second of the Lettsomian lectures the author dwells first upon some popular errors in regard to the disease. Where there is no history of cancer in the family, where the tumor is painless, or where there is no cachexia, the possibility of the tumor being cancerous is often thought to be slight, and the disease is neglected.

The conditions simulating cancer of the breast are next described. Among them are chronic mastitis, small chronic abscess with induration, small fibro-adenomata, and small, tight, simple cysts. The writer employs the following points of practice as a matter of routine: 1. Never remove a breast without first cutting into the tumor. 2. When advisable, use a small exploring trocar and cannula for diagnosis. 3. Always examine a breast tumor in three positions—from behind, the patient standing; from in front, the patient sitting down; and from above, the patient being in a recumbent position.

After touching upon the subject of cases of acute mania after operations on the breast, he next takes up the subject of chronic mammary induration, or chronic interstitial mastitis. The causation and course of the affection are described, and the following treatment is recommended. The breast is bathed with very hot water, morning and evening, followed by inunction with mercurial ointment for a week, when liniment of potassium iodide with soap is substituted for another week, and so on alternately. When the skin becomes tender and a crop of pustules appears, the inunctions are discontinued, and zinc ointment is used, pressure being applied by means of a broad elastic bandage. Potassium iodide is given internally. He states his belief that such chronic mastitis may become cancerous, and that this fact is not sufficiently widely known. In fact, where such mastitis does not yield to treatment, the removal of the breast is both justifiable and advisable. But it is the chronic mastitis of the menopause that is dangerous, not that following acute milk abscesses in younger women. The practice of removing a portion of the suspected tumor in such cases for microscopical examination is not thought to be of much service. After referring to the parasitic theory of cancer, the article closes with a description of the histological changes to be noted when a case of interstitial mastitis becomes cancerous. Several excellent photomicrographs of sections accompany the article.

Vomiting Considered from Some of its Surgical Aspects. By Dr. W. H. Bennett.

The Surgery of the Stomach. By Dr. A. W. Mayo Robson.—(See abstract of the *Lancet* for March 24th, in this number of the *Journal.*)

A New Method of Performing Perineal Prostatectomy. By Dr. P. J. Freyer.—After discussing all the various operations for the relief of senile enlargement of the prostate, the writer reports a case of enlarged prostate in a man aged fifty-nine, upon whom he operated as follows: The urethra was opened in front of the prostate on a staff and the tumor examined. A crescentic incision four inches long was made from the median rhaphe at the urethral wound to the coccyx. The dissection was carried deep into the ischio-rectal fossa, the rectum being retracted out of the way. The tumor of the prostate was then pressed out of the wound by means of the forefinger, passed through the urethral wound, and removed piecemeal by means of cutting forceps. Only a thin layer was left to support the mucous membrane of the bladder and urethra. A perineal tube was passed through the urethral opening into the bladder and kept in position, carrying off all the urine. The tube was removed in six days, and the patient recovered perfectly. This operation is applicable only to certain forms of the disease. Where the middle lobe of the prostate projects into the bladder, or where the tumor is too large for the finger to hook it down, M'Gill's operation is preferable.

L'Indépendance médicale, March 21, 1900.

Drastic Purges. By M. Pouchet.

The Contagiousness of Measles.—M. Graucher discusses the contagiousness of rubeola. He argues in part with Béclère that measles can be acquired only by contagion; that it is contagious during the periods of invasion and eruption. The duration of the period of contagion seems to be from eight to ten days. The nature of the contagious element is unknown, but it is probably in the respiratory mucus and secretions of the patient. The desquamation may or may not be contagious. The contagion is not diffusible in the atmosphere and is very tenacious. It may be carried for some distance. Direct contact is most fertile in propagating the disease. The author believes that physicians can transport the disease. He advises washing of the hands after touching or examining a patient suffering from measles.

Epilepsy due to Influenza.—M. Gélineau calls attention to a form of epilepsy which follows attacks of influenza. The epilepsy is of obscure origin. It may be due to changes in the blood caused by the germs of the disease, or to punctate cerebral hæmorrhages. Experimentally, effusion into the ventricles and focal hæmorrhages have been caused by intracerebral injections of influenza bacilli. The ætiology is, however, still ground for speculation. The author merely wishes to call attention to a form of epilepsy following *la grippe*, somewhat related to the Jacksonian form, somewhat to genuine epilepsy.

Hæmatic Medication.—M. Letort reports his experiences with hæmorubin, a constituent of the normal blood to the extent of fourteen per cent. In various diseases he found that hæmorubin existed in from two to ten per cent. Hæmorubin occurs in brown crystals, soluble in water, less so in alcohol. Exposed to the air, it rapidly surrenders its oxygen. It contains mainly iron, sulphur, carbon, a little arsenic, and a great deal of oxygen. It is easily borne and quickly assimilated by the stomach or when given subcutaneously. The average dose is from fifteen to forty-five grains a day. It is best to begin with doses of one grain three times daily in some drink, which may be rapidly increased to forty-five grains daily. The results are an improvement in the blood, deepened respirations, regular pulse, increase of energy and of appetite. In other words, there is a general amelioration, and the blood shows an increased amount of oxyhæmoglobin.

La Presse médicale, March 14, 1900.

Reduction of the Size of the Shoulders in Difficult Labor.—M. E. Bonnaire mentions in detail the various procedures which have been recommended to reduce the bisacromial diameter in breech extraction. In cephalic delivery the two clavicles and the sternum are less exposed to fracture or dislocation than in a breech delivery, because the shoulders are not very immovable after the arms have been released on each side, and the clavicles can in some way glide down and be safely delivered. The looseness of their attachment to the sternum and to the acromial process is great, the internal fibro-cartilaginous disc is soft and thick, and the upper part of the thorax is exceedingly elastic, owing to the softness of the infantile ribs. The reduction of three centimetres, which it is necessary to obtain in the diameter of the shoulders, depends upon two factors: the fixation of the clavicles and the yielding of the soft parts. The author explains the relative importance of these details, and shows how this can be accomplished by cleidotomy, the clavicles then forming a V shape. The operation has never been performed upon the living infant. It is indicated in all cases of extraction of the shoulders absolutely or relatively too large, in preference to all other mutilating operations. It is to be performed (1) in cases of pelvic deformity when the shoulders are arrested at the superior strait or in the pelvis after the extraction of a crushed head; it is then less dangerous for the maternal parts than the bringing down of the arms; (2) when the shoulders are absolutely too large to pass through the pelvis; (3) in cases of rupture of the uterus, or of threatened rupture, when it is essential to reduce to a minimum the necessary efforts of the uterus for the expulsion of the shoulders. The operation of cleidotomy is simple and is performed with ordinary scissors, such as are used for embryotomy. They must be strong and long, however. The cutting is done with the index and middle fingers as guides. The operation is elegant in that the fœtus is not much mutilated, it is easy of execution, and renders extraction of the fœtus easy.

The Absorptive Power of the Pleura in Sero-fibrinous Pleurisy.—M. Ramond and M. Tourlet find that in a sero-fibrinous pleurisy, the absorptive power of the pleura varies with the length of the disease. At the beginning it is normal, but it progressively diminishes, and is zero at the height of the disease. An evacuating puncture is not urgent at the beginning, unless there are special symptoms demanding it. Later, it may be useful; but its merits must be adjudged in each particular case.

Furuncular Eruption Due to the Eberth Bacillus in a Case of Typhoid Fever.—M. M. Busquet reports such a case, in which furuncles appeared in the third and fourth week of typhoid fever from which the typhoid bacillus was isolated.

La Presse médicale, March 21, 1900.

Striated Muscular Fibre. By M. G. Durante.—This is a thorough histological study in which the author concludes and shows that the two great pathological modifications of striated muscle tissue are (1) degenerations, and (2) cellular regenerations or a return to the embryonal state.

Peritonitis due to Streptococcus.—M. Milian and M. Herrenschmidt report the case of a young woman who died of an acute suppurative peritonitis, which yielded a pure culture of the streptococcus, and in whom there was no demonstrable abdominal lesion. The only element which could be regarded as an ætiological factor was a tonsillitis from which the patient suffered. This was the more probable on account of the presence of streptococci. The authors compare this form of peritonitis with that due to the pneumococcus.

Treatment of Epilepsy. By M. R. Romme.

Le Progrès médical, March 10, 1900.

Exaltation and Depression in Relation to Epileptic Seizures. By M. M. de Fleury.

Sinuscopy for Determining Operative Procedures in Diseased Sinuses of the Face.—Dr. Suarez de Mendoza recalls that the first operation for a purulent collection in the maxillary sinus was performed by the elder Meibomius in 1660. Cowper and Drake in 1727 improved his method and secured better drainage by a large perforation of the alveolus. The author traces briefly the history of operative procedures in the antrum of Highmore. He makes a preliminary communication as to his own method of inspecting the maxillary sinus. He always makes an exploratory puncture of the sinus at the level of the inferior meatus. If the puncture shows the presence of fluid, simple inspection of the sinus is indicated. The author performs this either through the alveolus or through the inferior meatus with a tubular bore lighted by electricity and guided by the trocar inserted into the internal wall of the sinus. Lavage may be performed through the sinuscope as often as desired. The author has seen with the aid of the instrument fungosities in the sinus; he has curetted through it to enlarge an alveolar perforation and to open the external wall of the sinus.

Le Progrès médical, March 17, 1900.

Statistics of the Surgical Operations at the Hospital Bichat in 1899. By M. Félix Terrier.

The Necessity of Gastric Lavage before Gastroenterostomy.—M. René Belin, in the review of a case of a patient with pyloric stenosis who vomited incessantly until gastric lavage was practised, concludes that before operating upon patients with pyloric affections, contractures, or neoplasms, the one preoperative measure which must not be omitted is a thorough washing of the stomach. It is not only a measure of asepsis, but it provides for the retention of food in a manner which can not be equaled by other procedures.

Gazette hebdomadaire de médecine et de chirurgie, March 15, 1900.

Hæmorrhage in the Left Part of the Pons Varolii.—M. G. B. Queirolo reports a case of a hæmorrhage in the left half of the pons Varolii involving the sensitive fibres entirely below their crossing (giving rise to total right hemianæsthesia), the pyramidal tract below the decussation of its fibres going to the anterior horns of the cord, and the medulla beneath the decussation of the fibres going to the nucleus of the facial nerve, which evoked a right hemiplegia, leaving the face intact. The lesion also involved the nucleus of the left facial, causing left facial paralysis, and the left nucleus of the abducens, giving rise to paralysis of the right externus of the left eye. At the autopsy atheroma of the vessels of the base of the brain was found; the left half of the pons Varolii was softened and was the seat of a hæmorrhagic focus.

Gazette hebdomadaire de médecine et de chirurgie, March 18, 1900.

Subarachnoid Injections and the Subarachnoid Fluid.—M. A. Sicard proves experimentally that animals easily endure the subarachnoid injection of nontoxic substances; they become rapidly anæsthetized by a similar injection of cocaine or morphine, anæsthesia appearing in from three to four minutes and persisting for an hour or two, with total absence of circulatory or respiratory disturbances or mental phenomena. Death followed the injection of pneumococci and tetanus toxines much more quickly than when these were injected subcutaneously. After inoculating a filtered culture of tetanus toxines subcutaneously, the subarachnoid instillation of the antitetanic serum was much more powerful in its effects than when the direct cerebral method of Roux and Borrel was practised. Therapeutically, good results are wanting in tetanus cases. In a case of general paresis with intense epileptic crises, the subarachnoid injection of sodium chloride prevented an attack for three months; three epileptics were not benefited by similar injections of potassium bromide. Two of three cases of cerebro-spinal syphilis were markedly improved by the subarachnoid injection of iodide of potassium.

Psychic Hallucinations.—M. E. M. de Montyel says that psychic hallucinations must be held to be confused images which together make an idea or notion; they may be visual, auditory, or motor in their nature; the hallucinations correspond in form to the manner of the patient's cerebration; they may be conscious or subconscious. If they are subconscious, they may give rise, like sensory hallucinations, to delirium. These deliria may be of three degrees: 1. In the first degree, the subject says some external influence impedes his thought or gives rise to notions despite himself. In the second degree, the subject believes that the notions forced upon him despite himself are not his own but those of some other person who makes him think they are his, and the hallucination may be visual, auditory, or motor. In the third degree, a double personality

Gazette hebdomadaire de médecine et de chirurgie, March 22, 1900.

Oblique Subtrochanteric Osteotomy for Ankylosis of the Hip.—M. Louis Mencière narrates the case of a girl, eleven years and a half of age, who had the right thigh flexed upon the abdomen in internal rotation. There was a secondary genu valgum. There was a solid ankylosis at the hip joint. Macewen's operation of osteotomy was performed with the result of correction of the deformity and the disappearance of the genu valgum.

Journal des praticiens, March 17, 1900.

A Case of Arterio-sclerosis and Irreducible Asystole.—M. Pierre Merklen lectured on a case of arterio-sclerosis and irreducible asystole which occurred in a vigorous man of sixty-five. He suffered from cardiac insufficiency marked by dyspnœa and a pseudo-angina. His dyspnœa increased, general anasarca developed, and a permanent asystole was established. He died, after six months, from a pulmonary embolus. The autopsy showed that the principal lesions were arterio-sclerosis of the kidney and lung, a secondary hypertrophy and dilatation of the heart, and an interstitial myocarditis, a double pleurisy and a pulmonary infarct. The prognosis in cases of asystole, says the author, depends upon the causes and the organism itself. It will not yield to treatment if the exciting peripheral causes are irremediable, such as pulmonary and renal arterio-sclerosis. The condition is often aggravated by the secondary visceral lesions which result from stasis and œdema when an infection or intoxication is imposed upon the simple mechanical disturbances of circulation. Secondary sclerosis of the myocardium and chronic inflammation of the serous membranes, especially the pleuræ, are the gravest of these lesions. Alcoholists and patients with arterio-sclerosis and renal insufficiency are bad subjects. As for treatment, attention to the bowels, rest in bed, a vigorous milk diet, are important at the beginning. The earlier the treatment is begun the better, as intoxications and secondary complications may be thus avoided.

Lyon médical, March 11, 1900.

Results of Copper Electrolysis in the Treatment of Ozæna.—M. R. Etiévaut reports a number of cases in which the fœtor ceased at the beginning of treatment, and in which a regeneration of the mucous membrane took place. The sense of smell, too, was improved because the factor of its disturbance, apoplexy of the mucous membrane, was attacked. Vertigo and dental pain may be felt during the electrolytic action, but they soon vanish when the patient assumes the recumbent position. No other disagreeable results are noted. In a comparatively few sittings the results above mentioned are achieved and the cure remains permanent. The author attributes these good results to the cataphoretic action of the constant current, which modifies the pathological condition and stimulates the cellular and secretory functions, besides having a bactericidal effect.

Hyperthermia: Temperature of 109° F. for Several Days; Recovery. By M. J. Rendu.—The patient was an hysterical young woman who, four years previously, had been supposed to have an acute miliary tuberculosis from which she recovered. She was admitted for diarrhœa and vomiting. There was a slight exophthalmia and the thyreoid body was slightly enlarged. The urine was negative. On the fourth day the temperature rose to 109.4° F., and on the succeeding day to 110° F. It remained between 107° and 110° F. for two days, when it dropped suddenly to 98.4° F. with a single subsequent temporary rise to 103.5° F. During the period of hyperthermia there was no sweating or tachycardia; the skin gave the impression of a temperature of about 103° F. The physical examination disclosed nothing, and typhoid fever and acute miliary tuberculosis were easily excluded. The author believes that the hyperthermia bore some relation to the Basedow's disease from which the patient was suffering. The young woman left the hospital well.

Lyon médical, March 18, 1900.

Ciptin in the Contaminated Wells of Guillotière and Brotteaux, and in the Water of the Rhone. By M. M. H. Causse.

Mikulicz Drainage of the Vagina.—M. P. Goulliond has not been satisfied with the results of vaginal drainage when it is necessary after an abdominal or a combined vaginal and abdominal operation. He now avoids every combined operation and, if drainage is required, as he is about to finish the abdominal procedure, he takes one or several strips of sterilized or iodoform gauze and carries it into the abdomen with a forceps until it rests in the cavity which contains the oozing surface where hæmostasis or isolation is desired. The coils of intestine are raised and rest upon the aseptic Mikulicz drain which is left in the pelvis while the abdominal wound is closed. The patient is placed in proper position for the thorough disinfection of the vagina, which is then incised in Douglas's *cul-de-sac*, and the vaginal end of the gauze is seized with a forceps and drawn into the vagina. The bleeding or infected area in the abdomen is thus well covered by the gauze, which has become spread out by the procedure of drawing it into the vagina. There is thus neither danger of spreading infection from below upward nor of a ventral hernia, since the abdominal wound has been tightly closed. On the tenth day the gauze is removed. The author has used this method since 1892 with excellent results.

Journal de médecine interne, February 15, 1900.

The Cure of Morphinism.—Dr. Gilles de la Tourette describes morphinism and its development. He says the prophylaxis of the habit is the best treatment. For pain it is not to be given; to a patient with cancer, it is a mercy and a charity. He regards *rapid* withdrawal as the best means of cure. This can be accomplished at the patient's house, but the author thinks it better to remove the patient to an institution where he will be away from the influences of his relatives and friends. It is necessary to guard the patient's heart and kidneys and to keep his alimentary tract in good condition. Other habits existing simultaneously, such as cocaine, coffee, and alcohol, must not be disregarded. The dose of the morphine must be reduced to one half at once, and in from six to ten days the patient must receive no more of the drug. He will have disagreeable symptoms on the part of the digestive tract—vomiting, diarrhœa, salivation—and there will be a hypersecretion on the part of the genital glands. If the heart is sound, massage and cold douches will stimulate the patient; if he goes into collapse, subcutaneous stimulation must be employed. Bromide of potassium may be employed for the deep insomnia. Hydrotherapeutic measures will act as a general tonic. Sometimes the *slow* method is the only one which can be allowed. In these instances, the extract of thebaine is given as a substitute for the morphine, but great difficulty may be experienced in weaning the patient from this drug. Supportive measures and a rapid reduction of the dose of thebaine are the other measures of treatment when the slow method is chosen. It is inferior in every way to the rapid withdrawal of morphine.

Tuberculosis of the Large Intestine, with Indications for Surgical Treatment.—Dr. H. Rendu reports a case in which a diagnosis was made between fæcal impaction, recurrent appendicitis, carcinoma, and lymphadenoma. As the patient did not improve under medical treatment, his pain and diarrhœa continuing, surgical intervention was suggested, especially since there was no severe pulmonary lesion and no excessive intestinal catarrh.

St. Petersburger medicinische Wochenschrift, March 10, 1900.

A Case of Erythema Exsudativum Multiforme.—Dr. H. Lau reports the case of a patient who contracted an alleged chancre in 1893. He had no eruption until the summer of 1894, which disappeared after mercurial inunctions and treatment at a bathing resort. Between 1894 and 1900, when he came under the author's observation, he had seven recurrences of the supposed luetic eruption, which always disappeared under antisyphilitic and hygienic treatment. When Dr. Lau saw the patient he identified the eruption as a typical erythema exsudativum multiforme. The author makes the points that it is always best to wait for the eruption before diagnosticating syphilis, and that it is no harmless matter to give unlimited amounts of mercury to a nonsyphilitic person.

St. Petersburger medicinische Wochenschrift, March 17, 1900.

Septic, Maculo-papular Erythema following Follicular Angina.—Dr. Karl Delio reports the case of a young woman who on the second day of her follicular angina had a temperature of 103° F., with a pulse of 140, and who became slightly stuporous. At the same time the eruption appeared on the forearms and the dorsum of the hands and feet and on the calves. The neck was also affected. The eruption disappeared under the pressure of the finger. Delirium set in the same night. On the following day there was enlargement of the subtonsillar and submaxillary glands and there were symptoms of a marked sepsis. The eruption spread rapidly, covering almost the entire body. The spleen was enlarged. The eruption was symmetrical over the two halves of the body. The symptoms gradually abated and with their decline the eruption faded, ending in desquamation and loss of the finger nails. The author does not regard the case as one of toxic erythema but considers it one of cryptogenetic origin, the eruption depending upon bacterial emboli in the skin, especially that part of the eruption of a scarlatiniform or measles-like character. Erythemata of this nature are to be looked at as secondary septic infections. This would explain the appearance of such eruptions in the course of acute articular rheumatism and follicular angina, since these diseases are evoked by streptococci or staphylococci.

Wiener klinische Wochenschrift, March 15, 1900.

So-called Pericarditic Pseudo-cirrhosis of the Liver. By Dr. Victor Eienmenger.

Hæmatocolpos and Hæmatometra due to Congenital Hymeneal Atresia.—Dr. E. Toff, in reporting a case of this nature occurring in a young girl of thirteen, emphasizes the importance of a careful examination at the time of puberty of young women who are subject to periodical dysuria with recurring menstrual molimina and amenorrhœa. The diagnosis made, many severe, even dangerous, complications may be prevented.

The Diagnosis of Diverticula of the Œsophagus.—Dr. Victor Blum records a case in which an early diagnosis of a diverticulum of the œsophagus was rendered possible by the aid of the Röntgen rays after œsophagoscopy had failed. The patient was made to swallow a tube closed at one end, which was then filled with mercury. On examination, an oval, ringlike shadow was visible behind the tube at a distance of about ten inches from the teeth. This was proved to be a diverticulum by the introduction of a sound filled with bismuth viewed through the fluoroscope. The dimensions of the diverticulum were found by passing into the sac a toy balloon filled with a solution of bromide of potassium, which is impermeable to the Röntgen rays. By these means the presence of a diverticulum, its exact location, its form, and its size were determined. The author considers examination by the Röntgen rays the most reliable method of diagnosticating these diverticula.

Wiener klinische Wochenschrift, March 22, 1900.

Cirrhosis of the Liver. By Dr. Richard Kretz.—The author speaks of the manifold pictures which various sections of a cirrhotic liver show under the microscope. He points out that no such liver ever shows a homogeneous cirrhosis; that even when there is atrophy, fatty infiltration, and connective-tissue proliferation some parts of the organ show foci of regeneration. In view of the various forms of histologic change, he regards hepatic cirrhosis as a focal, localized, recurrent chronic process of degeneration which in the parenchyma shows areas of regeneration. It is a process which lights up, runs its course, and undergoes healing. The hepatic cells are gifted with a wonderful power of regeneration, as has also been shown experimentally. There is also a great similarity in structure between normal liver cells and those newly formed. The author states that other observers have approached his view of cirrhosis of the liver, but through misinterpretation of their findings did not quite reach it.

Blood Pressure in Psychoses.—Dr. Alexander Pilcz has studied a number of cases of mental disease with reference to blood pressure. In progressive paralysis he finds a gradual decrease in the blood pressure, becoming lowest just before death. In melancholia there was always increased blood pressure. In circular insanity there was an increase during the melancholic stage, while there was a marked lowering during the maniacal stage. During the time of an attack he found an increase in epileptics which fell very quickly during the status epilepticus. In cases of the insanity of pubescence, the blood pressure varied in individual cases, so that no generalization is possible. Theoretical or therapeutical conclusions are not drawn by the author.

Die medicinische Woche, March 19, 1900.

The Treatment of Pes Varus and Pes Valgus.—Dr. Gustav Muskat advises forcible rotation of the foot in cases of pes varus, giving an anæsthetic when necessary, and inclosing the foot and lower half of the calf in plaster of Paris. A tenotomy of the tendon of Achilles may be necessary. He refers many cases of pes valgus to flat foot, and advises the treatment of this condition by rest in bed and the application of lukewarm moist dressings, the subsequent resort to a plaster-of-Paris splint with the foot rotated inward, massage, gymnastics, or, if necessary, apparatus of some kind.

Centralblatt für Chirurgie, March 24, 1900.

On the Question of the Operative Treatment of Trigeminal Neuralgia. By Mr. A. B. Tichonowitch.

Centralblatt für Gynäkologie, March 17, 1900.

On Decapitation with Karl Braun's Key-hook. By Dr. Karl A. Herzfeld.

Centralblatt für Gynäkologie, March 24, 1900.

Can Carl von Braun's Decapitation Hook be Improved? By Dr. Richard von Braun-Fernwald.

Deutsche Medizinal-Zeitung, March 12, 1900.

Recent Progress in the Treatment of Chronic Morphinism.—Dr. Otto Emmerich gives a preliminary report of the successful cure of chronic morphinism by the substitution of some substance which he is not yet ready to disclose.

Deutsche Medizinal-Zeitung, March 15, 1900.

The Concentration of the Fluids in the Body. By Dr. W. von Moraczewski.

Centralblatt für innere Medicin, March 10, 1900.

On Some New Drugs. By Dr. Overlach.—This article, apparently the first of a series, deals with "fortoin," a substance formed by the action of formaldehyde on cotoin, the active principle of coto bark. The author's experience with cotoin, like that of many others, has been very satisfactory, but he thinks that fortoin is still more efficient. He prescribes it in doses of three grains and a half, to be taken three times a day. It is insoluble in water. He gives brief notes of twelve cases of gastro-intestinal disturbances, mostly diarrhœa, but including several instances of persistent vomiting. In all of them the action of fortoin was prompt and satisfactory. In a case of a foul, purulent state of the tonsils he has known three applications of an emulsion of fortoin to cause the trouble to disappear entirely in the course of twenty-four hours. Urethral irrigations with a very dilute emulsion he has found decidedly serviceable in gonorrhœa, curing moderate cases in from three to eight days, and very severe ones in a fortnight. He reports having used it in eight cases of typhoid fever, with brilliant results in five and unsuccessfully in three. In no instance did it cause hæmorrhage, and he thinks that only very intense congestion contraindicates its use. He mentions Albertoni's explanation of the *modus operandi* of cotoin, namely, by heightening the nutrition of the intestinal mucous membrane, and adds that fortoin has the same action and, in addition, an antiseptic and germicidal effect.

Centralblatt für innere Medicin, March 17, 1900.

Once More on the Subject of Kakke in Nurslings. By Professor Z. Hirota.

Centralblatt für innere Medicin, March 24, 1900.

Examination of the Urine by Means of the Combined Employment of the Freezing-point and Blood-corpuscle Methods. By Dr. H. J. Hamburger.

Riforma medica, March 7, 8, and 9, 1900.

Concerning the Lesions of the Central Nervous System in Poisoning with Sodium Salicylate. By Dr. G. Paoli.—The writer has studied the lesions in the cerebral cortex produced by injecting varying doses of sodium salicylate into rabbits and dogs. He reminds us that, when given in considerable doses, and for a prolonged period, the salicylates sometimes produce serious disturbances of the central nervous system in man. These effects are not always transitory, but at times last for days and even weeks, and assume the character of psychoses. For example, Obersteiner and Wagner relate a case of salicylic poisoning accompanied by acute hallucinatory delirium; Robinson, a case characterized by maniacal excitement, and one by tranquil delirium; Krafft-Ebing, a case where the violent hallucinatory delirium lasted eight days, and was followed for several weeks by alternating excitement and apathy; and Rendu and Bernard, a similar case where the delirium was followed by sopor.

The author used Nissl's method of staining as the one which exhibits more clearly than any other the earliest changes in the cells of the cortex. On microscopic examination of the cerebral cortex of the animals experimented upon, he found: 1. That in poisoning of slight degree, the only alteration in these cells is a swelling of the cell body. This does not mean destruction of the functions of the affected cells, but a depression of nervous energy which is manifested clinically in the general fatigue which is characteristic of cases of moderate degree of salicylic poisoning. 2. That in advanced cases the change in the staining qualities of the cells indicates that the functions of the latter are destroyed. This is confirmed by the fact that the animals so affected are incapable of spontaneous motion, and finally cease to respond to any stimuli. 3. That these changes do not permanently disable the cells, but that repair takes place fairly promptly when the cause is removed. This accounts for the temporary nature of the psychic and nervous disturbances which are the result of salicylic poisoning. The effect of the poison on the cell is simply a disturbance of its nutrition.

Concerning Dermoid Cysts of the Anterior Fontanelle. By Dr. Emilio Curzio.

Rivista critica di clinica medica, March 10, 1900.

A Case of Multiple Intracranial Cysticercus Cell. (Rudolphi.) By Dr. Ernesto Parona.—The writer reports a case of multiple intracranial cysticercus, which was coincident with the presence of *T. solium*, and in which the diagnosis was confirmed by the autopsy. The patient was a man, aged twenty-six, who had been in perfect health until 1886. One day he was seized with sudden pharyngeal spasm, and with clonic contractions of the eyelids, followed by loss of consciousness. He was admitted to the hospital, where a thorough examination was completely negative, although his stools were examined for parasites microscopically. During the forty-eight days which he spent at the hospital he had three convulsive attacks, during one of which the author was present. He noted that the attack began with clonic spasms of the regions supplied by the left seventh nerve, and by the right brachial plexus, and terminated with clouding of consciousness. The seizure lasted three minutes, and left the patient weak and depressed. A month later the patient was again admitted. This time the attacks were accompanied by spasms of the left leg, the left flank, and the left side of the face, with loss of consciousness. He only had one attack at the hospital, and was discharged after four days. Three months later he came once more, having found a segment of *T. solium* in his stools, and, after receiving the usual anthelminthic drugs, he passed a complete *T. solium*, with its scolex. He was dismissed with the hope that the attacks were reflex epileptic seizures due to the presence of the tænia. It was feared, however, that the tænia had left some representative in the cranium of the patient. A week later he was seized with severe vertigo, and with general convulsions. After this he demanded admission to the hospital from time to time, as his attacks recurred. He first suffered from a paræsthesia of the left foot, with occasional pains in the leg and thigh of the same side. Thinking that this was an epileptic aura, the author ligated the limb by means of an elastic band applied at the lower third of the leg, in order to test the statement of Nothnagel that, if the aura lasts a sufficient length of time, one can abort the epileptic attack by ligating the principal vessel of the organ whence the aura starts. He soon removed the band, however, because a vesicular eruption appeared on the leg. After this the paræsthesia spread upward to the thigh, and on one occasion he again had spasms of the face and loss of consciousness. Then followed attacks of cramps in the left shoulder and in the right foot, succeeded by loss of consciousness, lasting ten minutes. Next came attacks accompanied by spasms of the left leg, vomiting, and a sense of constriction at the base of the chest; by headache and slight tremor of the right arm; by contraction of the pupil and spasms of the right leg. Finally, both pupils were contracted for some minutes, so that he could not recognize bystanders. This was followed by severe headache, by high fever, and by vomiting, which lasted three days, during which there were tremors of both limbs without loss of consciousness. He was finally removed to another hospital in a comatose condition, and died there after two days. The autopsy revealed the presence of hydatid cysts in large numbers in the substance of the cerebrum and cerebellum. The cysts varied in size from that of a small pea to that of a hazelnut. The author concludes that in the presence of a symptom-complex of this sort, especially in the presence of *T. solium*, we should think of the possibility of cysticercus in the brain. The only treatment which has given any results in such cases is the use of the extract of male fern. (To be continued.)

Vratch, February 12, 1900, O. S. (February 24th, N. S.).

Concerning the Ætiology and Treatment of Angina Pectoris. By Dr. Th. K. Geissler.

Partial Rhinoplasty by the Method of Israel. By Dr. M. M. Kouznetsoff.

Concerning the Theory of the Endothelial New Growths. By Dr. L. V. Soboleff.—The writer continues the account of the case which was begun in the previous issue of *Vratch* (see *New York Medical Journal*, page 439). The autopsy showed the presence of new growths in the stomach, in the duodenum, and in the large intestine, a chronic fibrinous peritonitis, an acute cystitis, a beginning hydronephrosis of the right kidney, and an acute inflammation of the pelvis of the left kidney. (To be continued.)

A Contribution to the Question of Suprapubic Cystotomy. By Dr. V. I. Lisiansky.—The writer continues the report of his cases (see *New York Medical Journal*, page 438), and sums up the subject with the following conclusions: 1. The complete suture of the bladder after cystotomy is only applicable in cases where the urine is healthy, where the patient is strong and well nourished, where the stone is comparatively small, and where the suture is easily performed technically. 2. In cases where the patient is weak and advanced in years, where the bladder is inflamed and the stone of large size, it is better to suture only a part of the wound or even to leave it open altogether, and to conduct the after-treatment according to the method of Assendelft. 3. The fastening of the bladder to the abdominal wall is undoubtedly a useful procedure, but the final decision concerning its value is a matter for the future to determine.

Vratch, February 19, 1900, O. S. (March 3d, N. S.).

Concerning the Theory of the Endothelial New Growths. By Dr. L. V. Soboleff.

Fibromyomata of the Vagina. By Dr. V. S. Grousdeff.

Schleich's Method of Local Anæsthesia. By Dr. A. I. Orloff.

Concerning the Therapeutic Uses of Light. By Dr. I. I. Makaveyeff.

Tuberculosis in the Russian Army. By Dr. N. K. Stchenotyeff.

A Case of Congenital Incontinence of Urine in a Girl aged Twelve; Operation; Recovery. By Dr. Ch. K. Mayer.

Miscellaneous.

Eclampsia.—Dr. J. Preston Miller (*Medical and Surgical Bulletin*, February) calls attention to the importance of the following points: 1. The early recognition of the primary symptoms of eclampsia—headache, high arterial tension, physical and mental lassitude, constipation, and impaired digestion. 2. The early adoption of measures having for their object the prevention of the formation of toxines and their elimination when formed. When the fit is on, the mischief is done, and we can only limit its consequences.

Entozoa in the Uterus.—Dr. Simons (*Centralblatt für Gynäkologie*, 1899, No. 36; *Gazzetta degli ospedali e delle cliniche*, February 13th) records the case of a woman with a laceration of the perinæum and catarrhal endometritis associated with an erosion of the cervix and retroflexion. On examination two points seemed noteworthy to the author: The patient presented a thick milky discharge of an aromatic odor, and the erosion of the cervix was of a particularly livid color. Exploration with the speculum showed at the edge of the erosion the presence of an *Oxyuris vermicularis*, while from the cervical cavity he was able to extract another parasite. Neither the vulva nor the vagina being inflamed, it is probable, he says, that the entozoa may be rapidly introduced into the cervix. The author suggests the existence of a parasitic endometritis and calls attention to the characteristic odor, which is *sui generis*, possessed by the discharge in such an affection.

The Glycerophosphates as Nerve Tonics.—Dr. Robert F. Williams (*Charlotte Medical Journal*, March), in an article entitled Have we a True Nerve Tonic? from a brief comparison of the action of the preparations considered on nerve structure reaches the following conclusions: 1. That for long-continued use in conditions of weakened nerve power, strychnine, arsenic, phosphorus, and the hypophosphites are unsuitable on account of the ultimate depressant effect which their continued use may occasion, which should be avoided. 2. That in the glycerophosphates we have preparations so nearly identical with the natural phosphorus compound of nerve substance as to be more readily appropriated by depressed nerve tissue than any other phosphorus preparations. 3. That this near identity of the glycerophosphates with lecithin and the absence of nerve stimulation produced by their administration render them true nerve tonics. 4. That the success met with by those of the profession who have used these preparations entitles them to trial by the profession generally.

Inflammation of the Appendix in Girls and Women.—Mr. J. Bland-Sutton, F. R. C. S. (*Clinical Journal*, March 14th), in reference to the former belief that inflammation of the appendix was almost peculiar to men, points out that accurate observations show that the ratio of its presence in women to that in men is as 1 to 3. He records twenty consecutive cases in which he removed the appendix from women in eighteen months. The intimate relations which the healthy as well as the diseased appendix has with the ovary and ovarian and parovarian cysts make it of special interest to the pelvic surgeon. It is a well-ascertained fact that the vermiform appendix not infrequently leans over the brim of the pelvis in the situation occupied by the right ovary. In such circumstances it would follow that a seriously inflamed appendix might become adherent to the ovary. On the other hand, an inflamed ovary or Falloppian tube might involve the vermiform appendix. The position of the appendix on the brim of the pelvis, moreover, occasionally brings it in contact with the pedicle left after an ovariotomy or oophorectomy. The part played by "bacterial masses" in causing concretions in the appendix as well as gallstones is referred to, and the author concludes: A careful study of appendicitis in women demonstrates that the clinical aspects of this disease are even more protean than in men. In those women vaguely classed as hysterical, neurotic, or neurasthenic, who complain of indefinite pain in the pelvis, often ascribed to ovarian trouble, the source of the misery is, in a fair proportion of instances, chronic appendicitis.

Letters to the Editor.

THE THEORY OF THE DETERMINATION OF SEX.

Tampa, Fla., *March 16, 1900.*

To the Editor of the New York Medical Journal:

Sir: In the *Journal* for February 24th there is an article on The Determination of Sex at Will, by J. Griffith Davis, M. D. Since it deals with a subject of some general interest the writer may be allowed to give it attention. No question is raised as to Dr. Davis's results, but her theory does not merit the same forbearance.

Her theory seems to be substantially as follows: The determination of sex depends on the law of vibrations, as she terms it; force, influence, energy might as well indicate this something, as yet indeterminable. This law of vibrations is accentuated, emphasized, in woman, at about the menstrual period, inducing what might be called female susceptibility, a tendency to produce female issue.

Dr. Davis appears to devote her attention entirely to the female vibrations. The masculine vibrations either are not included in the reckoning or are estimated as a constant quantity. There is no good ground for either position. First, the influence of the male is self-evident. Second, the male influence, were it a fixed quantity, must vary relatively, in comparison with that of different females, and *vice versa*, the results varying accordingly, if the law of vibrations holds good. Again, the male influence is by no means a fixed quantity. Every normal man is conscious of erotic exacerbations, with what regularity is uncertain. When we include these factors in our problem its complications become noticeable.

A word as to the solution of this problem, not to be attempted here. The theory of vibrations may not be altogether wrong. It is reasonable to suppose that the sexual vigor and exaltation of an individual at the time of coition may in some way determine the sex of the product of conception. But any theory which does not include both male and female is necessarily wrong, because neither acts alone. There are no facts at hand by which erotic exacerbations in the male may be anticipated. Nor are there any means by which it is practicable to estimate the relative sexual energy of any two individuals of opposite sexes at any given time. Therefore we must admit that the law of vibrations can be of no practical value in anticipating the sex of issue. For sufficient reasons, no attempt is made here to suggest anything which may be of practical value. I leave the question as I found it. U. S. Bird, M. D.

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27 West One Hundred and Fifteenth Street,
New York, *March 25, 1900.*

To the Editor of the New York Medical Journal:

Sir: It has been suggested that the days just preceding and just following the menstrual flow are days of abstinence from coitus with "the vast majority of people," and that this might account for the smaller number of girls born than we should expect if the theory *restated* by Dr. Davis were correct.

With regard to the days preceding, except in pathological conditions, and with the advice of a physician, I have my doubts. As to the days following, it is a very well known fact that it *was* the custom among the Jews to abstain during the seven days following menstruation (Leviticus, chap. xv, 19–29; and chap. xviii, 19). Even if this law was rigidly followed to-day, we must remember that we are dealing with a small part of the entire population, not with "the vast majority."

Be that as it may, it was not we but Dr. Davis who "invited the guests" on the days just before and after. That is a part of her observation. For does she not write: "Therefore, guests invited within forty-eight hours after the cessation of the menstrual period were invariably females, and decidedly so, little girls through and through, and I could show many photographs to prove this," and "I have observed another fact—namely, that a guest invited within three days of an expected period will prove to be a female?"

I do not say that the theory contains absolutely no truth, but that it can not be entirely correct as stated. I think Dr. Davis herself would be surprised to learn how old this theory really is. I have before me the German translation of a book originally published in book form at Mantua in 1563, and written by Isaac Abohab, who died about 1493. This man was a Castilian, who during the time of the persecution of the Jews in Spain fled to Portugal, and there became a favorite at the court of King John II. In this work authorities are quoted as far back as the time of Alexander the Great. I should like to translate two very short passages: "The days of separation were fixed at seven following the menstrual flow." "The wise men decided that the women should remain away from their husbands just before the appearance of menstruation." "Rawa decided that they should remain separated the last day or last night before the beginning of the period." "Chija teaches, in the name of Rabbi Jochanan, that the husbands who obey these laws may be certain that their *children will be males.*"

I have no desire to offend Dr. Davis, even if she is a fellow practitioner. An endeavor to improve the quality of the human race is certainly a praiseworthy one; but let us remember how difficult it is to regulate marriage and the bearing of children among a class in which such regulation would be even more important—viz., the epileptic, syphilitic, and tuberculous.

I think Dr. Davis stretches a point when she says: "Human nature is the same through all ages, and no doubt those Jewish women were as tactful as the women of to-day, and the seven days were lengthened into ten; so that pregnancy occurring then would produce males as theorized."

This statement is partly answered by Dr. Howard in the same number, but in addition I should like to cite a case in my own family. My grandfather on my mother's side is a Jew who obeys the Mosaic laws. According to this theory he should have had nearly all boys. As a matter of fact, he had six daughters and one son, stillborn. Of three of these daughters, one has six girls and one boy, the two others three girls each. I hope Dr. Davis will not say that these are the "exceptions which prove the rule."

I wonder how many couples, especially those recently married, would allow themselves to be ruled in this matter, according to the advice of Dr. Davis, by reason instead of by instinct. C. Herrman, M. D.

THE COUNTING OF A RAPID PULSE.

Canton, N. Y., *March 23, 1900.*

To the Editor of the New York Medical Journal:

Sir: In your *Journal* of March 3d Dr. J. C. Crist speaks of a patient with a pulse of 180 a minute. I should like to ask the doctor, through the *Journal*, how he manages to count a pulse of 180. Possibly he has some special instrument for registering pulse beats.

J. C. Willson, M. D.

Book Notices.

A System of Medicine. By Many Writers. Edited by Thomas Clifford Allbutt, M. A., M. D., LL. D., D. Sc., F. R. C. P., F. R. S., F. L. S., F. S. A., Regius Professor of Physic in the University of Cambridge, etc. Volume IX. New York: The Macmillan Company, 1900. Pp. xii-3 to 998. [Price, $5.]

The concluding volume of this *System* is devoted to a continuation of the discussion upon the diseases of the nervous system, to mental diseases, and to diseases of the skin. Like several other volumes of the work, it is not exactly what experience with other systems would lead us to expect, but rather a binding together of several text-books, each of which is exhaustive in itself. Indeed, were he so disposed, one might have the volume divided and bound as two volumes: the one a complete work upon mental diseases; the other, equally complete, upon dermatology. We feel, however, that by this time praise of the work is unnecessary. When the first volume appeared we praised it without stint, expressing the hope at the same time that the later volumes would be up to the standard of the first. This hope has been realized, for the work has shown the rare merit of evenness throughout. As volume after volume has appeared the medical world has become more and more appreciative of it until now all that we can say is of little account, for each reader has his own opinion of the work; at least it would seem so from our observation. The opinion oftenest expressed is in accord with our own, namely, that the work is by all odds the best presentation of the science and the art of medicine in the English language.

Introduction to the Outlines of the Principles of Differential Diagnosis, with Clinical Memoranda. By Frederick J. Smith, M. A., M. D. Oxon., F. R. C. P. Lond., Physician and Senior Pathologist to the London Hospital. New York: The Macmillan Company, 1899. Pp. ix-353. [Price, $2.]

According to the author of this work, the only thing that can excuse a new medical book is that something new is said in it or that it contains "a more rational and superior arrangement of what is old." The latter is the excuse for his *Principles of Differential Diagnosis,* and one that was scarcely needed, be it said, for the book is useful in no ordinary degree. It is not that the matter is novel or the arrangement unheard of, for the latter in great part is of the tabular variety, but it is the ingenuity of the tabulation, together with the graphic character of the arrangement, that makes the book unusual. Tabulation hardly expresses it, after all, for that is but a part of the scheme, and the author has hit upon the happiest sort of combination of text interspersed with tabulation that can be imagined. Few are possessed of that power to render a subject graphic to those who would learn it, but in this book the trait is made manifest to a remarkable degree. For this the book is much to be commended. We have found its study a very great help, and we are confident that others will be equally appreciative. We question the necessity of the word "differential" in the title, but that may be a mere matter of taste.

A Manual of Surgery. By Charles Stonham, F. R. C. S. Eng., Senior Surgeon to the Westminster Hospital, etc. In Three Volumes. Volume I.—General Surgery. Pp. xiii–343. Volume II.—Injuries. Pp. xv–383. Volume III.—Regional Surgery. Pp. xxi–725. New York: The Macmillan Company, 1900. [Price, each volume, $2.]

In these volumes Mr. Stonham has presented the medical profession with a most instructive and interesting manual of surgery. The author has purposely omitted all historical sketches, and has embodied in the present work only the results of his personal observations in modern surgical pathology, diagnosis, and treatment, gathered during an experience of sixteen years as a hospital surgeon and teacher. The efforts of the writer have been made additionally attractive by the happy division of the treatise into three volumes, thus overcoming the objections of the heavier and more cumbersome works under one cover. The print and cuts are perhaps below the average, yet we could hardly expect better when we consider the moderate price at which the set is offered.

We find but little to dissent from, but are happy in finding many sections deserving of notice, among which may be mentioned the chapter (vol. i) on ulcers, in which the author emphasizes the fact that the careful antiseptic treatment of ulcers is essential to the best results, and, furthermore, makes unfavorable comment on the use of ointments and salves, so lauded in many of the text-books of the day. In our opinion these greasy substances oftener do harm than good by forming culture media for the rapid development of invading bacteria. We could hardly better express our views than by repeating the words of the writer: "It is imperative that the surface be rendered aseptic, more especially in those ulcers dependent on specific organisms. The presence of putrefactive organisms not only prevents granulation, but, on account of the irritation produced, favors the spread of the ulcer. Dressings applied must be antiseptic, unirritating, and free from grease."

In vol. ii we find an able treatise on fractures and dislocations. In the treatment of fractures of the patella, the author strongly advocates Baker's procedure (subcutaneous suture) as against the open method. We have already placed ourselves on record in our reviews of contemporary works in favor of the latter method, and we fail to be drawn from our conclusion by the able arguments of the author. Regional surgery is considered in volume iii, and in it we are happy to note the high standard of excellence noted in the preceding ones.

The student will find the work most convenient and trustworthy, while the practitioner will find in it a treatise well worth adding to his surgical library.

Asthma: Recent Developments in its Treatment. By Ernest Kingscote, M. B., C. M., L. R. C. S. Edin., Fellow of the Medical Society of London, etc. With Colored Frontispiece and Illustrations. London: Henry J. Glaisher, 1899. Pp. xii–183.

Though the title of this work is restricted to one phenomenon, yet the text leading to the subject is replete in many most interesting descriptions and conditions allied to the disease. The author gives a very complete history and analysis of the theories held. The descriptions and representations of cardiac dilatations as such can not fail to interest the student from a clinical point of view, also the arguments leading up to the theory that it is one of the most frequent causes of asthma, if not the most frequent. In the chapter on percussion the pleximeter designed by the author is described. He professes that by means of this instrument a note can be elicited which will enable one to detect the boundaries of a viscus lying some distance from the surface. To use the author's words: "It consists of a felt cone made with a shoulder, to which a thick India-rubber ring is attached in such a manner that, when the instrument is firmly pressed against the chest, the apex of the cone touches a definite point on the skin in the centre of the ring, which ring cuts off the extraneous chest vibration, so that if the other end of the cone be now struck smartly with the hammer, having a flexible handle, the true note of the underlying structure is elicited." By this means the author thinks we have a great improvement and superior accuracy over our ordinary so-called deep percussion, and one much less annoying to the patient. From the examples and experience of the inventor, certainly his results in detecting the cardiac outlines are quite beyond the power by our usual methods. The anatomy of the living heart is most graphically described as it is seen *in situ*, and not as an anatomical organ on the post-mortem table.

The causes, symptoms, and treatment of the cardiac dilatations and all the allied conditions are clearly set forth in a most interesting manner. The same is true of the free discussion of all the previous treatments and analyses of asthma. The reason why the author lays such great stress on cardiac dilatation as being one of the most frequent causes of asthma is for the most part the fact of its mechanical action. To quote his own explanation: "Considering that one thirteenth of the body weight is blood, a largely dilated heart, say to the size of a small football (not at all an uncommon condition), is a very heavy tumor; it weighs about as much as half a bucket of water, and the heart 'flops' in the direction of gravity. In the supine position it can exert considerable pressure upon those structures which lie behind it." This brings the vagi forward as the cause for the reflex asthma.

He discusses the arguments *pro* and *con* for this theory, his own experience supporting it; but, as he says in his closing words, he leaves it to others to further sustain his ideas. Many cases are cited, with their histories and treatment, with an ultimate recovery or improvement on this basis.

The book undoubtedly is of much interest and is a step forward in stimulating research bearing on this phase of disease.

Bacteria, especially as they are Related to the Economy of Nature, to Industrial Processes, and to the Public Health. By George Newman, M. D., F. R. S. (Edin.), D. P. H. (Camb.), Demonstrator of Bacteriology in King's College, London, etc. Illustrated. New York: G. P. Putnam's Sons, 1889. Pp. xiv–348. [Price, $2.]

Under this somewhat comprehensive title the author attempts the rather difficult task of popularizing bacteriology. That such an attempt is justifiable, and that this branch of biology can no longer be considered merely an academic occupation for persons of leisure, is evident from the facts that bacteria occur abundantly in various media, that they flavor butter and cheese, that they purify sewage and soil, and that they are essential in the growth of many vegetables. With this extensive field before him the author has not limited himself to the hygienic aspects of bacteriology, although in every section the work necessarily bears upon this subject. The object is rather to place before the lay or scientific reader the essential part played by bacteria in animal and vegetable physiology and pathology, their wide application in the arts and sciences, and some of their more important relations to public health.

In this field we do not find that the present volume encroaches seriously upon the territory already covered by numerous other recent works on special departments of bacteriology. The sections on morphology, cultivation, and pathogenic action lack in technical character without losing greatly in scientific accuracy. The chapters on bacteria in air and water embody all the important established facts in this field. The pages devoted to bacteria in fermentation, in the soil, and in foods correlate a mass of information, both general and technical, which must otherwise be searched out laboriously from literature now principally confined to expert bacteriologists, professors of hygiene, sanitary engineers, and scientific dairymen and agriculturists.

The work may be highly recommended to the general reader or to the practising physician, who is looking for up-to-date information on recent applications of bacteriology. It is exactly the work to be recommended to schools of hygiene, if there were any in existence which properly fulfilled their mission. The matter in some portions of the volume ought to be taught in the public high schools along with arithmetic.

The book has been handsomely prepared, and abounds in good illustrations, many of which are excellent photomicrographs of bacteria. The author's style is polished and direct, and his statements are conservative.

Diseases of Women: A Treatise on the Principles and Practice of Gynæcology. For Students and Practitioners. By E. C. DUDLEY, A. M., M. D., Professor of Gynæcology, Northwestern University Medical School, etc., Chicago. Second Edition, revised and enlarged. With Four Hundred and Fifty-three Illustrations, of which Forty-seven are in Colors, and Eight Full-page Plates in Colors and Monochrome. Philadelphia and New York: Lea Brothers & Co., 1900. Pp. 15-17 to 717. [Price, $5.]

IT is not surprising that the work of a man so widely known and so thoroughly respected should quickly reach its second edition. In less than two years Dr. Dudley's book has achieved this distinction. In its present form it is even superior to the original book. Several additions and some changes have been made, although the book retains its original divisions into parts, which, if they do not follow each other quite so logically as they might, still make a very readable and a very instructive volume. The additions are mainly on the subject of menstruation and its anomalies, on diagnosis, and on cystitis.

The use of tents for purposes of dilatation is still advocated by the author, although he points out the danger of their employment in no uncertain language. Indeed, it is to be questioned if the profession is willing to forego the use of these valuable agents under strictly aseptic conditions. The chapter on metritis, usually so poorly discussed, still retains its vigor and is one of the best on the subject in the language. The diagnosis and treatment of the diseases of the bladder and the ureters are more fully considered than in the previous edition.

It is not quite clear why the author recommends hypodermoclysis or intravenous infusion during the performance of laparotomy for a ruptured tubal-gestation sac when the saline fluid may just as well be introduced into the peritoneal cavity with a certainty of absorption. Indeed, there may be some difference of opinion as to the advisability of abstention from surgical intervention in cases of such an accident when the patient rallies from the effects of a primary rupture. There are those who believe that such a patient is sitting on the edge of a volcano, and the spontaneous recovery of a few women does not militate against this view.

The new material on menstruation and its abnormities offers nothing especially striking, although it is all in accord with the best of teaching. This may be said of Dr. Dudley's book in its entirety. It represents the expression of a man who speaks from an abundance of experience and who records his impressions in no uncertain manner. What he intends to say is forcibly set forth and comes with the authority of one who knows. The book is admirably made, and the new illustrations help to make it attractive. They are, in some respects, an improvement over the earlier cuts.

A Text-book of Diseases of Women. By CHARLES B. PENROSE, M. D., Ph. D., Professor of Gynæcology in the University of Pennsylvania, etc. Illustrated. Third Edition, revised. Philadelphia: W. B. Saunders, 1900. Pp. 12 to 531. [Price, $3.75.]

THE third edition of Dr. Penrose's book on diseases of women has seen the light before the lapse of three years, a fact which argues in favor of the work's having been satisfactory in its purpose, that of a book for the medical student. There are certain chapters which are so clearly set forth, such as those on tubal pregnancy and the technics of gynæcological operations, that they might be read with profit by many others than the mere student. Certainly Dr. Penrose's book is a practical one and one which any student may study to his gain. Perhaps, in parts, there is a little too much technical description for the student, as in the consideration of perineal injuries, but this is a minor fault and can easily be overlooked in the face of the uniform excellence of the teaching. The illustrations are many and good, their clearness being their distinguishing mark.

Die Technik der speziellen Therapie. Ein Handbuch für die Praxis. Von Dr. F. GUMPRECHT, Professor in Jena. Mit 182 Abbildungen im Text. Zweite neu durchgesehene und vermehrte Auflage. Jena: Gustav Fischer, 1900. Pp. xii-354.

SINCE its first publication, less than two years ago, this book has occupied a unique place in medical literature. It describes in detail all procedures of a nonmedical nature which are carried out for curative purposes. It gives as well the dangers and the complications likely to arise from any of these measures. Among the things described are catheterism, the passing of urethral and œsophageal sounds, exploratory punctures in all parts of the body, including lumbar puncture, transfusion and infusion, and vaccination. In the present edition, the author has added the chapter on lumbar puncture with special reference to its therapeutic results. There is a consideration, too, of cocainization of the spinal canal and the method of achieving it. He has added a description of removal of the tonsils, and has included resection of the ribs and tracheotomy, and both subjects are illustrated with new cuts. The book gives such minute details for the execution of all these procedures that it forms a very valuable addition to the library of any physician who is not thoroughly familiar with the routine work involved in these diagnostic and therapeutic measures.

BOOKS, ETC., RECEIVED.

The International Text-book of Surgery. By American and British Authors. Edited by J. Collins Warren, M. D., LL. D., Professor of Surgery in Harvard Medical School, etc., and A. Pearce Gould, M. S., F. R. C. S., Lecturer on Practical Surgery and Teacher of Operative Surgery, Middlesex Hospital Medical School, etc. Volume II. Regional Surgery. With Four Hundred and Seventy-one Illustrations in the Text and Eight Full-page Plates in Colors. Philadelphia: W. B. Saunders, 1900. Pp. 9 to 1072. [Price, $5.]

Diseases of the Nose and Throat. By J. Price-Brown, M. B., L. R. C. P. E., Member of the College of Physicians and Surgeons of Ontario, etc. Illustrated with One Hundred and Fifty-nine Engravings, including Six Full-page Color Plates and Nine Color Cuts in the Text, many of them Original. Philadelphia, New York, and Chicago: The F. A. Davis Company, 1900. Pp. xx–3 to 471. [Price, $3.50.]

Home Nursing. Modern Scientific Methods for the Care of the Sick. By Eveleen Harrison. New York and London: The Macmillan Company, 1900. Pp. xi–235.

A Rip Van Winkle in the Practice of Medicine. The Efficacy of Venesection, Cold Water, Starvation, and some Other of the Older Means of Cure in Certain Diseases. By H. J. Parker, M. D. Clayton, Illinois. Pp. 132.

The Soul of Man. An Investigation of the Facts of Physiological and Experimental Psychology. By Dr. Paul Carus. With One Hundred and Eighty-two Illustrations and Diagrams. Second Edition. Chicago: The Open Court Publishing Company, 1900. Pp. xviii–482.

Cancer et tuberculose. Hybridités tuberculo-cancéreuses. Par le Dr. Henri Claude, Ancien interne des hôpitaux de Paris. Avec 3 figures dans le texte. Paris: J.-B. Baillière et fils, 1900. Pp. 5 to 93.

Professional Education in the United States. College Department, including Universities and Professional and Technical Schools. Prepared by Henry L. Taylor, Ph. D., under Direction of James Russell Parsons, Jr., M. A. Bulletin 8, January, 1900. Medicine.

Report relating to the Registration of Births, Marriages, and Deaths in the Province of Ontario, for the Year ending December 31, 1898.

Diabetes and its Constitutional Treatment. By Elmore S. Pettyjohn, M. D., of Alma, Michigan. [Reprinted from the *Medical Herald.*]

Sleeplessness: its Cause and Treatment. By Elmore S. Pettyjohn, M. D. [Reprinted from the *Physician and Surgeon.*]

On the Difficulty of Differentiating between Femoral Aneurysm and Osteosarcoma. By Carl Beck, M. D. [Reprinted from *International Clinics.*]

Aseptic Catheterism. By Carl Beck, M. D. [Reprinted from the *Medical News.*]

Pneumothorax from Gas-producing Bacteria. By F. G. Finley, M. D., of Montreal. [Reprinted from the *Montreal Medical Journal.*]

A Rare Form of Pyosalpinx complicating Uterine Myoma. By William Gardner, M. D., and Maude E. Abbott, M. D., of Montreal. [Reprinted from the *Montreal Medical Journal.*]

A Case of Hæmatometra. By William Gardner, M. D. [Reprinted from the *Montreal Medical Journal.*]

Electrical Burns. By J. M. Elder, M. D., of Montreal. [Reprinted from the *Montreal Medical Journal.*]

Evidences that Bovine Tuberculosis is Communicable to Man by Direct Contact, or by Food Infection. By John A. Robison, M. D., of Chicago. [Reprinted from the *Journal of the American Medical Association.*]

The Tenement and Tuberculosis. An Address by S. A. Knopf, M. D., delivered before a Conference held under the Auspices of the Tenement-house Committee of the Charity Organization Society, New York, February 20, 1900.

Miscellany.

The Diagnosis and Management of Cystitis in Women was the subject of a paper read by Dr. Abram Brothers at a meeting of the New York Obstetrical Society held on March 13th. The author referred to the symptomatology of the disease in its acute and chronic forms, and emphasized the fact that with the modern means of exact diagnosis of vesical conditions obscure lesions were no longer a mystery. "Irritable bladder" was now a myth. The author had been working chiefly with the Nitze cystoscope, and believed it to have advantages over the Kelly instrument in that the bladder was directly illuminated and a larger area could be seen in each field. The position of the patient, too, was easy, and no preliminary dilatation or anæsthesia was necessary. Further, the interior of the bladder was distended by a fixed quantity of an antiseptic, transparent medium (boric-acid solution). The author then related the various visible changes in the bladder in disease, and said he accepted Casper's classification: 1. Change in color and lustre. 2. Increased capillary circulation. 3. Swelling. 4. Changed secretion. Inspection of the bladder was positively contraindicated in acute inflammations, but was allowable in all forms of subacute and chronic inflammations. Dr. Brothers narrated in detail the treatment of the various forms of vesical inflammation, insisting upon as early an examination of the bladder cavity as was permissible for the establishment of an exact diagnosis. He then showed the Nitze instrument, comparing it as he exhibited it with the instruments devised by Kelly. He alleged simplicity and greater ease of manipulation for the Nitze cystoscope.

Dr. Alexander J. C. Skene agreed with the reader of the paper that instrumental investigation was seldom necessary to make a diagnosis of cystitis. He referred to the necessity of the general practitioner's treating cases of cystitis intelligently. A slight displacement of the bladder could cause frequent urination and pain in the erect posture, while a complete prolapsus would not. The degree of cystitis could be determined by the condition of the urine clearly and definitely. But in some forms of ulceration, secondary pericystitis, and neoplasms a cystoscopic examination was necessary, because the urine did not always show in these cases characteristic changes. The speaker referred to the possibility of doing great injury to the bladder by instrumental examination during an acute cystitis. He spoke of the fact that the Kelly endoscope of to-day was only a modification of the rubber one devised by Dr. Robert Newman many years ago. He said that for examination of the ureters the endoscope was no better than the cystoscope, and was more difficult to introduce. Dr. Skene had found that a cystoscope with a slight curve was easy to insert and could be used for ureteral work with as great facility as the Kelly endoscope. The fountain syringe was to be preferred to the piston syringe, which the reader of the paper had advocated; the introduction of air into the bladder was always to be avoided, if possible.

Dr. Hiram N. Vineberg compared the Kelly and the Nitze instruments. He said that the Kelly endoscope had the advantage of ready sterilization and allowed of direct examination. It permitted of therapeutic applications under the eye and the removal of small foreign bodies, the snipping off of little growths, and the curetting or cauterization of the vesical mucosa. By the use of a Kelly instrument the character of the fluid issuing from the ureteral orifice could be easily seen, which was impossible with the Casper or Nitze instrument. By the employment of Kelly's endoscope urine might be collected from either ureter, thus obviating the necessity of ureteral catheterism. Dr. Vineberg said that in chronic cystitis the use of scale pepsin in solution was beneficial. It was especially soothing to the inflamed mucous membrane.

Dr. Skene said that he feared the traumatism caused within the bladder much more than he did the introduction of bacteria. If the mucous membrane was intact, bacteria would be taken care of. For topical applications the endoscope was to be preferred, but not for the removal of growths. In this procedure the base would continue to bleed; if not, it would continue to break down under the influence of the urine, and in time a calculus would form. The speaker doubted the necessity of catheterizing the ureters unless there was disease of the pelvis of the kidney or of the ureter which needed attention. By the use of Harris's instrument the urine from each kidney could be obtained separately.

Dr. Joseph Brettauer agreed with Dr. Skene as to the wisdom of not catheterizing the ureters. He found it necessary in few cases. He narrated a case of tuberculous kidney in which the kidney had also been infected by an attempt to catheterize the ureter. Although the instruments were clean and everything was done in an aseptic manner, the patient showed the new infection within twenty-four hours. The speaker indorsed the use of the Harris separator as fulfilling every purpose.

Dr. Brothers thought that with care gradual dilatation of the bladder by the piston syringe was no more harmful than by the fountain syringe, and one knew the exact amount of fluid introduced.

Curious Hysterical Disturbances of Vision.—At a meeting of the New York Neurological Society held on March 6th Dr. Phillip Meirowitz reported a case which had occurred in a woman of twenty-five, of neurotic temperament and inheritance. In the spring of 1895 she had begun to suffer from hysterical attacks. Subsequently she had been affected with laughing and crying spells, and these had become more frequent and severe. When she was seen, in March, 1898, the seizures were not so severe, and consisted chiefly of crying, brought on by mental strain. Frequently when she was gazing into the air or looking at the pavement, colored concentric rings would be seen. In darkened corners she would see certain peculiar figures of various colors and shapes. On rising from a couch she frequently saw a succession of blue commas surrounded by green spots. These would disappear on her looking out of the window, but people passing in the street would be surrounded by colored borders. Often the images were duplicated, and showed the complementary color. At times her memory became distressingly bad, and the spelling of words became difficult. Her condition had been ameliorated by hypnotism. When she was first seen, in June, 1896, hysterical stigmata had been sought for, but not discovered. Examination of the eyes showed hysterical astigmatism.

A Military Medical Prize Award.—The prize of one hundred dollars, or a medal of that value, offered by Dr. Louis L. Seaman, late major and surgeon, First United States Volunteer Engineers, through the Military Service Institution, was, according to the *New York Times* for March 28th, awarded on March 27th to Captain E. L. Munson, assistant surgeon, United States Army. The board of award consisted of Colonel John F. Weston, acting commissary general, United States Army; Lieutenant-Colonel Charles Smart, deputy surgeon-general, United States Army, and Lieutenant-Colonel William E. Dougherty, Seventh United States Infantry.

The American Hospital Ship Maine in South Africa.—The *New York Times* for March 27th says that Major Julian M. Cabell, former chief surgeon of the American hospital ship *Maine*, is now in London on his way back to Columbia Hospital, Washington, his leave of absence having expired. He says:

"Nothing could have exceeded the hospitality and warmth with which the American doctors, nurses, and attendants were received in South Africa. The stories of internal dissensions on the *Maine* are quite unbased. Lady Randolph Churchill antagonized no one. On the contrary, it was owing to her tact that several little threatened annoyances were avoided. She wished the *Maine* to stay at the seat of warfare, and I agreed with her, but it had been arranged by the British army authorities that she was to leave after the relief of Ladysmith, and, though Lady Randolph believed this action would diminish the ship's sphere of usefulness, she was too good a disciplinarian and diplomat to question the decision of the commander in chief.

"Another reason prompting the sending of the *Maine* home is that the troopships returning are not well equipped to take wounded soldiers. The British government is much behind our own in this respect, for, while the hospital ships at Manila and in Cuba were able to transfer the wounded to transports and remain on the scene of action, those in South-African waters must needs return themselves with their human cargoes.

"We were very fortunate on the *Maine* with cases. Only one man died before I left, and I believe this number has not been increased since. Perhaps our most remarkable case was that of an officer of the Gordon Highlanders, who was shot clean through the brain and who completely recovered on board the American hospital ship.

"Mauser wounds in the intestines which, from the

Springfield or Remington, would surely have been fatal, healed up without operation. I had seen some similar cases in the Philippine Islands and avoided operations upon such wounds with complete success, the Mauser wound being so clean and small that it heals better when left alone.

"I saw no traces of explosive bullets, and I believe that the reports that the Boers are using such bullets are greatly exaggerated. From my experiences in Manila and South Africa, I believe it is almost impossible to distinguish between the explosive bullet and that of the ordinary Mauser when the latter is fired at point-blank range.

"Perhaps I should not say it, but the *Maine* was undoubtedly the best-fitted hospital ship down there. Everything that it was possible to provide to make the wounded comfortable had been provided. The British army and navy men were loud in their praises of the ship, and Lord Roberts spoke most highly of her. But perhaps bluff Captain Chichester, Sir Edward Chichester, formerly captain of the cruiser *Immortalité*, the British flagship at Manila during the troublesome times there, in good-humoredly addressing the nurses and saying he found out a few things about Americans at Manila, impressed us the most. I much regretted leaving the ship, but my leave is up, and I had to come home."

The *Maine*, says the *Times*, will return to South Africa immediately after landing her wounded in England.

The Bubonic Plague.—According to the *New York Times* for March 27th, a telegram from Sydney, New South Wales, dated March 26th, states that the number of bubonic-plague cases officially reported has reached thirty-six. There have been thirteen deaths from the disease. Eight thousand persons have been inoculated. The *New York Times* for April 2d states that eleven fresh cases were officially reported in Sydney on April 1st, and two additional deaths had been recorded. In Honolulu, however, from the same source we learn that on March 24th the board of health had practically decided that the plague had run its course. No cases had developed for over a week. The members of the board felt that quarantine restrictions regarding the shipments of merchandise from Honolulu, except merchandise from Asiatic ports, would be rescinded.

The Increase of Cancer in England and Wales.—According to the *Evening Post* for March 26th, the figures given by the registrar-general's report for England and Wales during thirty-one years show that there has been an increase from 38.5 in 100,000 living population dying from cancer in 1864 to 75.5 in 100,000 living in 1895—in other words, the ratio of the mortality from cancer has almost exactly doubled in England and Wales during the thirty-one years preceding 1895.

Antityphoid Inoculation.—Professor Wright's typhoid vaccine, which is being so largely used in the British army with apparently great success, consists, according to the *Polyclinic* for March, of an attenuated culture of the bacilli in peptone broth which has been incubated for from two to four weeks, by which time further development of the bacilli has usually ceased. The culture is then sterilized by prolonged exposure to heat, and standardized either by testing upon guinea-pigs or by the estimation of the degree of its opacity, which usually corresponds pretty closely to the number of dead bacilli contained in the solution. The dose commonly used is the minimum lethal dose for a hundred grammes of guinea-pig, and ranges from 0.5 to 1.5 cubic centimetre.

Bullet-proof Shields.—A medical correspondent of the *Polyclinic* for March says that "a city councilor of Bradford (England), in a speech a short time ago, stated that it was within his own personal knowledge that several thousands of bullet-proof shields were now being made at Sheffield for the British infantry in the Transvaal. The shields were said to be seven pounds in weight, but no details were given as to size, structure, or materials of composition. The weight seems excessive," says the writer, "but these shields must be not only impenetrable and large enough to cover the cardiac area, but also of sufficient size to diffuse the shock of impact over a wide surface. To have a plate the size of the extended palm and fingers driven against the præcordium, with the awful impulse of a Mauser bullet stopped in midcareer, might possibly produce fatal concussion of the heart or crush in the chest wall. A Mauser or Krag-Jorgensen bullet is said to have penetration impetus enough to pierce completely through a tree trunk a foot in diameter, and the mere impact of this fearful momentum upon the chest, unless widely diffused, might be most serious."

On the whole, we are inclined to think that we would rather take our chances and go into the field "unshielded."

Sea Birds a Sanitary Necessity.—The American Ornithologists' Union has issued the following appeal:

"This country is on the verge of losing forever one of the main features of its seacoast charms—the sea birds themselves. In fact, the terns, the most exquisite of the gull family, and which formerly thronged our whole coast, have been so nearly wiped out by agents of the milliners that this year's onslaught, already fully organized, will glean almost the last pair from the few small breeding colonies which remain, wherever these are unprotected. And the larger gulls, which are not only very beautiful but absolutely essential as harbor scavengers, are also being decimated for the same purpose. All these species, with their exquisite beauty, their wild voices, and their most romantic lives, peopling a realm which, without them, would be oppressive in its dreary grandeur, will reach their breeding places in a few weeks, and the terns, especially, are liable to be slaughtered the moment they get there; therefore the promptest action is necessary, if we are to save even the few pairs of the latter which could restock our devastated coast when the evil eye of fashion shall have turned to other victims.

"Simple economic considerations make it a matter of course that the gulls *must* be saved. An immense horde of them, which naturalists think number anywhere from a hundred thousand to a million, gorge twice a day in New York bay upon garbage. As the hour of the 'dump' approaches, their multitudes fill the whole air to an immense height, over an area of several miles, then gradually settle on the sea in vast white sheets. The whistle of the police boat, the signal to 'dump,' seems to waft them simultaneously into the air, to gather, like dense snow clouds, over the floating masses just emptied from the many scows. Imagine from what an amount of putrid matter these birds, as big as hens, save the adjacent beaches, not to speak of their perpetual gleaning in the actual harbors! And this is a specimen of what occurs at every port. And shall this incalculable sanitary benefit, and all this beauty, terminate forever, and for no worthy purpose? If money enough can be raised, the committee of the American Ornithologists' Union will guard every breeding place where there is a law to back them, as Mr. Mackay and Mr. Dutcher have done at Vineyard Sound Islands and Great Gull Island. The utmost caution will be used in choosing wardens, and the committee will be glad to receive names of men especially suited for the post. Lighthouse-keepers and life-saving station captains will be employed wherever feasible. A very encouraging sum is already in the hands of the committee. The places to be protected are certain islands on the coast of Maine, Long Island, New Jersey, Maryland, and perhaps Virginia and Florida. In Maine alone there is need of all the money we can possibly get, since there single wardens are afraid to face the rough plumers, and some more elaborate organization is the only hope.

"The American Ornithologists' Union therefore appeals to every bird lover for money to be used in hiring wardens to protect the birds while nesting. Contributions should be sent to Mr. William Dutcher, treasurer of the union, at 525 Manhattan Avenue, New York city, who will furnish all desired information."

The Middleton Goldsmith Lecture of the New York Pathological Society will be delivered at the New York Academy of Medicine on Friday evening, April 13th, at 8.30 o'clock by Professor Simon Flexner, of the University of Pennsylvania, on The Pathology and Ætiology of Dysentery.

The New York Academy of Medicine.—At a stated meeting on Thursday evening, the 5th inst., the following papers were read: The Treatment of Scarlatinal Nephritis, by Dr. Robert Coleman Kemp, and The Prevention, Management, and Early Diagnosis of Scarlet Fever, by Dr. Floyd M. Crandall. In the discussion which followed, Dr. H. D. Chapin, Dr. Henry Koplik, Dr. Walter L. Carr, Dr. C. G. Kerley, and others took part.

At the next meeting of the Section in Surgery, on Monday evening, the 9th inst., the following papers will be presented for discussion: The Relative Bearing of the Conjoined Tendon and the Internal Oblique Muscle upon the Radical Cure of Inguinal Hernia, by Dr. Joseph A. Blake; A Preliminary Report and Demonstration of a New Method of Sterilizing Catgut, by Dr. C. A. Elsberg, and The Differential Diagnosis in Diseases of the Biliary Passages, by Dr. George E. Brewer. Dr. Willy Meyer will present a patient with persistent suprapubic fistula, following lithotomy, cured by Bottini's operation, and Dr. Joseph A. Blake will present a case of sphenoidal sinus in which there has been no recurrence for three years and eight months.

At the next meeting of the Section in Pædiatrics, on Thursday evening, the 12th inst., Dr. William P. Northrup will read a paper on Lumbar Puncture, and Dr. Lewis A. Conner will read one on The Technics of Lumbar Puncture, which will be discussed by Dr. George W. Jacoby, Dr. Augustus Caillé, and others. Patients will be presented, and specimens and new instruments will be exhibited.

The Medical Association of Missouri.—The forty-third annual meeting will be held in Mexico, on May 15th, 16th, and 17th. The following papers have thus far been promised: Dr. J. K. Bauduy, St. Louis, A Case of Secondary Carcinomatous Spondylitis; Dr. Carl Barck, St. Louis, Intraocular Tumors; Dr. J. C. Crist, Lexington, Acute Inversion of the Uterus; Dr. C. R. Day, Mayview, Quackery *vs.* Medical Ethics; Dr. C. A. Dannaker, Kansas City, Are Obstetrical Emergencies Fully Anticipated? Dr. A. H. Ohmann-Dumesnil, St. Louis, Two Cases of Chancre of the Groin; Dr. P. S. Fulkerson, Lexington, Diphtheria; Dr. William Frick, Kansas City, Some Observations on Secondary Syphilis; Dr. Pinckney French, St. Louis, Modern Pathology and Treatment of Appendicitis; Dr. R. S. Kelso, Joplin, Small-pox, its Prevention and Treatment; Dr. O. P. Kernodle, Sedalia, Recent Improvements and Discoveries in the Science of Alimentation; Dr. H. W. Loeb, St. Louis, Limitations of the Laryngologist in the General Treatment of Nose and Throat Diseases; Dr. F. J. Lutz, St. Louis, Report on Abdominal Surgery; Dr. John Punton, Kansas City, Hysteria and its Protean Manifestations; Dr. E. E. Parrish, Memphis Hystero-epilepsy; Dr. E. L. Priest, Nevada, State Medicine; Dr. J. L. Short, Kansas City, Entropium and its Rational Treatment; Dr. E. Van Note, Kansas City, The State's Greatest Crime; Dr. C. H. Wallace, St. Joseph, The Treatment of Hernia by the Marcy-Bassini Operation.

A number of papers on gallstones will be a feature of the meeting, and will include the following: The Physiology of the Bile, Dr. C. Shattinger, St. Louis; The Pathology of Gallstones, Dr. H. Summa, St. Louis; The Ætiology and Diagnosis, Dr. W. G. Moore, St. Louis; The Medical Treatment, Dr. C. F. Wainwright, Kansas City; The Surgical Treatment, Dr. A. V. L. Brokaw, St. Louis.

The Louisiana State Medical Society will meet on April 19th, 20th, and 21st. The preliminary programme gives the following titles of subjects for general discussion: Tuberculosis; Local and Regional Anæsthesia in its Application to Minor and Major Surgery; Measles and Small-pox in Children; The Surgical Aspect of Salpingitis; Electricity in Gynæcology; The Prevention of Blindness from Ophthalmia Neonatorum, Sympathetic Ophthalmia, Corneal Ulcers, Acute Iritis, and Glaucoma; On the Management of Foreign Bodies in the Air-passages; The Pullen Case from a Toxicological Standpoint; The Commoner Affections of the Feet and Hands and their Treatment; Restoration of Symmetry of the Face by Mechanical Means after Disfigurement resulting from Disease, Accident, or Operation; Variola; The Present Status of Blood Examination in Bacteriological Laboratories for the Determining of Malaria and Typhoid Fever; Vivisection a Necessity for Medical Progress; and Stricture of the Urethra. The following papers are announced: An Improved Method of Vaccination, and On the Successful Treatment of Variola, by Dr. V. Lehmann; Complete Transposition of Viscera, Report of a Case, by Dr. S. P. Delaup; Report of a Case of Recurrent Dermatitis Exfoliativa, by Dr. A. R. Robertson; Suprapubic Cystotomy for the Purpose of Retrograde Catheterism in a Case of Complete Laceration of the Male Urethra, by Dr. C. J. Ducoté; The Physiological Treatment of Typhoid Fever, by Dr. T. S. Dabney; and A Case of Gunshot Wound of the Abdomen with Three Perforations of the Colon and a Wound of the Stomach, Laparotomy, Recovery, and Typhoid Fever in Childhood, by Dr. E. D. Fenner.

Original Communications.

PRIMARY DIFFUSE SMALL-CELLED SARCOMA OF THE PARIETAL PERICARDIUM.[*]

By J. C. WILLIAMS, M. D.,
INSTRUCTOR IN PATHOLOGY IN RUSH MEDICAL COLLEGE, CHICAGO.

WITH CLINICAL REPORT.

By A. L. MILLER, M. D.,
DIXON, ILL.

Malignant growths of the pericardium are very rare. A study of the available literature upon this subject simply emphasizes this fact.

Bauer,[†] in his article on the pericardium, says: "Carcinoma very rarely occurs in the pericardial sac, and when it does, it is as an extension of the disease from neighboring parts, particularly from the mediastinum, sternum, or œsophagus, on to the pericardium. Much more rarely do we find nodules on the pericardium secondary to acute miliary carcinoma in other serous membranes.

"Kohler found cancer of the pericardium six times in 9,118 autopsies; Gunsberg, once in 1,700; and Willigk, in 477 autopsies on patients dying of cancer, found the pericardium affected seven times.

"When the new growth extends to the pericardium from neighboring parts, the parietal layer shows, as a rule, a diffuse infiltration of cancer, or else the mass grows from a single limited spot and projects in nodules into the sac. Associated with it there is almost always a fluid effusion into the cavity. The fluid is frequently hæmorrhagic in character, sometimes purulent and ichorous, and again in other cases it has more the appearance of serum, etc."

In the foregoing extract carcinoma only is spoken of, but, as sarcoma is not mentioned at all in connection with the pericardium, it may be inferred that all malignant growths of this structure are included under the one term carcinoma.

Whittaker[‡] sums up the whole subject of malignant growths of the pericardium under the one heading "cancer," and says: "The pericardium is an infrequent site of malignant disease. Such deposits are usually metastatic. Primary deposits imply affection of the lymph glands of the pericardium, etc."

In the available literature upon the subject the writer has found recorded the following cases: Haldane[#] in 1854 reported a case of "cancer of the pericardium" in which small "cancerous" deposits were found upon the surface of the left ventricle near the base of the heart, together with some involvement of the parietal layer of the pericardium. Nodules were also found in the liver, lungs, spleen, and kidneys.

Kaulich[*] in 1862 reported a case of "carcinoma of the pericardium with the symptoms of pericardial exudate" in which both layers of the pericardium were involved.

Church[†] in 1868 reported a case of "carcinoma of the pericardium, anterior mediastinum, and the lymphatic glands of the thorax and abdomen" in which the parietal layer of the pericardium was enormously thickened and some scattered nodules of tumor growth were found on the visceral layer.

Nichols[‡] in 1869 reported a case of "malignant disease of the pericardium simulating aortic aneurysm" in which the parietal layer of the pericardium was very greatly thickened, being about three inches in thickness over the base of the heart and varying from that to a very slight thickening over the diaphragm. The visceral layer was not involved. No microscopic examination was allowed.

Clay[#] in 1869 reported a case of "fibro-nucleated or cancroid growth in the pericardium," in which the parietal layer of the pericardium was very greatly thickened, being about two inches thick over the base of the heart and varying from that to about an eighth of an inch over the diaphragm. The visceral layer was not involved.

Broadbent[||] in 1882 reported a case of "malignant disease (sarcoma) of the pericardium" in which the parietal layer of the pericardium was very much thickened, being about an inch and a half in thickness over the base of the heart and varying from that to about a third of an inch over the diaphragm. The visceral layer of the pericardium was normal.

Guarnieri[△] in 1886 reported a case of "primary endothelial cancer of the pericardium" (*Un caso di cancro endoteliale primitivo del pericardio*) in which the visceral layer of the pericardium was involved, being almost entirely covered with small grayish-white nodules varying in size from that of a grain of millet to half a pea.

The structure in this case was alveolar, the walls of the alveoli being made up of rather delicate connective tissue, the alveoli being filled with rather large rounded or oval cells containing large vesicular nuclei.

Hektoen[◊] reported a probable case of "primary round-celled sarcoma of the epicardium," in which the neoplasm was found upon the anterior surface of the heart near the base and was made up of a mass of small round cells and a fibrous stroma. Whittaker, in his article referred to above, mentions a case of primary endothelioma in the lymphatics of the pericardium reported by Marchiafava, a case of sarcoma of the pericardium and bronchial glands reported by Liborius, and two cases of primary cancer of the pericardium cited by Bernheim, as being reported by Foerster and Le Bœuf. References to these cases are not given in the *Index-Catalogue of the Library of the Surgeon-General's Office* at Washington, excepting the one by Le Bœuf, which was reported in 1868; the writer has been unable to consult the original articles in which these cases are described.

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[*] Read before the Chicago Pathological Society, February 13, 1899.

[†] Von Ziemssen's *Cyclopædia*, 1881, vol. vi, p. 626.

[‡] *Twentieth Century Practice of Medicine*, 1895, vol. iv, p. 8.

[#] *Monthly Journal of the Medical Society*, London and Edinburgh, 1854, vol. xix, p. 77.

[*] *Vierteljahrsschrift für die praktische Heilkunde*, Prague, 1862, vol. lxxiii, p. 78.

[†] *Transactions of the Pathological Society of London*, vol. xx, 1868–'69, pp. 102–104.

[‡] *St. George's Hospital Reports*, London, 1869, vol. iv, p. 221.

[#] *Edinburgh Medical Journal*, 1869–'70, vol. xv, pp. 802–804.

[||] *Transactions of the Pathological Society of London*, 1881–'82, vol. xxxiii, pp. 78–81.

[△] *Arch. per le sci. med.*, Torino, 1886–'87, vol. x.

[◊] *Medical News*, November 18, 1893.

The case I would add to this list is one which occurred in the private practice of Dr. A. L. Miller, of Dixon, Illinois, who had charge of the case clinically, furnished the clinical history, made the post-mortem examination, preserved the very rare and interesting specimen in formalin solution, obtained some photographs of the neoplasm, and very kindly sent them all to Professor Hektoen, of Rush Medical College.

The writer is personally indebted to Professor Hektoen for the privilege of studying the specimen. The clinical and post-mortem reports, as supplied by Dr. Miller, are as follows:

The patient, Eddie B., a boy, about thirteen years of age, was brought to my office December 29, 1896. Family history as follows: Parents living and well. Of the two children born to them, the other, a girl, died at the age of two years and six months after a two days' illness. The maternal grandmother died at the age of forty-two years of dyspepsia (?) after an illness of four years' duration. The maternal grandfather died at the age of seventy years of carcinoma of the stomach, revealed by post-mortem. The paternal grandfather died at the age of seventy-five years of carcinoma of the stomach, revealed by post-mortem. One aunt died of carcinoma of the breast.

Personal History.—The boy never had had any illness except in October, 1895, when the writer attended him through an attack of amygdalitis. He was of spare build. His weight was sixty-four pounds. He had always been a nervous child. In May, 1896, he began to complain of being tired and hungry. In September, 1896, his parents first noticed that he had choking spells in his sleep, at which times his limbs would jerk and twitch.

He was first seen at my office on December 29, 1896. He was very pale and emaciated. There was dullness on percussion over all of the left lung, except a small area posteriorly. Auscultation gave a clear respiratory murmur over a space about two inches in diameter and absence of respiratory sounds elsewhere. The right lung was normal. He had a short, harsh, unproductive cough. Respiration was 30; pulse 120, very weak, and rhythm irregular. No cardiac murmurs. The apex beat was seen one inch to the left of the ensiform cartilage. The force of the beat was much increased; the impulse could be plainly seen at a distance of twenty feet. At this time the temperature was normal.

About two weeks after the first examination he was taken with pain in the left chest, which was followed by an effusion into the pleural cavity, the intercostal spaces bulging. The temperature was 102° F. at this time. The intercostal bulging disappeared in about five days, but the bulging of the entire chest wall was progressive from this time on. For several days a loud splashing noise could be heard at a distance of three or four feet. It seemed to be synchronous with the heart beat. There was considerable pain at times, which was attributed to pleuritic adhesions. Pain was absent during the last five weeks of life, and during the same time the apex impulse could not be detected. From the first there was a marked depression just below the ribs, in the nipple line, and extending backward. This depression gradually filled in and became bulging during the last few weeks, at which time the hard tumor could be readily felt by pressing the fingers up under the ribs.

The appetite was good to the last, but deglutition was very difficult. Hot food gave much distress. All food was taken cold. Dyspnœa was marked and progressive. The last few weeks he could breathe only in one position—that is, leaning forward at an angle of about forty-five degrees and to the left, with his head resting on a low table. General dropsy developed during the last few weeks. His cheeks, owing to his position, hung down like great water sacs.

He died April 2, 1897, having been under observation three months. Dr. J. B. Snyder, of Polo, Illinois, saw him in consultation and was present at the post-mortem examination.

Post-mortem findings: The left chest bulged forward an inch and a half more than the right. Examination showed a large tumor developed uniformly over the pericardium and adherent to the chest walls anteriorly and to the diaphragm below.

The left lung was solidly compressed and there was almost no room left for expansion of the right lung, the tumor filling up nearly the whole of the chest cavity.

No glandular enlargements were found.

The weight of the tumor with the lungs attached was six pounds and a quarter. On incising the growth the heart was found free in the pericardium. Fig. 1 gives a front view of the growth. Fig. 2 gives the same view after a median vertical incision was made and the sides drawn outward, showing the heart free within the pericardial cavity. Fig. 3 shows the upper surface and

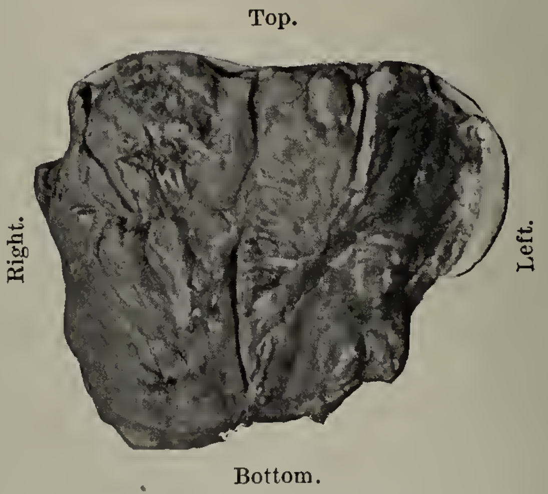

FIG. 1.—Anterior view of growth after removal from the chest, showing line of incision made into it from above downward in median line in front.

the upper portion of the posterior surface of the growth. Fig. 4 shows the diaphragmatic surface and the lower portion of the posterior surface of the growth.

The macroscopic appearance of the growth: The neoplasm is a large, irregularly rounded, lobulated mass of tissue, of a yellowish-white color and of a fairly hard consistence, but it tears apart very easily. The anterior surface is rather flat and has the appearance of having been firmly attached to the under surface of the sternum and costal cartilages. The lower surface is firmly attached to and involves the diaphragm. The sides show a distinctly lobulated appearance—the right side especially showing several large lobes separated by deep fissures, the free surface of the lobes being quite smooth.

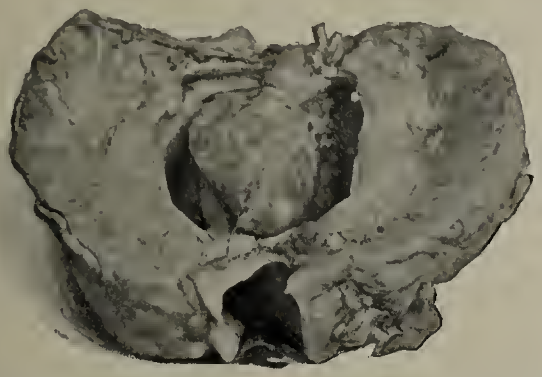
Fig. 2.—Anterior view after making median incision and spreading thickened pericardial walls apart to show the heart free in the cavity.

The upper surface is rather irregular in outline, and shows in front the remains of adhesions and the cut ends of the innominate artery, the left common carotid, and the left subclavian arteries, the innominate veins, and just back of these is the cut end of the œsophagus, on either side of which are smooth tumor areas; still farther out and posteriorly are seen the apices of both lungs, which are separated from the neoplasm at this point, but show some white areas in their substance

The posterior surface may, for convenience of description, be divided into three zones—a left, a middle, and a right. The left zone shows above and to the outer indicating the invasion of the lung tissue by the growth. side the posterior surface of the upper lobe of the left lung, the upper two thirds of which look normal, with the exception of small whitish areas scattered here and there; the lower third is changed to a firm whitish mass.

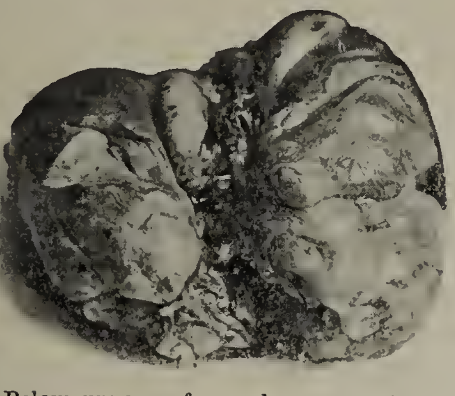
Fig. 3.—Below, upper surface; above, posterior surface.

To the inner side and below we see the inner upper part of the fissure between the lobes filled with a mass of tumor tissue. The upper inner portion of the lower lobe is fairly free from the growth, but the lower part is involved in quite a large mass of tumor tissue.

The middle zone, the space between the lungs, shows two ridges of tumor tissue extending from above downward and separated by a furrow or depression in the depths of which are seen the œsophagus and the descending aorta, which are nearly surrounded by, but are not involved in, the growth; no enlarged glands can be seen in this area. The right zone shows practically nothing but the posterior surface of the right lung, which looks nearly normal, with the exception of the inner portion of the principal fissure, where some small areas of tumor tissue can be seen.

Dimensions: The vertical antero-posterior circumference, forty-eight centimetres. The transverse circumference at its widest portion, including both lungs, forty-four centimetres. Weight of neoplasm, heart, and both lungs, six pounds and a quarter. On incising the neoplasm from above downward in the median line in front, we find within it a cavity, and in this cavity the heart, free and practically normal in appearance. The cavity is lined by a membrane which is somewhat nodulated, none of the nodules being larger than half a pea, and has lost the smooth, glistening appearance of the normal pericardium, excepting a triangular area just posterior to the heart, where the appearance is quite normal.

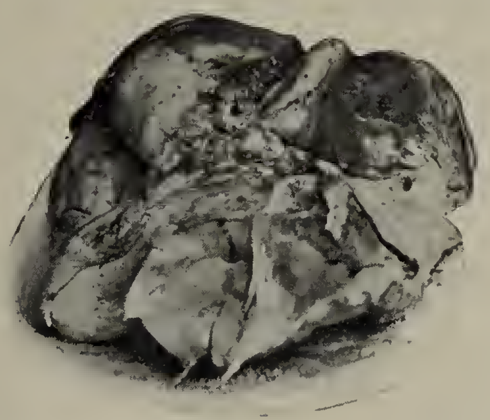
Fig. 4.—Below, the diaphragmatic surface, and above, the posterior surface, of the lungs attached to and invaded by the growth.

Dimensions of the cavity: From above downward, eleven centimetres; side to side at widest part, eleven centimetres; from before backward at the widest part above, four centimetres. The heart looks quite normal, slightly smaller perhaps than it should be, covered by an apparently normal pericardial membrane. The coronary arteries are well marked and normal. Near the beginning of the aorta at its left anterior side is a patch about one centimetre by three centimetres in size, where the heart wall had apparently become adherent to the parietal pericardium. The endocardium presented nothing abnormal. The thickening of the pericardium in this case is quite enormous, varying from six centimetres and a half in front, just opposite the base of the heart, to about a centimetre over the diaphragm. At the bottom of one of the fissures, on the right side, near the root of the lung, is an area in which the pericardial membrane is thickened very little, if any. Dissection at the root of both lungs shows the peribronchial lymph glands to be somewhat enlarged, but not greatly, the largest one found being not larger than a Lima bean, imbedded in tumor tissue, but easily separated from it.

Microscopic findings: The structure of the neoplasm, as revealed by sections taken from different portions of it, is composed of a mass of cells and a very scanty amount of fibro-elastic intercellular substance. The cells, which make up almost the whole of the growth, are massed together with no attempt whatever at arrangement. They are small, round, comparatively uniform in size, and contain nuclei which nearly fill the cell body.

A study of these nuclei reveals a difference in reaction to the stain, which is probably due to a difference in the stage of the development of the cell. There seem to be two distinct types of cells, with apparently several grades between. One type contains a smaller, round nucleus taking a deep uniform stain. The other type contains a nucleus which is slightly larger, irregularly oval in shape, takes a faint stain, and is quite granular in structure. Between these two extremes are cells, some resembling the one type and some the other, and which look like cells that are in the transition stage.

The intercellular substance is fibro-elastic in structure, containing a very few elongated, threadlike nuclei. The amount varies greatly in different portions of the neoplasm. On the whole it is very scanty in amount. Here and there are heavy dashes of this structure looking like narrow bands running through the neoplasm, and from these bands can be seen in places the fine fibrillar processes running out and forming the fine meshwork which supports the tumor cells.

The blood-vessels are very small, not numerous, and the great majority of them have distinct endothelial walls.

The pericardial surface of the growth shows a layer about one millimetre in thickness, which differs from the remainder of the growth in that there is a far greater amount of the fibro-elastic structure present, the fibres of which are arranged parallel to the free surface. In between the fibres are rows and groups of the round tumor cells, running parallel with and infiltrating out to the free surface. The normal endothelium of the pericardium can not be made out. A section through the wall of the left ventricle shows no marked change in the myocardium, the epicardium being also practically normal except in its lower, lymphatic layer, where here and there a few small round cells are seen.

The endocardium shows no change in structure.

A section through the wall of the aorta, just above the valves, shows the aortic wall to be practically normal but surrounded by tumor tissue; the same holds true of the wall of the pulmonary artery. A section through the wall of the right bronchus near the root of the lung shows the entire wall, except the plates of cartilage, to be invaded by the round-cell growth—in fact, the wall is almost entirely made up of tumor tissue; here and there on the inner surface can be seen some of the normal columnar, ciliated, epithelium still remaining, and also underneath this a few of the mucous glands imbedded in the tumor tissue. Sections through several of the slightly enlarged peribronchial lymph glands show the gland outline to be fairly well preserved, the capsule still showing as a very thin layer of connective tissue. Within this layer of connective tissue the structure is almost identical with that of the neoplasm; here and there near the periphery are small round areas of denser aggregations of round cells, but all resemblance to the normal structure and arrangement of the lymph gland is lost.

A section through the diaphragm shows a layer of tumor tissue upon its upper pericardial surface.

Passing down to the musculature of the diaphragm, we find the small tumor cell invading the muscle tissue, passing in between the bundles of fibres and infiltrating in among the individual fibres themselves, compressing them, and in some places entirely replacing them.

The growth passes through the musculature and forms a distinct layer upon the peritoneal side. A study of the peritonæum at this point reveals its endothelium to be fairly intact.

Remarks.—As to the nature of this neoplasm, there can be no doubt that it is a small round-celled sarcoma. The question of greatest interest is, Where did it originate? Unfortunately, in this case, it is impossible to determine accurately the exact point of origin.

In view of the following facts—first, the enormous, uniform thickening of the pericardium; second, the freedom of the epicardium from invasion; third, the very slight enlargement of the peribronchial and mediastinal glands; fourth, the statement in the post-mortem report that "no glandular enlargements were found elsewhere"—it seems to the writer fair and reasonable to assume at least the very great probability of its having originated in the pericardium itself, in its lymphatic layer.

A review of the reported cases reveals two distinct types of involvement of the pericardium by these growths, one occurring as a diffuse, uniform, and enormous thickening of the parietal layer and the other occurring as a discrete nodular growth upon the visceral portion.

It is of a great deal of clinical interest in these obscure and rare cases to note that in every one of the reported instances where a clinical history was obtainable, one of the earliest and most pronounced symptoms was dyspnoic attacks, severe and urgent, which would continue with greater or less severity and urgency throughout the course of the disease.

REMARKS ON PERINÆORRHAPHY, CHIEFLY IN REFERENCE TO THE MECHANICS OF DEEP SUTURES.*

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A SUTURE naturally draws lengthwise and not crosswise.

In a tense circular suture (Fig. A) the transverse force or pressure which it exerts at a given point, *a*, is the resultant of longitudinal traction which has a tendency to cause the given section, *g a f*, to occupy a straight line from *g* to *f*, causing *a* to approach a position at *a'*, plus the longitudinal traction tending to draw *g* toward *c* and *f* toward *d*, the effect being to draw the given point *a* still further toward the centre. The countertraction is inherent in the opposite half of the circle. The same being true of every given point in the circle, the total result is a tendency to draw all points equally toward the centre.

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* Read before the Hospital Graduates' Club, October 26, 1899.

In the case of an elliptical suture (Fig. B) the greater traction is in the direction of the greater length, and the pressure of the side of the suture at any given point (or between opposite points) is proportionate to the distance of the given point from the centre of the ellipse (or of opposite points from each other). In other words, the traction force varies directly with the diameter of the ellipse, and, assuming the internal resistance to be everywhere equivalent, the dynamic force will be converted into static force only when the suture becomes a perfect circle—when traction upon all points will be equal. The traction force exerted upon the points *a* and *b*, *c* and *d*, and *e* and *f*, respectively, will be proportionate to the respective diameters *a b*, *c d*, and *e f*.

Let us imagine an elastic band, previously put upon the stretch in an elliptical form, to surround a rubber bag filled with water. It is evident that the points *a* and *b* and *e* and *f* will be drawn toward the centre more strongly than *c* and *d*. In other words, if the bag possesses free mobility and offers equal resistance at all points, the points *c* and *d* will actually be pushed away from the centre by the superior force drawing all other points toward the centre, until the form of the elastic band becomes a circle.

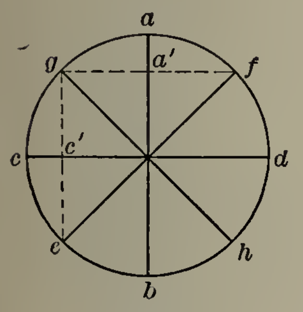

Fig. A.

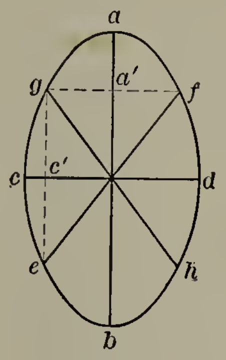

Fig. B.

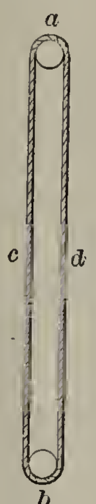

Fig. C.

Now, if we suppose the elastic band (or a suture of any kind) to surround a mass somewhat resisting in structure, like the perinæum, having a form of its own, but possessing considerable mobility, while these qualities of the inclosed tissue will exert a modifying influence to some extent, nevertheless the band or suture, so long as it possesses any dynamic force and meets with internal resistance, will have a tendency to assume a circular shape.

The string about an ordinary bundle will serve as another example. The more tightly the string is drawn the more it will overcome resistance and approach the form of a circle. Under such conditions, so long as a string or suture remains elliptical it will exert the greatest traction in the direction of its long axis.

A more striking illustration (Fig. C) is that of a rope stretched around two posts, let us say twenty feet apart. If the rope has been pulled hard and tied, the points *a* and *b* are held in position very firmly. It would be difficult or impossible to insert a finger between the rope and either post; whereas, midway between the posts, comparatively little force will suffice to draw the points *c* and *d* several inches further apart. And this brings us to the practical application of our study of the physics governing the case.

In a perinæorrhaphy we seek to hold the parts together from the sides, securing a firm coaptation of the lacerated surfaces. To attain this object it becomes evident that the suture should be so introduced as to be elliptical, with its long axis transverse—or at least circular, not having a long axis in any other direction. If we use sutures passing beneath the deep angle of the wound, we must pass them so far out to the sides that they will include enough tissue so that each suture could be drawn to a circular form without crowding the lacerated surfaces out of their natural relations to each other and surrounding parts. The more deeply we carry the suture toward the sides of the pelvis the more traction we shall secure in the right direction—toward the median line. And until such a suture approaches a circular shape it will not only be drawing the sides together, thus holding the lacerated surfaces in forcible coaptation, but it will at the same time have some tendency to bulge the cutaneous, vaginal, and rectal surfaces away from each other, thus giving a thick, firm perineal body.

Of course, all that we desire is a perinæum as good as it was before, and all that we require, therefore, is a suture which will hold the parts together in their natural relations. The lateral introduction of the suture is not to be carried to extremes. But it would be difficult to include too much tissue with an ordinary perinæorrhaphy needle, particularly if the needle is carried around the whole wound in a single grasp of the needle holder. With a curved needle it is almost impossible to include tissue enough. The wound surfaces are drawn apart by the separation of the thighs and buttocks customary during the operation, as well as by the finger in the rectum guarding that viscus from perforation by the needle, and the transversus perinæi muscles may possibly be momentarily contracted. A long, straight needle, very slightly curved near the point, accomplishes the purpose most easily. At the start, after perforating the skin, it must be carried almost directly outward, the deepest sutures in a laceration down to the sphincter ani passing to a depth of nearly an inch on each side of the wound. Such a suture is introduced through the skin (or mucous membrane of the vagina) about an eighth of an inch (more or less) from the margin of the wound, and after passing around the entire wound in the manner indicated emerges through the skin (or mucous membrane) at a corresponding point on the opposite side. If it proves difficult to carry the needle around the entire wound in a single sweep it may be brought out of the bottom of the wound in the middle of its course and reinserted for the remaining half. All the sutures may be introduced before any are tied. It is convenient to introduce the highest suture within the vagina first and work from above downward, tying them afterward in the same order. The wound may be Y-shaped internally, in which case each arm of the Y is better closed separately as a rule. For primary operations silkworm gut and catgut are the best materials. In private practice I always use the latter, as it does not require removal, and usually tie the knot somewhat to the side, as catgut requires a triple knot, which is rather large, and if placed over the line of junction will sometimes make a little bed for itself in the wound and prevent primary union to that extent.

Fig. 1.

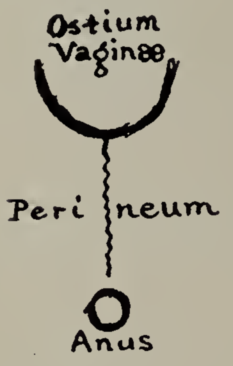

Fig. 3.

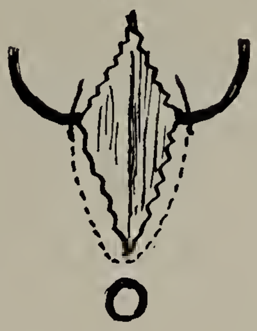

Fig 5.

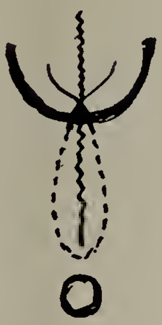

Fig. 7.

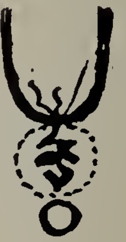

Fig. 9.

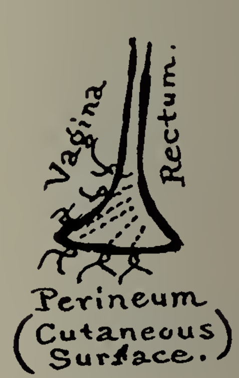

Fig. 2.

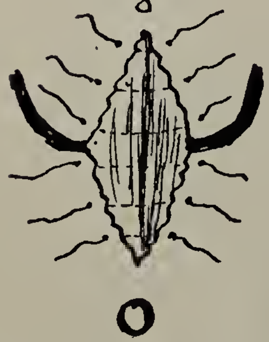

Fig. 4.

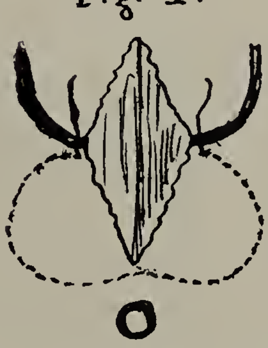

Fig. 6.

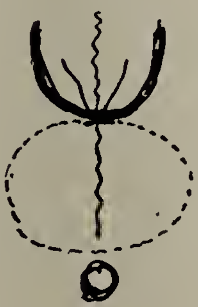

Fig 8.

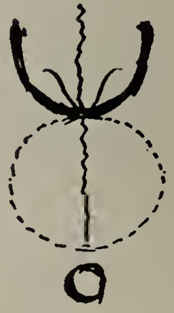

Fig. 10.

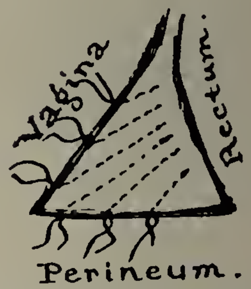

Fig. 1 represents the external surface of the perinæum, with the patient in the dorsal decubitus. Fig. 2 represents the same, with laceration of the perinæum, separation of wound surfaces, and three internal and three external sutures introduced in the ordinary manner. The dotted line in this and subsequent figures represents the buried portion of each suture.

Fig. 3 indicates the shallow grasp of tissue included within the deepest external suture badly introduced. (The oblique direction of this suture could not be shown diagrammatically in this and the five subsequent figures, but is indicated in Fig. 9 and Fig. 10.)

Fig. 4 shows the same suture properly introduced.

Fig. 5 and Fig. 6 show the perinæum in the two preceding figures respectively, with the wound surfaces simply allowed to come together before tying the sutures.

Fig. 7 and Fig. 8 represent the same, with the sutures drawn taut and tied. The former shows the distortion of the wound which it is so important to avoid.

Fig. 9 and Fig. 10 present a lateral view of a median section of the perinæum after perinæorrhaphy, with six sutures improperly or properly performed, as previously stated.

If the sutures are properly introduced they need not be drawn very tight; in fact, it is much better that they should not be, as too tight a suture is painful, impedes circulation, and may distort the wound. We know that in simple median tears primary union will often follow if we merely keep the surfaces in contact by binding the patient's knees together. The transversus perinæi muscles are normally at rest except when the perinæum is forced downward. The belief that they were continually pulling the surfaces apart seems to have been successfully refuted.

Probably the best recent article relating to this subject is that of Dr. J. R. Goffe, published in the *Medical News* of May 28, 1898. But wherein he differs with Emmet I am unable to accept his conclusions or method as possessing superior merit. Taking Dr. Goffe's illustrations of the meal bag with a string tied around one portion of it as representing the fascia and fibres of the levator ani and allied group of muscles composing the pelvic floor, the meal bag should be cut off immediately below the constriction, the orifice thus formed representing the opening or openings in the pelvic floor, the perineal portion of which it is desired to close by operation. If the sutures are inserted all within the vagina, as advised by Dr. Goffe, I contend that the upper ones will be entirely above the fibres and fascia of the levator muscles. Only the lowest two or three sutures will pierce and include these structures. Indeed, the lowest suture of all will probably be entirely below the levator—outside the bag, as it were. The next suture probably will occupy the position of a running string in the opening of the bag, and the higher sutures will be entirely within the bag. In Emmet's operation the external sutures (those inserted through the skin) will all pierce and include the levator muscle or fascia, and the same may be true of one or two of the deeper internal sutures. Practically, I believe all this amounts to about the same thing as a distinction without a difference. Like Emmet, Dr. Goffe uses a straight needle and includes a liberal amount of tissue by carrying it outward toward the side of the pelvis. That I believe is the secret of his success. He may even reach the levator with more sutures than I have assumed. But the important factor is that his sutures surround enough tissue to exercise suitable transverse traction and secure union of large surfaces; and the levator muscles, including the transversus perinæi, can not fail to share the benefits of such union. Their distal attachments have been restored—brought properly to the median line and retained there.

I confess that I am not as familiar with the minute anatomy of the perinæum as my friend, Dr. Dickinson, of Brooklyn; and I may have failed to grasp some essential detail in the elucidation of Dr. Goffe. But I contend that primary perinæorrhaphy, at least, is so simple that one need not even know the direction of the muscular fibres of which the perinæum is chiefly composed. All the operator need know is the gross anatomy of the parts and how to introduce sutures so that they will hold the torn surfaces together in their normal relations, without dragging the rectum forward, the vagina and posterior commissure backward, and producing other distortions, which lead to cystocele, rectocele, inversion of the vagina, and prolapsus uteri, all of which I have seen in varying degrees after apparently successful perinæorrhaphy. The accompanying diagrams will serve to illustrate my meaning.

The diagrams are no more striking than the actual results.

And what is true of the primary is largely true of the secondary operation. For this reason I believe the Tait operation is a poor one. And in closing, I am free to express the belief that so far as the secondary operation is concerned, general surgeons seem to know comparatively little about it unless they have made it a subject of special study. I do not go so far as to say that every hospital should have a gynæcological service, though I have heard that opinion expressed by an esteemed member of this society. The secondary operation is one of election, and we should choose a good operator. But primary perinæorrhaphy is so frequently required that every obstetrician should be qualified to repair the perinæum at the time of injury. And the point upon which I would insist most strongly is this: *Make the sutures include enough tissue on both sides of the wound to enable them to exert their greatest traction in the right direction and hold the wound surfaces together in their natural relations.* Insert a sufficient number of sutures to secure perfect coaptation of surfaces. Sometimes a superficial suture will be required here and there between the deep ones. If necessary, employ an anæsthetic. Emmet was not far wrong in saying that "an operation on the perinæum should be done with the same nicety as an operation on the face." We can not expect primary union if we fail to secure primary coaptation. Surfaces separated by air, blood clots, or lochia can hardly grow together; and cicatricial distortions can not be expected to shape up into a proper perinæum.

As Dr. Sands used to say of surgery in general, so it may be said of this operation, that "bad results in the long run of cases depend upon bad surgery and not on bad luck." Perineal lacerations, as a rule, are as simple as scalp wounds and should unite as kindly. A badly inserted suture, particularly when drawn too tight, is not only useless but literally a direct *drawback.* It is avoidable and inexcusable.

19 Fifth Avenue.

GUNSHOT WOUNDS.

A REPORT OF GUNSHOT CASES IN THE SPANISH-AMERICAN WAR, AND DEDUCTIONS THEREFROM.

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(*Concluded from page 504.*)

Effect of the Compound Bullet on Bones.—Of the one hundred and ninety-eight compound bullet wounds, thirty-eight, or a little over nineteen per cent., involved the bones.

No conclusions as to the difference in effect produced at different ranges could be reached. In the great majority of the cases the range was not definitely known and could be guessed at in a general way only, though nearly all the wounds were thought to have been received within six hundred yards. The range of the Mauser was so great and the terrene so broken and woody that the men were usually unable to give any definite information as to distance. Added to this was the impossibility of determining in all cases whether the injuries were produced by bullets in flight or by ricochet balls which had in part lost their velocity.

Relative to effect, the important fact was noted that practically all fractures were considerably but not greatly comminuted.

Of the special kind of fracture produced there were two cases (Nos. XLV and XLVI) of explosive effect; two cases (Nos. XXXIX and XLV) of fracture by contact; three cases (Nos. XLII, XLIV, and XLVIII) of perforation of the bone, and one probable case (No. XIV) of perforation without fracture; also one case (No. XXIII), before given, where the bullet made a clean gutter through the skull.

In one explosive case (No. XXXIX) the distal half of a metacarpal bone was blown completely out; in the other (No. XLV) the femur was practically destroyed for five inches of its length, being badly comminuted and partially reduced to bone sand. In both cases fragments of bone were driven out through the exit wound, one fragment driven out being two inches long and half an inch wide, yet the exit wound, strange to say, did not differ in appearance from the ordinary wound.

In several cases the fractures were complicated with quite extensive subcutaneous destruction of the soft parts. This is shown in Cases XXXVII, XXXVIII, XL, XLIII, and XLVI, and is a complication which, in spite of the aseptic character of the wound, will be productive of a certain amount of disability from the destruction of tissue and the formation of cicatrix in the wound.

All the cases ran extremely favorable courses. The progress of the uncomplicated cases where the wounds were aseptic differed in no way from the usual course of simple fractures. Where the wounds were suppurating they were explored, thoroughly cleansed, and all loose fragments of bone removed. The result was most gratifying, for in all there were practically no febrile symptoms and absolutely no septicæmia. The favorable course of these cases was a most marked illustration of the value of the application of antisepsis to infected compound fractures.

Röntgen-ray observations were made in all cases, and the fluoroscope proved of great value in ascertaining the amount of comminution, and whether or not the broken ends of the bones were properly approximated when set.

The cases which presented particular points of interest, either from the region involved, the nature of the wound, or its progress under treatment, are given below.

Fractures of the Face.

Case XXXI. *Fracture of Superior Maxillary Bone, with Perforation of Antrum.*—Private H. J. T., Company G, Thirteenth United States Infantry, was wounded July 1st by a Mauser bullet, which entered half an inch in front of the right external meatus, passed just below the zygoma in a straight line through the zygomatic fossa, the superior maxillary bone and antrum, and emerged through the upper lip just to the left of the median line.

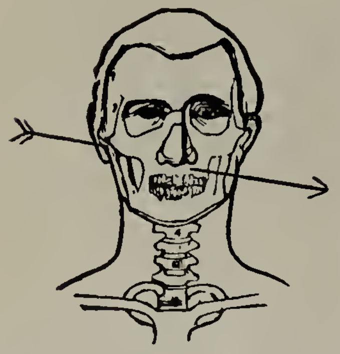
Fig. 10.—Private H. J. T., Thirteenth United States Infantry.

At the time of the injury he bled freely from the nose, but this soon stopped, and when he was received at the hospital he was suffering very little discomfort.

Both entrance and exit wounds were small. The case was notable in that there were no nasal or any marked symptoms, and the patient was entirely well when given a furlough on August 7th.

Case XXXII. *Compound, Comminuted Mauser-bullet Fracture, Inferior Maxilla.*—J. S., S. W., United States steamship *Cincinnati*, was wounded May 3d by a Mauser bullet, which, entering the mouth, shattered the left maxilla and drove fragments of bone and several teeth out through the cheek. In spite of the severity of the wound recovery was rapid, and he was returned to duty on May 27th.

This case was first treated at the post hospital by Dr. Clendennin, United States Army, but was afterward transferred to the general hospital.

Case XXXIII. *Perforating Krag-Jorgensen-bullet Wound of Face.*—J. H., civilian, colored, aged fifteen, was shot by a sentined at about fifty yards' range at Key West Barracks. The ball passed straight through the face from side to side, perforating both superior maxillary bones, both antrums, and the nasal fossæ.

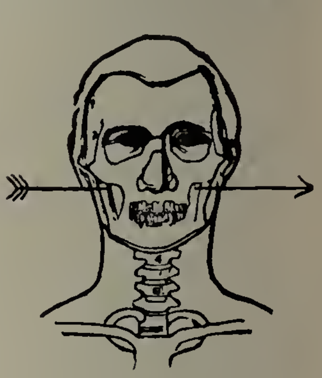
Fig. 11.—J. H., civilian.

The case was treated at the post hospital by Dr. Clendennin, by whose courtesy I saw it.

Though the range was short, there had been no explosive effect, the bullet passing through the soft bones of the face much as it would through the soft tissues. The wound of exit was but little larger than that of entrance. There was considerable hæmorrhage at first, and air and blood were blown through both external wounds. The anterior and posterior nares were washed daily with antiseptic solutions, and the case progressed to recovery without complications.

Fractures of the Scapula.—There were two cases of this kind, and in both the fractures were diagnosticated more by the course of the bullet than by any other symptoms.

Case XXXIV. *Multiple Perforating Wound of Back, with Fracture of Scapula.*—Corporal H. M., Troop D, First United States Volunteer Cavalry, was struck at unknown range by a Mauser bullet, which entered the back over the lower angle of the scapula, passed upward and transversely, chipped the end off and emerged at the spine of the seventh dorsal vertebra, reentered about an inch beyond, passed under and through the body of the right scapula, emerging at a point posterior to the shoulder joint.

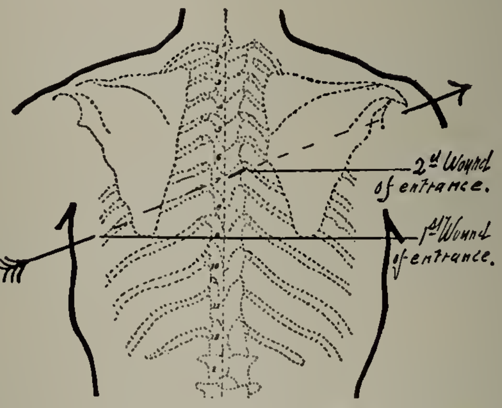

Fig. 12.—Corporal H. M., First United States Volunteer Cavalry.

On arrival at the hospital all the wounds were aseptic and nearly healed. There was considerable limitation of motion of both arms, due to soreness and pain in moving the muscles about the scapula. This gradually decreased, and motion was normal when he was furloughed on August 1st.

In the next case the bullet passed through a thicker part of the scapula, the spine, and the damage done both the bone and the soft parts was presumably greater, accounting for the resulting disability.

Case XXXV. *Perforating Mauser-bullet Wound, with Fracture of the Scapula.*—Private H. O., Company A, Tenth United States Infantry, was wounded July 2d, at four hundred yards' range, by a Mauser bullet, which entered at the top of the right shoulder behind the clavicle, two inches from its distal extremity, ranged downward through the scapular spine, and passed out just below the lower angle of the scapula. On arrival at the hospital the entrance and exit wounds were healed. There was much pain on movement of the shoulder, but no crepitus could be elicited; the course of the bullet, and the pronounced and continued disability in movements of the arm, alone indicated the presence of a fracture of the scapula. In November, 1898, his company commander writes: "The motions of the arm are greatly impaired."

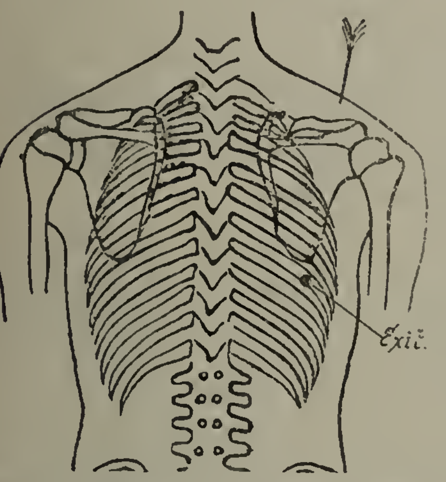

Fig. 13.—Private H. O., Tenth United States Infantry.

Fractures of the Humerus.—Two cases of this kind were observed. Both ran uncomplicated courses, differing in no way from those of simple fractures. In one the result was perfect, in the other slight disability resulted, apparently due to laceration of the biceps and the formation of cicatricial tissue in the body of that muscle. The cases were as follows:

Case XXXVI. *Mauser-bullet Fracture of Humerus.*—Sergeant E. L., Troop C, Tenth United States Cavalry, was wounded July 1st by a Mauser bullet at about one hundred and fifty yards' range. The bullet passed from before backward and without inward through the arm and humerus at the junction of the upper and middle thirds. The entrance wound was slightly smaller than the wound of exit, and both were aseptic. Though the bullet was received at short range, the humerus was apparently little shattered, and united without trouble. In November, 1898, he writes that he is entirely well.

Case XXXVII. *Mauser-bullet Fracture of Humerus.*—Private F. C. H., Company D, Seventy-first New York Volunteer Infantry, was wounded by a Mauser bullet, which passed from before backward through the arm and humerus at its middle third. The conditions were similar to those in the case given above, with the exception that the passage of the ball through the biceps caused some impairment of the functions of that muscle, as he writes (November, 1898) that "the biceps is stiff, not allowing full extension of the arm by two inches, and does not permit the lifting of more than twelve or fifteen pounds without pain; otherwise normal."

Fractures of the Forearm.—There were eight cases of fracture of the forearm. Three of these were fractures of both bones, four were fractures of the radius, and one a fracture of the ulna.

Most of these cases were aseptic when received and progressed to recovery without complications. The following cases are of interest: the first, from the wound being aseptic when the patient reached the hospital, and the second from its being a fracture by "contact."

Case XXXVIII. *Infected Compound Bullet Fracture, Left Radius; Operation.*—Private J. B., Troop C, Tenth United States Cavalry, was wounded July 1st, at two hundred yards' range, by a Mauser bullet, which passed from before backward through the forearm, fracturing the radius.

When received at the hospital the wound of entrance was seen to have been enlarged by incision, and the patient stated that it had been operated on at the field hospital, but did not know what had been done. The wound was suppurating, there was no union, and there was marked tension on the stitches. It was laid open under anæsthesia, thoroughly cleansed, a fragment of bone seven centimetres long and two centimetres wide was removed, and an iodoform-gauze drain was inserted. With the finger in the wound it was found that best apposition was obtained when the forearm was fully extended and pronated. A long posterior splint was applied to the arm, holding it in that position, after which examination with the fluoroscope demonstrated that the bones were held in correct position. There was no inflammatory reaction or rise of temperature following the operation. The wound was flushed daily with hydrogen peroxide and normal salt solution, and was entirely closed with firm callus at the seat of the fracture on August 16th, when he was transferred to the transport *San Marcus*. On January 4th his attending surgeon reports: "The removed bone seems to have been largely replaced, and the hand and forearm present a good form. The joints are freely movable, passively and actively; all motions are feeble. The hand hangs semiflexed on the wrist. Adduction, abduction, flexion, extension, circumduction at the wrist, pronation and supination are present on voluntary effort, but all are feeble. Flexion of the fingers is limited to the second and third joints; the grasp is very feeble. The thumb can be approximated to each of the fingers sufficiently to pick up a pencil, but there is little power in it. The hand is relatively of little use, absolutely of considerable."

He has since been discharged for disability and admitted to the Soldiers' Home at Washington, D. C.

This case is of interest from its excellent progress under antiseptic treatment. Formerly this case would have required amputation, but, as it is, the arm, while disabled, is reported to be of considerable use; certainly better than no arm at all. As the bones united firmly, the resulting disability is probably mainly due to the injury to the soft parts.

In the following case the bullet barely grazed the periosteum, yet the radius was badly shattered. This was probably due to the same cause which produces explosive effect at certain ranges, the lateral shock being so great as to shatter the osseous tissue.

Case XXXIX. *Fracture of Radius "by Contact"; Flexor Tendons Severed; Infection; Disability.*—Sergeant T. F. C., Troop G, First United States Volunteer Cavalry, was wounded at unknown range by a Mauser bullet, which passed across the front of forearm in its lower third, severed the flexor tendons, grazed the periosteum of the radius, and shattered the bone. The track of the bullet was laid open at the field hospital, the tendons sutured, and the wound united by silk sutures. On his arrival at the general hospital pus was escaping from between the sutures and the wound was tense, bulging, and much inflamed. The sutures were removed under anæsthesia and the wound carefully cleaned. Owing to extensive inflammation and suppuration, it was found impossible to unite the tendons. The wound was treated with antiseptic applications, but had not entirely healed when he was transferred north on August 22, 1898.

In November he writes that he has no use of the hand, the fingers remaining stiff. The disability is probably permanent.

The following case is of interest in that the radiograph showed lateral displacement of one of the fragments, and, though the wound was aseptic, some disability resulted:

Case XL. *Compound, Comminuted Gunshot Fracture, Right Radius, with Lateral Displacement of One of the Fragments.*—Private D. B. W., Troop C, First United States Cavalry, was wounded July 1st at eight hundred yards by a Mauser bullet, which passed from behind forward through the forearm, shattering the radius. On his arrival at the hospital both entrance and exit wounds were aseptic. The Röntgen ray showed a right-angled displacement of a fragment of bone, but, as the displacement was outward, it was thought that the rotation of the radius would not be interfered with, and that the fragment could be removed later if necessary. The bone united firmly, and the patient was furloughed on August 7th, at which time, though the motion was limited, there seemed to be every indication that full use of the arm would be obtained. Such, however, did not prove to be the case, as his attending surgeon, in November, writes: "Soldier has not full use of it (the arm), and has been recommended for discharge on surgeon's certificate of disability."

In this case the impaired motion was due to the injury to the soft parts, and not to the small displaced fragment of bone, as a recent examination shows a firm band of connective tissue extending through the track of the bullet.

Fractures of Bones of the Hand.—There were thirty-one gunshot wounds of the hand by the jacketed bullet, of which sixteen were compound fractures.

These wounds of the hand presented two marked peculiarities: First, they evidenced through how small a space the jackcted bullet could pass, for in several instances the bullet passed through the hand between the metacarpal bones without fracturing the bones on either side, and through the finger, fracturing the phalangeal bone without severing the finger. As a consequence, but one finger was amputated for compound bullet wound, and that was done at the field hospital. Second, that in every fracture some impairment of the function of the hand resulted. The more delicate motions of the hand require such perfect motion of the joints and tendons that the destruction of tissue in gunshot wounds which are complicated with fracture, where the laceration is always greater than in simple perforating flesh wounds, is almost sure to produce more or less impairment of motion. This was so far the rule that, while nearly all the flesh wounds recovered without producing any impairment of the hand functions, the compound fractures, as above stated, all produced more or less permanent limitation or impairment of motion.

The following are illustrative cases:

Case XLI. *Compound, Comminuted Mauser-bullet Fracture of Third Finger.*—Private G. H. D., Company L, Second Massachusetts Volunteer Infantry, was wounded July 1st, at unknown range, by a Mauser bullet, which passed obliquely through the fourth finger of the left hand, shattered the second phalanx, and then passed across the top of the second metacarpal phalangeal joint of the middle finger, producing a lacerated wound of the joint. The entrance and exit wounds in the finger were small and aseptic. The lacerated wound was infected, but healed quickly. A palmar splint was applied, and the fracture treated as a simple one. In November he writes that there is complete ankylosis of the second joint of the ring finger.

Case XLII. *Mauser-bullet Fracture, Metacarpal Bone, Left Thumb; Multiple Wounds.*—Private T. I., Troop L., First United States Volunteer Cavalry, received seven bullet wounds July 1st, at about one hundred yards' range. Four wounds were perforating and two were lacerated. All were flesh wounds except one, where the bullet passed through the metacarpal bone of the left thumb.

The Röntgen ray showed that the bullet removed a part of the bone quite cleanly, leaving almost the appearance of a transverse fracture. The wounds healed rapidly, but motion of the thumb was impaired.

Case XLIII. *Mauser-bullet Fracture, Fourth and Fifth Metacarpal and the Unciform Bone.*—Private S. A. C., Company D, Sixteenth United States Infantry, was wounded July 1st in two places. One bullet passed through the arm and entered the chest wall, whence it was removed at the field hospital, and a second bullet passed obliquely through the palm, greatly comminuting the proximal end of the fifth metacarpal. The subcutaneous soft parts also appeared to be considerably lacerated, so that the injury to the tendon sheaths and the resulting cicatricial adhesions about the tendons and palmar fascia rendered the hand useless, and the soldier was later discharged for disability.

The following case is of interest in that the Röntgen ray showed nearly clean perforation of the trapezium:

Case XLIV. *Accidental Krag-Jorgensen-bullet Fracture of the Trapezium.*—Private A. B., Company C, Twenty-first United States Infantry, accidentally discharged his rifle July 2d, the bullet and whole discharge passing through the palm of the hand. The bullet perforated the trapezium, throwing out only a small fragment. The entrance and exit wounds were small, and it was rather remarkable that there was nothing in the appearance of the part differing from that seen in wounds received at longer range. The wound healed rapidly, but full use of the hand had not been restored in November, as his company commander then stated that he was not able to handle his rifle with ease.

The following case is of interest on account of the complete destruction of the distal end of the fourth metacarpal bone and the clean removal of all fragments through the wound of entrance. Also in that the Röntgen ray showed that the third metacarpal bone was only grazed by the ball, and that the shattering of the distal extremity of the bone, like that of C.'s radius in Case XXXIX, was from contact and not from perforation.

Case XLV. *Mauser-bullet Fracture, Second and Third Metacarpal Bones, Left Hand, with Complete Destruction of Distal End of Fourth Metacarpal.*—Private J. T. S., Company F, Thirteenth United States Infantry, was wounded at five hundred yards' range by a Mauser bullet, which passed obliquely through the hand, fractured the third metacarpal bone by contact, completely destroyed the distal end of the fourth metacarpal, and carried out all the fragments through the exit wound.

This case was peculiar in that though all the fragments of the fractured bone had been driven out through the exit wound, yet the wound was little larger than the wound of entrance, and only by use of the Röntgen ray would it have been suspected that the bullet had made a clean resection. In November the soldier states: "Motion of middle, ring, and little fingers much restricted, especially in flexion."

Mauser-bullet Fractures of the Thigh.—But one case was observed, and that was particularly interesting in that the explosive effect was marked and was produced within the range where explosive effect occurs.

Case XLVI.—E. S., apprentice, first class, United States Navy, was wounded May 11th in the Cienfuegos affair by a Mauser bullet at unknown but not long range, as the boat of which he was one of the crew was not far distant from the shore.

He was kneeling at the time, and the bullet entered the anterior and inner aspect of the thigh at its middle, passed backward and downward through the femur and thigh, and then through the outer side of the calf of the leg.

He was taken to the post hospital at Key West, where I saw him with Dr. Clendennin on May 13th.

The severity of the injury was apparent, and he was anæsthetized for examination and operation if necessary. The first wound of entrance was round, small, and "punched out"; the first wound of exit was also round, slightly lacerated at the edges, and would barely admit the tip of the index finger. It was enlarged, and the condition of the fracture carefully examined. The bone was found greatly comminuted, with several fragments entirely loosened from the periosteum, and with considerable "bone sand" in the track of the bullet.

It was apparent that fully five inches of the femur was destroyed, and Dr. Clendennin proceeded to do an amputation at the junction of the upper and middle thirds, but the patient succumbed to shock shortly after the operation was completed.

On examining the amputated limb the destruction of tissue in the soft parts in the neighborhood of the fracture was found to be great, a condition which is undoubtedly frequently present in cases where the bone has been greatly shattered by the bullet, and which must have an effect in producing subsequent impairment of function through the formation of a large amount of cicatricial tissue. The greater part of the bone for five inches of its length was reduced to bone sand and small fragments, and the remainder was completely fragmented.

On examining the leg, the second wound of entrance was found to be quite large and lacerated, and in the tissues beneath were found bone sand and numerous fragments of bone—the largest six by two centimetres—which had been carried from the femur through the first wound of exit and driven into the tissues of the calf by the force of the ball.

The carrying of bone out of the wound in this case was similar to that observed in Case XLV, and is probably a condition frequently connected with the explosive effect.

Fractures of the Leg.—But one case was observed. In this the progress and result were similar to those of simple fracture.

Case XLVII. *Mauser-bullet Fracture of Tibia; Typhoid Fever; Recovery.*—Private M. P., Troop C, First United States Cavalry, was wounded July 1st, at three hundred yards' range, by a Mauser bullet, which passed through the tibia five inches below the knee joint.

When received at the hospital the leg was in a Bavarian splint, which had been made at the field hospital from a gray blanket. It had answered the purpose admirably; the leg was in good position and the wound aseptic and healed. A plaster-of-Paris splint was applied and the patient did well until July 23d, when he developed typhoid fever, which ran rather a mild course. August 21st he was transferred north, and in November his company commander writes: "Soldier is now doing duty with troop and experiences no ill effects from injury."

Compound Bullet Fractures of the Foot.—But one case came under observation. This was interesting in that the bullet in passing through the os calcis displaced fragments of the bone which united to the bone, forming a spur on the plantar surface which caused pain from pressure in walking. Removal of the spur removed the disability.

Case XLVIII.—Private J. F. M., Company C, Fourth United States Infantry, received two Mauser-bullet wounds—one of the upper lip and jaw, destroying the right upper teeth and lodging in the superior maxilla. In the other the bullet passed from above downward through the posterior end of the os calcis, perforating but not fissuring the bone. In September he was sent to the general hospital, Washington Barracks, for dental restoration of the lost teeth, where he came under my observation. At that time both wounds were completely healed, but he complained of pain in walking, and the Röntgen ray showed a spur projecting downward from the under surface of the os calcis. This was removed November 19th, the wound healed by first intention, and, the dental restoration having been made, he was returned to duty four weeks later.

General Considerations.—In reviewing these two hundred and two cases I think it can be safely concluded that much has been gained both by the use of modern surgical methods and the new bullet. Many of the cases, if wounded by the old bullet, would have been killed outright, and others, if treated by the old method, would have had to suffer amputation, protracted suppuration, septicæmia, pyæmia, hospital gangrene, and would, even if eventually recovering, have had to undergo long-protracted illnesses, while many never would have recovered at all.

In the civil war 33,653 of the 235,585 who received gunshot wounds died, a proportion of 1 in 7.

How many of the wounded in the Spanish-American war died is not yet known, but the report of the Commission on the Conduct of the War Department says: "All reports show that the percentage of recoveries was extraordinarily high, due to the combined influence of small-calibre bullets, first-aid dressings, and skillful aseptic and antiseptic treatment."

Also, relative to the humane effect of the compound bullet, though not germane to this paper, it may now be stated that the proportion of killed to wounded has not been increased by its use.

Previous to this war much speculation was indulged in as to what the proportion of killed to wounded would be in battles in which the forces were armed with the small-calibre rifle, and some held that, owing to the supposed peculiarly destructive action of the new bullet, the killed would even exceed the wounded in number. But under the actual test of battle the proportion of killed to wounded was less than in the civil war, where the large lead bullet was used.

	Killed.	Wounded.	Ratio.
Civil war............	59,860	280,040	1 to 4.6
Spanish-American war..	280	1,581	1 to 5.6

In concluding this paper the following summary is presented:

RELATIVE TO THE EFFECT OF THE JACKETED BULLET.

I. That perforating and penetrating wounds made by the compound bullet are usually aseptic.

II. That in non-fatal wounds it produces small shock and injury to tissues, provided no bone or important nerve or vessel is involved.

III. That in bone the bullet usually comminutes the bone to a considerable extent, and that the fractures are sometimes complicated with considerable destruction of the soft parts about the bone, which in the extremities frequently produces permanent impairment of function.

IV. That wounds of exit are frequently smaller and are seldom much larger than the wounds of entrance, and are little influenced by the kind of tissue through which the bullet has passed.

V. That the lodgment of small-calibre bullets can usually be traced to long range or to ricochet of the ball.

VI. That lodged bullets seldom do immediate harm in the tissues; even shrapnel bullets, which are ordinarily supposed to be more productive of suppuration than jacketed bullets, not usually causing inflammatory trouble unless searched for and removed at the field hospital.

VII. That the proportion of killed to wounded in battle has not been increased by the use of the small-calibre bullet.

RELATIVE TO SURGICAL METHODS.

I. That aseptic and antiseptic methods have been the greatest factors in reducing post-traumatic complications and the mortality of the wounded.

II. That excellent results are obtained by dressing wounds with the first-aid packet or other occlusive dressing, and by packing lacerated wounds with iodoform gauze and leaving them undisturbed until they can be attended to with aseptic precautions.

III. That bullets which remain in the tissues usually give rise sooner or later to symptoms of discomfort or disability, and that, in consequence, all bullets should be removed, if possible, but the removal should be deferred until aseptic conditions are available.

IV. That the Röntgen ray is of the greatest value in locating bullets and determining the condition of fractures.

V. That under asepsis there should be no hesitancy in employing operative interference in compound fractures where there is irreducible displacement of bone, or where the Röntgen ray shows a condition of fragmentation liable to produce impairment of function, and that all septic wounds and fractures should be treated by thorough antiseptic methods.

VI. That surgical asepsis is practically impossible on the field or at the field hospital.

VII. That operative interference on the field or in the field hospital should be restricted to operations imperatively demanded to save life or to decrease the probability of death where transportation without operation would be more dangerous than the septic infection liable to occur from immediate operation under unfavorable conditions.

RELATIVE TO MEDICO-MILITARY METHODS.

I. That the transportation of the wounded to permanent base hospitals should be in every way facilitated.

II. That the establishment by the surgeon-general during the late war of numerous fully equipped general hospitals, and the speedy transportation of the wounded to and their treatment at these hospitals, was of inestimable value in promoting the application of aseptic and antiseptic methods under favorable surroundings, and so reducing the mortality and post-traumatic complications of the wounded.

It is a method which should be carried out in future wars, for it reduces the work at the field hospitals to proper bounds—*i. e.*, primary dressings and operations of immediate necessity—and allows the application of modern surgical methods where most effective in reducing the probabilities of death and disability.

A CONSIDERATION OF
THE NEUROMUSCULAR ELEMENTS IN HIP-JOINT DISEASE,
WITH ESPECIAL REFERENCE TO THE QUESTION OF THE ABOLITION OF PROTECTIVE TREATMENT.*

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When a patient with hip-joint disease reaches a point in treatment where the question of convalescence is considered, one is met by conditions which are no less interesting or important than those which arise when a point of early differential diagnosis, involving the joint itself, is presented. Indeed, there is no condition in the treatment of hip-joint disease which calls for greater exercise of judgment, or which involves a closer estimate of that which is "organic," or due to the destructive osseous lesion itself, and that which is more purely "functional," or due to the treatment, than that which arises under these circumstances. As we must rely largely upon a neural sign in making an early diagnosis, so must we analyze the complex signs and symptoms which confront us in determining the ability of the oft-times damaged joint to perform its necessarily limited functions.

A tuberculous hip joint—for it is the symptoms of chronic joint disease as found at this expressive articulation which I propose to consider—presents many peculiar features: The insidious onset of the disease; its oft-times uncertain history; the expressive inability of the patient, even in the first apparent stage of the disease, to bear the full weight of the body upon the affected limb; the frequent disappearance of the limp, in its early history, only to recur again, however, after some slight traumatism; the early appearance of the reflex muscular protection to the articulation; the reduced faradaic reaction of the muscles affected by this "spasm"; the concurrent appearance of the muscular atrophy; the existence of an increased muscular excitability; the frequent absence of pain; the changing character of the progressive deformities; the gradual disintegration of the bony tissues involved; the frequent destruction of the joint without abscess; the ordinarily innocuous character of the abscess when it does appear; and the long and persistent character of the disease, all point to the fact that we have in hip-joint disease and allied articular affections a complex pathological problem of much interest not only to the surgeon, but to the neurologist as well.

Indeed, throughout the entire course of hip-joint disease, especially, neural signs and symptoms of a suggestive type are present, which have not been adequately studied or satisfactorily explained. Orthopædic surgeons talk about "the reflex muscular spasm" as if it were an ordinary symptom. But it is not an ordinary symptom, and its nature has not been fully determined. Its value as a diagnostic sign is fully appreciated by the few whose studies have led them along certain lines of clinical work, but to the profession at large the expression "reflex muscular spasm" as applied to hip-joint disease, for example, conveys a very vague meaning, and is generally interpreted as a simple functional condition. Hence I feel perfectly justified in asking, What is the pathological interpretation of the marked neuromuscular signs and symptoms which exist in hip-joint disease, and in allied articular diseases?

From a purely operative standpoint the problems involved in the treatment of hip-joint disease are neither difficult nor profound. They are well understood and are aptly taught in all our medical schools, and the mechanical aspect of its treatment, after many years, is beginning to receive the attention it deserves. The neuro-muscular elements are those which to-day demand a closer study and a more intelligent interpretation. The involuntary muscular joint protection, the early and expressive muscular atrophy,* the reduced faradaic reaction of these muscles,† and their increased muscular excitability ‡ are suggestive factors in hip-joint disease, and especially in those of the tuberculous variety. As long ago as 1872 I called attention to the reflex muscular spasm and the accompanying muscular atrophy, and later on demonstrated the reduced faradaic reaction of the affected muscles. I pointed out then (1876–'77) that these conditions must arise from a nerve irritation, and quoted from Brown-Séquard, Charcot, Paget, Weir Mitchell, and Seguin to sustain the position then assumed.

Recognizing that there was a specific muscular atrophy not due to disuse, and that the muscular protection was involuntary in joint disease, I sought in vain for a long time for an explanation of these phenomena, and it was not until I read Charcot's classical *Lectures on Diseases of the Nervous System* that the matter became clear; and, in order that my present position may be made plain, I shall quote, as I did in 1877,* from the authorities which led me to look for and to find a reduced faradaic reaction in the thigh muscles in hip-joint disease.

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* A revision of a paper read before the Orthopædic Section of the New York Academy of Medicine, January 19, 1900 (see an abstract of the original paper and of the discussion in the *New York Medical Journal* for February 24th).

* Paget. *Clinical Lectures and Essays*, 1875; and Valtat, *De l'Atrophie musculaire consécutive aux maladies des articulations*, 1877.

† Reflex Muscular Contraction and Atrophy in Joint Disease, *Archives of Clinical Surgery*, June, 1877; also, The Ætiology and Pathology of Chronic Joint Disease, *Seguin's Series of American Clinical Lectures*, vol. iii, No. 6, 1877 (by the author).

‡ E. G. Brackett. Reflexes in Hip Disease, *Boston Medical and Surgical Journal*, vol. cxxvi, No. 13, 1892.

Charcot says, quoting from Brown-Séquard: "*Nerve irritation alone is capable of determining rapid and early atrophy of the muscles, preceded by decrease or disappearance of faradaic contractility. Complete nerve division does not induce atrophy and loss of electrical contractility until after an incomparably greater length of time, as in the case of prolonged inaction.*" † (Italics are Charcot's.)

Charcot further says: "If lesions whose consequence is the abolition or suspension of the action of the nervous system are impotent to produce in distant parts other nutritive disturbances than those attributable to prolonged inaction, *it is not thus as regards lesions which determine, either in the nerves or nervous centres, an exaltation of their properties, an irritation or an inflammation.*" ‡ (Italics are Charcot's.)

And in a footnote this eminent author thus summarizes his conclusions: "It appears in fact to be demonstrated that the latter"# (muscular alterations dependent upon nerve irritation) "supervene with much greater rapidity and are preceded and accompanied by more or less marked modification of electrical contractility, which do not show themselves in the former" (muscular alterations connected with functional inertia) "with the same characteristics and only make their appearance at the end of a very long lapse of time." #

Contributory to this subject also were the clinical observations of Paget.|| Speaking of "the wasting of limbs near the affected joints," he says: "This wasting occurs quickly in nearly all acute inflammations of joints. More slowly in chronic inflammations. . . . It is not, I repeat, a mere wasting from disuse. . . . I wish I could explain it better than by calling it reflex atrophy."

And Weir Mitchell, whose contributions to this subject of irritative nerve lesions is so well known, wrote me, November 5, 1877, as follows: "There is a resemblance between the two conditions you speak of" (the muscular spasm and atrophy occurring in joint disease and the same conditions following injuries of nerves): "both sets of contractures and atrophies result from irritative peripheral lesions of nerves in and out of joints."

The late Dr. E. C. Seguin, who kindly aided me on many occasions in my investigations, and who publicly demonstrated my experiments, took the same ground regarding them as did Weir Mitchell.

This was done without any knowledge on my part of Valtat's * experimental work. Indeed, our contributions occurred simultaneously, Valtat's in France, my own in this country, and our work, which might to some appear to be similar, varied in this important respect: Valtat demonstrated that an acute joint inflammation artificially produced in animals, was followed by the muscular atrophy so well described clinically by Paget, while the writer, having long recognized this atrophy as of constant occurrence in especially the chronic form of articular disease, demonstrated the reduced faradaic reaction of the muscles in these conditions, and pointed out in cases of pseudo hip disease, where the patients had been subjected to a prolonged immobilization treatment, that the reduced faradaic reaction was absent, and that the atrophy was simply that of disuse.

On various occasions † after the essays of 1877 I have called attention to these matters. I venture to do so again, and on this occasion I shall attempt to describe the condition which we call "reflex muscular spasm," more in the hope, however, of eliciting a discussion than of being accurate in my description.

The peculiar muscular condition which is manifest, especially in the first stage of hip-joint disease, and which persists more or less throughout the entire course of the disease, is characterized by a sudden, almost peremptory, contraction of the muscles involved when passive motion is attempted beyond a certain point. A peculiarity of this contraction is that the muscle or muscles are quiescent until a certain point is reached, when this instinctive muscular resistance occurs. This resistance (muscular spasm) is reflex and involuntary, being wholly beyond the control of the patient. It is not modified by large doses of opium or chloral, and it is only annulled by the anæsthesia of ether or chloroform. It is progressive, increasing in untreated cases until, sometimes, ankylosis is simulated. It produces the various deformities of the articulation and is accompanied by a specific muscular atrophy, not due to simple inertia. This "reflex muscular spasm," as well as the muscular atrophy, is a distinct pathological expression of the disease. Together they present the essential phenomena which accompany nerve irritation, and the conditions which characterize the spasm place it under the head of a *tetanoid* spasm; a localized tetanus, so to speak, which is excited by intra-articular pressure, just as the same muscle is subject to the faradaic tetanus of Landois when influenced by the interrupted current.

As the spasm of true tetanus is modified or annulled

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* *Op. cit.*

† *Lectures on Diseases of the Nervous System*, Sydenham edition, 1877. ‡ *Ibid.* # *Ibid.*

|| *Clinical Lectures and Essays*, D. Appleton and Company, 1875, pp. 208, 209.

* *Op. cit.*

† *Pott's Disease: Its Pathology and Mechanical Treatment*, G. P. Putnam's Sons, 1879; *The Hysterical Element in Orthopædic Surgery*, G. P. Putnam's Sons, 1880; Lecture on the Pathology, Symptoms, and Diagnosis of Ankle-Joint Disease, *Annals of Anatomy and Surgery*, January, 1882; On the Principles of the Mechanical Treatment of Hip-Joint Disease, *New York Medical Journal*, November 23, 1889; What are the Indications for the Discontinuance of the Mechanical Treatment of Hip-Joint Disease? *New York Medical Journal*, November 28, 1891.

by chloroform, so is the spasm of the muscle in hip-joint disease; and as the spasm of tetanus returns after the effects of the chloroform have passed away, so it does in hip-joint disease; the reflex excitability of the muscle in hip-joint disease is increased, so it is in tetanus. In all important respects the analogy between the muscular conditions in tetanus and in hip-joint disease holds good. This spasm is tonic, it is persistent and unyielding. It does not vary under the conditions noted except that, if untreated, it becomes more and more pronounced as the osseous structures become more involved.

A brief definition of this reflex muscular condition may therefore be stated as follows:

An involuntary, tonic muscular contraction, tetanoid in character, having its origin in nerve irritation caused by intra-articular pressure. It is characterized by a specific muscular atrophy and a reduced faradaic reaction of the muscles affected. It is accompanied by a peculiarly persistent and resistive element, which yields only to ether or chloroform, and it is emphasized by an increased muscular excitability.

In a lecture on The Pathology, Symptoms, and Diagnosis of Ankle-joint Disease,* delivered at the New York Orthopædic Dispensary and Hospital on November 3, 1881, I used the following language: "If you flex and extend an inflamed ankle joint with osteitis, you will find in many cases a very considerable degree of movement. But before the normal limit is reached the muscles which oppose become suddenly *tetanized.*" I have never had occasion to question the accuracy of this statement of nineteen years ago.

And we need not look far for an explanation of these symptoms. It is generally conceded that hip-joint disease is an osteitis, that it has its origin in the epiphysis, and if we stop to consider that this epiphysis is a local centre of growth and development, supplied with nerve filaments from the three great nerve centres—the cerebral, the spinal, and the great sympathetic—as has been demonstrated by several eminent authors, Kölliker, Luschka, and Kobelt among them, we can readily see that the presence of a foreign body like the bacillus of tuberculosis would alone be capable of creating a nerve irritation, and that passive movement beyond a certain point would produce an intra-articular pressure which Nature would resent. This nerve irritation would also, I think, account for the muscular atrophy, for the reduced faradaic reaction, for the tetanoid character of the muscular spasm, and for the increased patellar tendon reflex—all of which are present, as a rule, both as early and late symptoms, especially of the tuberculous degeneration of the epiphysis. It is often difficult, however, to demonstrate the patellar tendon reflex in patients when the immobilizing treatment has kept the knee extended for a considerable length of time.

In whatever light this reflex spasm is regarded, one fact must be remembered. The universally acknowledged principle of immobilization in the treatment of hip-joint disease brings an additional element of confusion into the resulting conditions, for it can not do else than add to the muscular atrophy and disability of the limb, and make still more difficult the question as to when the joint is in a condition to resume its ordinary functional activity. To the recognized effects of the disease itself we must add that of prolonged disuse, bandaging, etc. The mechanical treatment produces an interference with the normal physiological processes of circulation and growth. A weakened member is thus added to the diseased and damaged joint and unnecessarily, I think, confuses us when we come to consider the problem of reestablishing, so far as possible, the normal relation of the affected limb and joint to the rest of the body.

(*To be concluded.*)

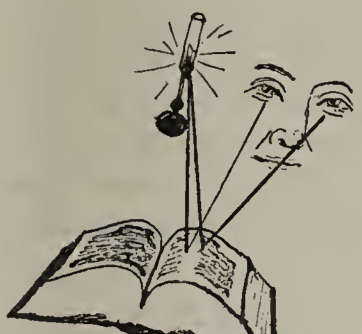
BOOKS ARE INJURIOUS TO THE EYES.*

By F. G. MURPHY, M. D.,
KANSAS CITY, MO.

In three ways the reading of books is injurious to the eyes: reading on a curved surface, one's inability to prevent light reflections from entering the eyes when reading from such a surface, and the long lines in most books that run the entire width of the pages.

The middle of the lines in most books is from an eighth of an inch to an inch nearer the eyes than the ends of the lines (Fig. 1). This necessitates a constant effort on the part of the ciliary muscles to keep the letters in focus on the retina while the muscles of convergence and divergence are alternately contracting and relaxing.

It is all the more tiresome when the reader has not perfect binocular vision. If he has poor vision in the right eye and reads altogether with the left one, he will not see plainly the words next to the binding when reading on the left page (Fig. 1). A flat page, such as that of a newspaper, is always more easily read (Fig. 2). Reading from a book is also made more difficult



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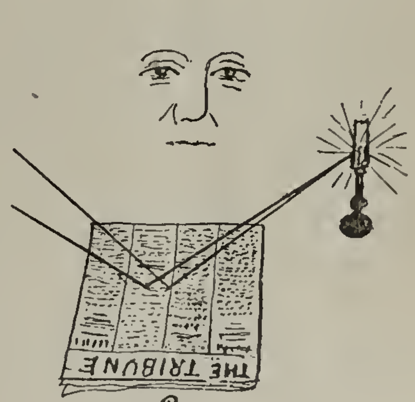

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* *Op. cit.*

* Read before the Kansas City Ophthalmological Society, November 13, 1899.

from the fact that both sides of the page are seldom equally lighted. Would it not be more restful to the eyes if the lines in books were to run parallel to the binding instead of nearly at right angles to it, so that all parts of the lines would be at an equal distance from the eyes and be equally lighted?

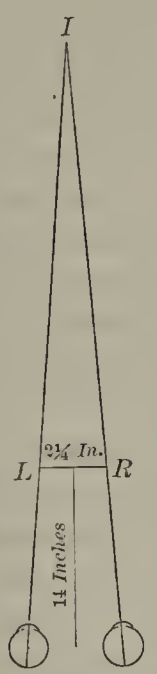
As books are now made, it is nearly impossible to prevent light reflections from entering the eyes. One can not look upon a curved surface of any length without the light which shines upon it being reflected to some extent into the eyes.

To read a book, it is necessary to have the light come as much as possible from behind the reader, who holds the book slightly to one side. Then, as the angle of reflection is equal to the angle of incidence, the reader will unavoidably have the light from nearly the centre of the page reflected in his eyes (Fig. 1). If it is a newspaper, which is nearly a flat surface, that is being read, it will not be necessary to have the light come so much from behind, as the entire sheet can be illuminated when the light is at either side without any part of it being shaded (Fig. 2). The source of illumination being at the side, the light reflections necessarily all pass to the opposite side of the reader's head, the angle of reflection being equal to the angle of incidence.

In going through a passenger train one may at any time observe that the passengers who read books have their backs turned more to the windows than do those who read newspapers.

In order to have the page of a book perfectly lighted it is necessary to have the light come from nearly in front or from behind the reader. In my opinion, the arrangement of the desks in the public schools, so that the light may come in at the left side, is not altogether satisfactory. If the student is facing the light and has a shade over his eyes, so that the light from the window will not directly enter the eyes, his book will be perfectly lighted, and no reflections from it will enter the eyes, provided the light does not strike the book at a greater angle than seventy-five or eighty degrees; and yet to compel students to wear shades would hardly be practicable. There is but one way in which the curved lines may be straightened and the book well lighted, and that is by having the lines printed parallel with the binding. There would be no such thing as a curved line then, and the book could be lighted perfectly from the side.

In my opinion, the great width of reading columns has also much to do with tiring the ocular muscles. A column that is of less width than the pupillary distance is certainly more easily read than one that is wider. In Figs. 3, 4, and 5 the letter I represents infinity and L and R the distance (two inches and a quarter) between rays of light fourteen inches from the eyes. In reading a column two inches and a quarter in width there is not much strain on the external recti muscles. When the first word in each line is read at fourteen inches, the left eye is not turned farther to the left (L in Fig. 4) than it would be to look at the distant object I, and the right eye would be turned no farther to the right when the last word of each line was read than it would be when at infinity (R in Fig. 5).



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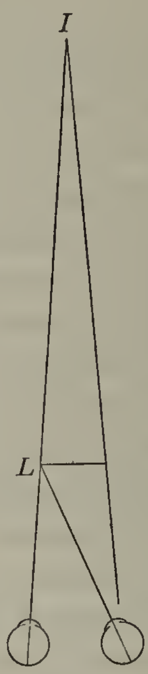

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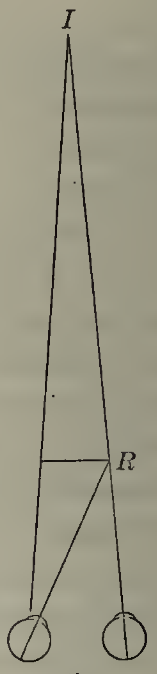

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When the lines are longer than the pupillary distance the reader will follow the lines with his head to relieve the external recti muscles. If, in reading a very long line, the head is not turned, the first word of each line would be much nearer the left eye than the right eye and the last word would be nearer the right eye than the left. The result is a smaller image in the eye farthest from the word. The eye soon tires under these conditions unless assisted by movements of the head, whereas, if the lines were shorter than the pupillary distance, the image in each eye would be practically of the same size, the muscles of accommodation would not be so rigorously taxed, and both the internal and external recti muscles would be greatly relieved.

302 ALTMAN BUILDING.

ANKYLOSTOMIASIS IN PUERTO RICO.*

BY LIEUTENANT BAILEY K. ASHFORD,
ASSISTANT SURGEON, U. S. ARMY.

I HAVE the honor to report upon twenty cases of the severe anæmia commonly seen among the poor of this island. One of the first observations made by professional men here is the prevalence of anæmia, especially among the poor. This is at first attributed usually to starvation or poor food, then to malaria, and then to the "climate." Through the kindness of the physicians of Ponce I am able to state something as to the mode of treatment adopted up to this time. Some have observed that the ignorant peon treated himself by purging, with beneficial effects for a time and a relapse to previous conditions soon afterward. Iron and arsenic have been prescribed largely, but with little benefit. Some physicians have frankly declared it beyond their power to cope with the disease, which they regarded as a pernicious, progressive anæmia of obscure origin. The stools had been examined, but, no worms being evident, this, as a cause, was dismissed. I was led to examine the fæces for the ova of *Ankylostoma duodenale,* and found them in great numbers. Soon after, a large dose of thymol brought away the parasites, male and female. No sooner had I stated my results to the physicians of this city than they agreed as to the diagnosis and verified the parasite and its eggs. Their testimony is as follows:

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* Published by permission of the surgeon-general of the army.

1. This disease is the most destructive and general disease of Puerto Rico.
2. It is found typically and very frequently among the poor and badly fed.
3. Most cases are similar.
4. Bad food and bad hygiene are responsible for much of its power for evil.
5. Blood foods have never exercised more than a temporary influence on the course of this disease.
6. Improvement follows purgation.
7. Up to this time the existence of this parasite had not been proved on this island, or, if proved, not within their knowledge.

In studying this disease I have taken twenty cases which I considered typical of "Puerto Rican anæmia," or "tropical chlorosis." These cases were selected from the provisional field hospital for indigent and sick Puerto Ricans, established after the flood of August 10, 1899, in this city. Although the histories of these cases are inclosed, I should like to refer to such points as seem to me interesting and of frequent occurrence in this disease.

1. *The Family History.*—Most patients give a history of deaths in the family from a like disease. At times this history is truly appalling and casts a light on the extent of the infection among the people. Many claim the deaths to have been due to "malaria" or "diarrhœa" or "obscure fever." Of course, this matter is problematical, but it is fair to suppose, inasmuch as the disease is often marked by irregular fever, with intermissions, that their diagnoses may be questioned, and to recollect that our own physicians have in the past placed on malaria responsibilities which do not belong to it. But questions as to chills are extremely unsatisfactory. I know there is much malaria here in the lowlands. I have followed such cases through their course, but the testimony of local physicians coincides with mine, that malarial organisms in the blood are not so often seen as would be supposed. Chills, then, are not so frequent; there are few "ague cakes"; the pallor is not that of malaria, and the scleræ are not icteric. The most suggestive fact outside of blood examination is that the cases come from the mountains and the valleys; some of the very worst cases I have seen came from highly salubrious mountain districts. Nevertheless, I hesitate to affirm that many cases of malarial cachexias do not exist to swell the sum of anæmics here.

2. *The Previous History of the Patient.*—The diet is a powerful factor in turning the scale against the unhappy victim of ankylostomiasis. Rightly the physicians here quote its influence. Personally, I have eaten and slept in all parts of this island, not alone on the frequented roads, but in those rarely visited by strangers, and can submit my testimony to that quoted in support of this influence. The relation of the daily life among the working classes has been confirmed in talking with many owners of sugar and coffee plantations and their employees. They rise at from 4 to 6 A. M. Some take a little black coffee, some boiled water and sugar, some nothing. They work till eleven, when they breakfast on about four ounces of codfish and a few pieces of plantain. They return to work at one and continue till 5 P. M. Dinner is composed of rice and beans; some have only boiled rice with lard, and some boiled rice alone. It may be mentioned that they get plenty of bad rum and some bad wine. This seems a slight enough diet, but the hurricane deprived them of even this, and the sick poor came drifting down on Ponce. I believe it not probable that those degraded to the level of people whose life is bounded by a tropical plantation, enjoying little beyond the cutting of cane and picking of coffee, can have a high standard of personal cleanliness, and, as a fact, bathing is not often practised. Fæces are distributed over the earth wherever the individual happens to be while at work, or in a little shack when at home, but directly on the ground always. Indeed, fæces pollute their very houses. Ponce is a town of perhaps forty thousand inhabitants, yet it has no sewerage and is in the lowlands near the sea. Closets and kitchens are in conjunction in many houses. The water soon takes up its quota of whatever is noxious. Those who are clean in their habits, and the educated classes are a most cleanly people, are polluted by the filth of the poor and ignorant. The configuration of this island is one of steep mountains and deep ravines, with broad plains near the sea. Heavy rains wash the larvæ from each fæcal deposit into these watercourses, and this muddy water is probably one source of contamination. Contaminated earth on the hands of laborers is another; fouled garden is another. The larvæ have not yet been demonstrated in the water or mud. The drinking water of nearly all well-to-do people is filtered, and in this class we do not find so great a preponderance of this disease.

3. *The Subjective Symptoms.*—It is difficult to obtain a history of the disease from its inception, for many have it from infancy. Generally it is possible to obtain some such history as this: A variable appetite, some nausea and vomiting, pain in epigastrium, either constipation or diarrhœa (or these may alternate),

sometimes dysentery; swellings of the feet and ankles, no loss of weight, sleeplessness, restlessness, tinnitus aurium, giddiness, faintness, severe headache, palpitation of the heart, progressive debility; little perspiration, but kidneys active; fever sometimes, but not chills. I have not been able to get a history of geophagism nor of intestinal hæmorrhage described by some authors. Sometimes the patients improve for a time after medication, but not permanently.

4. *Objective Symptoms.*—Pallor: This is divided into three classes by a prominent physician, but I can not see that it has reference to more than the individual color of the patient, whatever that may be, irrespective of the disease. The conjunctivæ, lips, tongue, gums, nails, and cheeks are in some cases perfectly pallid, the mucous membranes especially being of a deathly white. The skin is generally a pasty yellow, a dirty brownish-gray, or a grayish-white. Expression: A passive expression is often seen, and its peculiar character is heightened by puffiness of the eyes and bloating of the face. Œdema: This is simply the usual accompaniment of severe anæmia. Practically every variety is seen, the chief being, in order of importance—œdema of the feet and ankles, œdema of the face, ascites, and œdema of the scrotum. Hypostatic congestion of the lungs exists often. The important point is that with this disease there may be emaciation. This has not been present often in my cases; on the contrary, the patients are apparently well nourished. Anæmic ulcers are sometimes seen on the legs and an incorrect accusation of syphilis may be made. Corneal ulcers are at times seen. One of my cases presented corneal ulcers of both eyes. Respiratory symptoms: Generally none from this disease save in increased rapidity of breathing from anæmia, serous accumulations, or hypostatic congestions. Liver: No constant symptom. Spleen: No constant symptom. Heart: These symptoms are very aggravated; signs of a pernicious secondary anæmia. Pulsating vessels: Both jugulars, superficial veins of the arm, and vessels about the root of the neck and heart in severe cases, with greatly dilated heart; pulsating suprasternal and supraclavicular regions and diffused pulsations in the anterior thoracic wall. All kinds of deductions might be made by a careless observer. Hæmic murmurs are almost constantly present, and are in many cases heard in the veins of the neck.

The urine: No albumin is found and the specific gravity is constantly low. The pulse is weak, rapid, soft, and compressible.

The blood: Attention is invited to the accompanying summary of blood examinations. The following deductions are drawn:

1. A severe anæmia, falling as low as that of Addison's anæmia in count of red cells in some cases.

2. A very low hæmoglobin average and a very low color index.

3. A marked eosinophilia in some cases. Forty per cent. reached in one case. This follows the observation of Neusser.

4. No leucocytosis common to the disease itself. Leucocytosis recorded is always apparently due to complications, as noted.

5. Frequent presence of normoblasts, and in some cases megaloblasts, but never a majority of megaloblasts.

6. Poikilocytosis common. Manson denies this.

7. Utter unreliability of blood foods without removal of the cause, the ankylostoma. This blood examination was the first line of research taken up, and, as soon as anæmia was proved, the patient was given blood tonics, with temporary supporting treatment suited to the individual case, with the idea that the patient might be carried along until the true cause could be discovered. Of course, now, all treatment has been substituted by anthelminthics, chiefly male fern and thymol, and the blood and heart tonics will be again tried when the eggs have disappeared from the fæces. I was led to examine the stools carefully from the high eosinophile count, and it is certainly evident that trichinosis has a rival for high counts in ankylostomiasis.

The ankylostoma was found in all cases save one, a case of tuberculosis pure and simple. This patient was chosen to represent a contrast, and I think he does. There is true leucocytosis, and the eosinophiles are not much in evidence. Moreover, the red cell count is much higher than all the others, as is the hæmoglobin record. In calling attention to this infection we enter upon a large field. The histories of this disease have been made up to show what percentage of the people have the disease in certain countries: Twenty-five per cent. in Egypt, twenty per cent. in Maitland, fifty-two per cent. in Madras; thirteen per cent. in Kioto, Japan; but no percentage can be cited as yet for this island. Dr. B. Scheube, of Greiz, speaks in his work of its existing in the Antilles, but no island is specified, nor is the extent of the disease stated. From my own observation, and from the opinions of the resident physicians of the island, I believe it to be widespread and destructive. Only twenty cases have been examined, yet all, save one, have given me the ova of this parasite in large numbers. As the twenty cases were chosen at random from hundreds more just like them clinically, and as the one exception noted was chosen only for contrast, I am convinced that further investigation will show that the disease has killed its hundreds, and that it is curable and preventable. The proof of its prevalence lies naturally in the hands of all scientific physicians of this island. I can not further judge than from a short experience and the positive evidence of nineteen cases submitted.

Manson states that seventy-five per cent. of the people of India in certain localities are infected. Williams quotes fifty-two per cent. in Madras. Griesinger, in Egypt, quotes twenty-five per cent. B. Scheube, thirteen per cent. in Kioto, Japan. A glance at its geographical distribution is appalling. Egypt is so full of it that it is known as Egyptian chlorosis and forms the great basis for rejection of recruits for the army. The French, of the French Antilles, call it *cachexie aqueuse* and recognize its full importance; and literature is full of its ravages in South America. Thornhill regards it as of greater importance in Ceylon than cholera.

There is in Puerto Rico a dense population in a small country. In a space of about a hundred miles by sixty we have probably over a million people. Of the working class it can not be denied that a large percentage have anæmia, and, should the future verify my

Schedule of Blood Examinations.

Date.	Current number	Red cells.	Hæmoglobin.	White cells.	Percentage of polymorphonuclear leucocytes.	Percentage of small lymphocytes.	Percentage of small lymphocytes.	Percentage of eosinophiles.	Normoblasts per cubic millimetre.	Megaloblasts per cubic millimetre.	Remarks.
November 4th..	1	1,530,116	Per cent. 20	6,800	65	21	9	5	26	13	Poikilocytosis. Polychromatophilia, many microcytes and macrocytes. Treatment: Digitalis and pepto-mangan. Recount, November 23, 1899: Hæmoglobin, 16 per cent.; red cells, 1,880,000.
November 3d...	2	697,776	20	7,960	59	17	15	9	144	46	Poikilocytosis. Polychromatophilia, many macrocytes and microcytes. Treatment: Pil. ferri, quin. et strych. and pil. arsenic. Recount, November 23, 1899: Hæmoglobin, 23.5 per cent.; reds, 2,664,440.
November 4th..	3	1,533,112	22	2,000	64	22	8	6	8	0	Poikilocytosis. No rouleaux. Treatment: Digitalis and pepto-mangan. Recount, November 23, 1899: Hæmoglobin, 23 per cent.; reds, 1,973,328.
November 5th..	4	1,200,000	15	4,200	64	23.4	6	6.6	109	8	Poikilocytosis. Polychromatophilia. Treatment: Digitalis, syrup. ferri iodidi. Recount, November 23, 1899: Hæmoglobin, 17.5 per cent ; reds, 801,104.
November 6th..	5	1,484,440	10	6,000	64	24	8	4	12	0	Poikilocytosis. Slight tendency to rouleaux formation; macrocytes and microcytes, latter predominate over former. Recount, November 23, 1899: Hæmoglobin, 14 per cent.; reds, 687,776.
November 6th..	6	2,193,328	23	8,800	65	26	8	1¼	123	35	Poikilocytosis. No tendency to rouleaux formation. Treatment: Digitalis, pil. ferri, quin. et strych.
November 7th..	7	1,633,328	17	5,600	60	23	5	12	11	0	Poikilocytosis. Many macrocytes and microcytes; slight rouleaux formation; marked chromatophilia. Treatment: Digitalis, liq. potas. arsenitis in increasing doses to gtt. to 5 t. i. d.
November 7th..	8	2,064,664	23	4,800	74	17	6	3	28	0	Poikilocytosis. Rouleaux formation good. Treatment: Pil. ferri, quin. et strych., and digitalis. Recount, November 23, 1899: Hæmoglobin, 31 per cent.; reds, 3,084,440.
November 7th..	9	1,271,104	14	7,800	60	17	6	17	30	15	Has elephantiasis Arabum, but I can not identify the filaria as yet. Microcytes predominate over macrocytes. Good rouleaux formation. Treatment: Pepto-mangan. Recount, November 23, 1899: Hæmoglobin, 24 per cent.; reds, 2,520,000.
November 7th..	10	1,600,000	17	1,500	72	20	4	4	6	0	Poikilocytosis. Recount, November 23, 1899: Hæmoglobin, 13 per cent.; reds, 668,888.
November 8th..	11	1,800,000	25	4,600	69	22	7	2	9	0	Poikilocytosis.
November 8th..	12	2,266,656	30	7,680	52	26	12	10	0	0	
November 9th..	13	1,268,888	20	6,800	63	17	7	13	0	0	Poikilocytosis. Rouleaux formation good.
November 9th..	14	2,440,000	25	11,000	50	10	9	31	0	0	Poikilocytosis. Rouleaux formation slight; has abscess of liver.
November 9th..	15	2,353,328	17	12,700	73	17	4	6	0	0	Poikilocytosis. Rouleaux.
November 9th..	16	2,934,444	. .	5,200	72	20	5	3	10	10	Tertian malarial parasites found. Rouleaux good.
November 10th.	17	2,140,000	23½	18,000	40	12	8	40	36	0	Poikilocytosis. Rouleaux good. I believe this man to have been suffering from pneumonia at time of examination, although the differential seems strange.
November 20th.	18	3,524,440	55	14,800	88	9	3	⅙	0	0	Only case not presenting ankylostomes. Has tuberculosis.
November 12th.	19	Unknown.	30	9,000	60	16	10	10	125		Poikilocytosis. Rouleaux formation good.
November 20th.	20	1,560,000	16	2,400	72	10	5	13	0	0	

suspicion, means are at hand to increase not only the well-being of those now suffering, but to insure to the owner of large haciendas of coffee and sugar a better class of labor; to insure to the army protection from the invaliding from anæmia of such troops as are enlisted here; to insure protection against the disease to our American troops; to relieve the State and the hospitals here from the expense of caring for a large number of anæmics who are now slowly dragging on to a fatal end. Perhaps our own sick reports will unfold some additional facts. I mention here only such possibilities as have occurred to my mind; but it is a significant fact that, though it is present in Germany, Scheube notes that it is confined to a few cases. In other words, it appears to assume only such proportions as a country will allow it to assume. I repeat, I have no certain knowledge of the proportions it has assumed here. I have been able only to call attention to what I consider to be its extensive prevalence, and I can not quote any full experience from treatment. I have given thymol in several cases with the always easily demonstrated presence of the parasite. From the exceeding kindness and the scientific spirit shown by the local doctors, I can not doubt that it will be but a short time before measures will be taken, if there is sufficient extent of the disease found, to alleviate the conditions. I therefore respectfully submit with this report a photograph of my cases, their detailed histories, specimens of the eggs and parasites in four-per-cent. formalin solution, and various preparations of stained and unstained blood.* I shall not lengthen this paper by any description of a parasite so well known and so fully described by the professor of helminthology at the Army Medical School, nor shall I make further remark on the history of the disease, its evident prophylaxis and simple cure, until I can call to my aid a more extensive familiarity with it.

A FEW EXPERIMENTS IN TRANSFUSION OF COMPLETE BLOOD.

By A. DAVIS HARD, M. D.,
WENTWORTH, S. D.,
UNIVERSITY OF MICHIGAN, 1883; JEFFERSON COLLEGE, 1884.

THE essential properties of all vital tissues are derived from inherent tendencies peculiar to the mother cells from which such tissues are generated and afterward kept in repair.

This being true, the degree of self-sustaining potentiality and natural resistance ability for combating destructive influences should compare favorably with such properties found in their generic cell source.

It is not dependent upon the absolute correctness in detail of the above assumption that protoplasmic cells be taken bodily in a completed form from the lymph or chyle, and as such become, by some natural process of selection, incorporated into different living tissues of the body. This theory has many advocates, however, and may be largely correct, yet we know that in many instances the cell properties, apparently carried over, result more or less from modification of environments, or from some ptomaine or toxine occurring as a product of functional activity, or from deleterious collections of dead cells undergoing retrograde metamorphosis, or from prearranged functional augmentation by self-produced natural stimuli. Be these as they may, we know that peculiar vital tendencies follow migrating cells into whatever location they may find a proliferating lodgment.

The application of this principle to the beneficent modification of pathological conditions has been termed by most modern writers cell therapy and serum therapy.

The names are new, but the essential features were foreshadowed by the ancient Romans when they drank lions' blood to make them fierce in battle, and by the Athenian mothers who gave their infants the milk of foxes to make them crafty.

But men of deep thought, whose judgment commands respect because of long and careful study, have called in question the correctness of the quite generally accepted theory of germ and cell causation of physiological and pathological deviations, and have, not without some show of reason, asserted that cause and effect have not been correctly differentiated by enthusiastic advocates of newly promulgated theories based on facts which may be common to both.

The investigations of the writer, which are here described but briefly, and which were necessarily not scientifically exact or complete, were made simply for personal gratification of a longing after convincing knowledge, and may serve no other purpose, unless it may be as a pointer toward more perfect work in the hands of others along these lines.

I shall not attempt to record the indefinite results of a long series of previous dietetic experiments made to throw light on the proper food for man as designed by his Creator. I have abandoned the task involved in the solution of that question, and yet a retrospective contemplation of that series of tests, and of the recorded knowledge of others, fails to disclose any great burst of conquering energy on the part of any exclusive vegetarian.

The eaters of dark meat have furnished the world with its men of great renown. No vegetarian ever did the deeds of a Napoleon or a Dewey or a Hobson, or penned the poetic scintillations of a Shakespeare or a Longfellow or a Holmes. Such men derive their energy-giving nitrogen at second hand from the soil.

But to my task.

My first series of experiments was made to determine the effect on natural temperature produced by heterogeneous transfusions of complete blood.

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* These were sent to the Army Medical Museum.

Experiment No. 1.—An ounce of complete blood taken from the carotid artery of a chicken was introduced into the venous circulation of a large rabbit. Previous to the transfusion the temperature of the chick was found to be 102° F. and that of the rabbit 97° F. Twenty-four hours after transfusion the temperature of the rabbit was 100° F., three days subsequently 99° +, and normal temperature was not again attained until the end of the seventeenth day. No other deviations from normal health could be discovered during that period of time.

Experiment No. 2.—A fourth of an ounce of sparrow's blood was introduced into the veins of a one-third-grown guinea-pig. Previous to transfusion the temperature of the sparrow was found to be 104° F. and that of the pig 97.5° F. Twenty-four hours after transfusion the temperature of the pig was 101° +, and three days after it was 99.5°. The temperature gradually fell to normal, reaching that point on the twelfth day after the transfusion.

Experiment No. 3.—An ounce of blood taken from an eight-pound land turtle was introduced into the venous circulation of a full-grown guinea-pig. The previous temperature of the turtle could not be accurately ascertained, but was probably about 53° F.; that of the pig was 99° F. Twenty-four hours after transfusion the pig's temperature was 84°, and three days after it was 90°. At the end of eight days the pig's temperature was again found to be 99°, but slight variations from 97° to 100° were found during the following four days, due probably to some complication, as the animal was restless and not inclined to eat.

My second series of experiments was made upon myself in order to observe subjective as well as objective symptoms.

Experiment No. 1.—Four ounces of blood taken from a vigorous yearling goat were introduced into my venous circulation *via* the median basilic vein with aseptic precautions. No temperature tests were intended in these experiments. Previous to transfusion an average of six careful blood counts showed that my blood contained: Red blood-corpuscles to the cubic millimetre, 4,650,000; white blood-corpuscles to the cubic millimetre, 5,800. Twenty-four hours after transfusion the average was: Red blood-corpuscles to the cubic millimetre, 6,500,000; white blood-corpuscles to the cubic millimetre, 8,000.

Poikilocytosis was quite marked, and hæmoglobin was increased fully two per cent., as shown by Fleischl's hæmometer.

During the twenty-four hours following the transfusion 2,400 c. c. of urine were passed. It was dark-colored, strongly acid, specific gravity 1.025, and had the odor of violets. There were no albumin, sugar, or tube casts. Urea was slightly in excess, a few blood-corpuscles were present, and bile pigments were in evidence. Bowels became constipated and appetite excessive.

Subjectively, I noticed a peculiar mental acuity and facility of thought processes, accompanied by undue exuberance of spirits of an optimistic nature. I was troubled with insomnia for three days after transfusion. The pulse was accentuated and the second sound of the heart was sharp and well defined. Slight cephalic fullness and tinnitus aurium were constant for about a week. No effects were noticeable at the end of nine days.

Experiment No. 2.—Allowing two weeks to intervene for full restoration of normal conditions, I caused four ounces of blood taken from a healthy young mule to be introduced into my venous system as before.

My average blood count previous to transfusion was: Red blood-corpuscles to the cubic millimetre, 5,000,000; white blood-corpuscles to the cubic millimetre, 5,500. Twenty-four hours after transfusion the blood count was: Red blood-corpuscles to the cubic millimetre, 6,250,000; white blood-corpuscles to the cubic millimetre, 8,500. Urine for twenty-four hours after transfusion was 2,250 cubic centimetres, dark-colored, strongly acid, and specific gravity 1.030.

Both albumin and sugar in small amounts were present and urea was in excess. Oxalates were plentiful after the urine had stood six hours and hippuric acid was present. A few crenated blood-corpuscles were noticed on every slide and the coloring matter seemed to be mostly hæmoglobin.

The same subjective symptoms were noticed as appeared in the former experiment, except that the head symptoms were not so marked and the general effects were more prolonged.

Insomnia was less, probably due to lack of tinnitus as severe as before, and heart beat seemed but little fuller and stronger than normal. Normal conditions were finally reached after a slow declination extending through twenty-two days.

Following these experiments my assistant, Mr. C. H. Wyman, of Omaha, Nebraska, submitted to eight transfusions, one every four days, in alternate arms of four ounces of mule blood, with the following general results: At the end of thirty days there was an increase of eight per cent. in red blood-corpuscles, twelve per cent. in white corpuscles, and six per cent. in body weight.

A general exaltation of all bodily functions was observed. Constipation and insomnia gave a little trouble, and a slight blowing sound followed the second sound of the heart during the first week. A commencing furuncle on the back of his neck promptly recovered without suppuration, and the transfusion wounds healed rapidly. The urine varied but little from that in the previous experiments, except that the abnormal conditions became less marked as the transfusions progressed.

Therapeutical Notes.

Formulæ for the Administration of Urethane.—The *Journal de médecine de Paris* for January 21st says that the following formulæ are recommended by Huchard:

1. A mixture:

℞ Distilled water	1,500 grains;
Urethane	300 "

M.

From three to four coffeespoonfuls to be taken in the evening in a cup of infusion of orange leaves.

2. Draught:

℞ Distilled water of limes	600 grains;
Syrup of orange flowers	300 "
Urethane from	45 to 60 "

M.

To be taken as a draught at bedtime.

3. For young children:

℞ Distilled water of limes, Orange-flower water, Syrup,	of each. 300 grains;
Urethane	3 "

M.

A dessertspoonful every two hours to calm excitement in febrile conditions.

Sodium and Potassium Iodides as Hæmostatics.—Chelmonski (*Deutsches Archiv für klinische Medicin*, lxiii, 5, 6; *Deutsche Medizinal-Zeitung*, December 18, 1899) recommends the iodides in hæmorrhages with increased blood pressure. In many cases, he says, as has been shown by Lapicque and Sée, the pressure and the overactivity of the heart are reduced in an hour or two. The iodide should be given in doses of from three to five grains, in a glass of milk, twice a day. The author has seen brilliant results from this treatment in a case of hæmoptysis in which all other measures had proved ineffective, and in a case of epistaxis in a patient with aortic aneurysm.

The Posology of Dionine.—*Presse médicale* for February 28th gives the following formulæ for the administration of dionine, which is said to be an excellent calmative for cough, having the same indications as codeine:

1.

℞ Dionine	7½ grains;
Syrup	1,500 "

M. A coffeespoonful at bedtime.

2.

℞ Dionine	4½ grains;

Licorice powder, q. s. to make 30 pilules.

M. Three or four pilules during the day, or two or three pilules before going to bed.

3. For children, the following syrup is recommended:

℞ Dionine	1½ grain;
Syrup	1,500 grains.

M. A coffeespoonful in the evening, or half a coffeespoonful twice or three times during the day.

How to Prescribe Salicylate of Sodium with Antipyrine.—The *Revue médicale de Normandie* for February 25th, citing the *Revue interne de médecine et de chirurgie* of unspecified date, says that often when the diagnosis between generalized febrile articular rheumatism and pseudo-rheumatic infection is obscure, a combination of sodium salicylate with antipyrine is useful. These drugs are incompatible in the dry state, whence the following formula is recommended:

℞ Salicylate of sodium	30, 60, or 90 grains;
Antipyrine	30 or 60 "
Alcoholate of lemon peel	5 to 10 drops;
Distilled water	1,800 grains.

M.

A soupspoonful every hour in half a glassful of Vichy water, or in milk and Vichy. The daily amount of the salicylate should be thirty grains for those below six years of age, sixty grains for those from six to ten years, and from seventy-five to ninety grains for those older. This quantity may be continued for fifteen days. At the end of that time, after a marked fall of temperature, the drug may be continued in a weak daily dose—sixty grains—for adults for fifteen days after the disappearance of the articular pains. The antipyrine should never exceed a daily dose of sixty grains, and should be associated with a milk regimen.

"Alcoolature de zeste de citron," "sirop de limons," has been rejected as incompatible, owing to the citric acid causing decomposition of the salicylate.

For Acute Eczema.—Dr. B. C. Patterson (*China Medical Missionary Journal*, January) says that buckwheat flour will be found most useful for acute eczemas and for poultices. For eczema in the wet stage she recommends the application of one part of zinc oxide to twelve or eighteen parts of buckwheat flour. A poultice of this flour, with a little carron oil added, she affirms to be a most soothing application for inflamed ulcers and for irritable eczema.

Sir Andrew Clark's Treatment of Chlorosis.—*Pædiatrics* for January, on the authority of the *Practitioner*, lxiii, 359, says that the late Sir Andrew Clark, in addition to careful attention to diet and a tepid sponge bath followed by brisk toweling night and morning, used to prescribe:

℞ Sulphate of iron	24 grains;
Sulphate of magnesium	6 drachms;
Aromatic sulphuric acid	1 drachm;
Tincture of ginger	2 drachms.
Compound infusion of gentian or quassia	q. s. to 8 ounces.

M.

One sixth part twice daily, about eleven and six o'clock. Occasionally this acid mixture caused sickness, dried the skin, and was otherwise ill borne. In such cases he was wont to prescribe:

℞ Sulphate of iron	24 grains;
Bicarbonate of sodium	2 drachms;
Sulphate of sodium	6 "
Tincture of ginger	2 "
Spirits of chloroform	1 drachm;
Infusion of quassia	q. s. to 8 ounces.

M.

One sixth part twice daily at eleven and six o'clock.

Sometimes neither mixture agreed with the patient, in which case he prescribed a sulphate-of-iron pill with meals, and a saline aperient on first waking in the morning. By this plan Clark held that nine out of ten cases recovered in from one to three months, and by careful attention to the bowels, taking twice a week a pill composed of aloes, myrrh, and iron, the recovery probably would be permanent.

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THE PUBLIC CARE OF CHRONICALLY DISEASED CHILDREN IN THE UNITED STATES.

In our issue for March 31st we published an editorial on the Public Care of Chronically Diseased Children, summarizing an account by Madame A. Schabanoff of what was being done in this direction in Russia, as an example for the world at large. We were not then aware, and doubtless the majority of our readers were unaware, that the State of Minnesota had earned the credit of a move in this direction—viz., the enlightened policy of caring for its indigent crippled and deformed children. Our attention has been directed to an admirable paper by Dr. Arthur J. Gillette, read before the Minnesota Valley Medical Association at Mankato, December 5, 1899, and published in the *St. Paul Medical Journal* for February.

From this source, and from the *First Annual Report of the State Hospital for Crippled and Deformed Children in Charge of Board of Regents, University of Minnesota,* we learn that, "pursuant to the provisions of chapter 289, Laws of 1897, the Board of Regents has undertaken the labor of caring for crippled and deformed children as provided therein." Of the advantages of such a course we have spoken fully in our former editorial.

By the law of 1897, before referred to, the State of Minnesota appropriated five thousand dollars yearly for two years as an experiment toward solving the problem of State care of its indigent crippled children. The legislature was assured that these children would be cared for by physicians and surgeons free of charge, and Dr. Gillette relates how proud he was of the profession when guaranteeing this, knowing full well that the promise would be fulfilled, in which pardonable pride we must all surely be at one with him. The Board of Control of the City and County Hospital of St. Paul thereupon set apart a ward for the reception of such patients, supplying them with all the usual accommodations and services provided in hospitals save physician's attendance and mechanical appliances. For this accommodation and these services the Board of Regents paid the Board of Control $3.75 weekly for each child between two and twelve years of age, and $4.50 weekly for each child between twelve and sixteen years. The work was begun with the reception of the first patient on October 16, 1897. Between that date and December 1, 1898, thirty-five applications for admission had been received, of which twenty-eight had been granted, and twenty-six children had been received and treated at the hospital, while two cases of lateral spinal curvature had been dealt with outside. Among the cases cared for were hunchback, tuberculosis of joints, severe clubfoot, infantile paralysis, and spastic paralysis. The results attained, many of which are illustrated in Dr. Gillette's paper by photographs of the patient before and after operation, would appear to have fulfilled the highest expectations; yet the Board of Regents in its report is able to state that of the annual amount of $5,000 appropriated for this work "only the sum of $2,147.82 has been expended up to December 1, 1898" (in thirteen months and a half). "This amount is distributed as follows:

"Board of Control for hospital service	$1,984.56
Artificial limbs, braces, etc.	126.36
Printing, stationery, and postage...	36.90."

We do not think that any further words are necessary to enforce upon the profession and the authorities in all parts of the Union the desirability of the practical application of the principle of the public care of chronically diseased children.

PORTABLE INCINERATORS OF GARBAGE AND EXCREMENT.

Among the most enlightened and progressive of our sanitary officials are those of the city of Buffalo. To one of them, Dr. William G. Bissell, the bacteriologist of the board of health, we are indebted for a complete demonstration of the perfect efficiency of a certain apparatus in cremating garbage and excrement without spreading offensive odors or noxious emanations of any kind. In the February number of the *Buffalo Medical Journal* Dr. Bissell publishes his report of certain experiments in camp life made under his direction with incinerators constructed by the International Garbage and Crematory Company, of Buffalo. The apparatus bears a rough resemblance to a large cylinder stove. When it is in use to receive the dejecta as they are passed, it has placed in front of it two steps by means of which the person who makes use of it mounts to the seat, which is like that of an ordinary water-closet. When the cremation of its contents is to be effected, this seat is replaced by an iron cover. Under the receptacle, which is of heavy iron in a single piece, there is a fire box, and the arrangement of draughts is such that the vapors and gases that are driven off from the receptacle in the process of desiccating the contents pass over the fire and into the smoke pipe, and are either consumed or so altered before they reach the open air as to be wholly inoffensive.

The experiments in the use of this apparatus in military camps were conducted in National Guard camps in the State of New York last summer, and they were entirely satisfactory, although in two instances mismanagement led to comparative failure to secure freedom from odorous emanations. One of these failures was due to the contents of the receptacle boiling over and falling into the fire, in consequence of the capacity of the apparatus having been overtaxed before the work of incineration was begun; the other was the result of an act wholly foreign to the proper use of the machine, that, namely, of allowing urine to drop upon the iron cover. It was found that one of these incinerators for every forty men was amply sufficient to do away with all inconvenience in the matter of waiting, and in all instances the cremation, which was effected once in twenty-four hours, occupied not more than two hours when damp wood was the fuel employed, and only about an hour and a half when the wood was dry. As regards portability, it was found that twenty machines were readily conveyed on two ordinary truck wagons each drawn by a single team of horses, and the makers say that the size of the apparatus will bear such reduction as will render it still more portable.

The importance of such a system of disposing of garbage and excrement in camps can not be overestimated, and we hope to see it adopted in the army. It is easy to see, moreover, that in country dwellings where there is not a sufficient supply of running water with efficient drainage such an incinerator could be made to play a powerful part in insuring the salubrity of the place.

THE PHYSIOLOGICAL EFFECTS OF RHYTHMICAL VIBRATION.

The close connection between physical and physiological processes is becoming daily more and more evident. Rhythmical movement having been established as the essence of light, heat, electricity, etc., would naturally suggest itself as having some connection with the innermost processes of cellular life and with all the modifications and manifestations thereof—*e. g.*, nerve force, embryonal development, and so forth. The relation of physical laws to biological processes is a subject of profound interest and one which would well repay a more careful and systematic study than has hitherto been accorded to it. Such experiments, for instance, as that of the figures assumed on a plate of glass by a layer of sand when a violin bow is drawn down the edge of the glass, at once call to mind the idea of the segmentation of the yolk. The way in which a glass or a tuning fork will in its turn take up the dying vibrations of another glass or tuning fork in its vicinity, attuned to the same note—*i. e.*, when the number of the vibrations to the second in each of them is practically identical—has, we believe, been used to suggest the dynamic character of the action of drugs upon the human economy, and to explain the predilection of certain drugs for certain tissues, or, more properly speaking, the selective action of certain tissues whereby the vibratory influence of certain drugs is drawn primarily to themselves, only spreading thence to the whole organism in widening but weakening waves like those occasioned by a stone thrown into a pool.

We have been led to these reflections by the perusal of a suggestive paper on Vibration as a Hypnotic and Anæsthetic, which was read last year before the Mississippi State Medical Association by Dr. B. F. Ward, and published in its *Journal* for February. Dr. Ward relates the extraordinary case of a workman who, returning home tired, sat down to rest on the end of a crosstie of a railway track with his head bent forward and his elbows resting on his knees, intending to take only a short rest. He knew nothing until near day next morning, when he awoke, presumably in the recumbent position, with the sensations succeeding a natural sleep, feeling only a little chilled from the cool morning air. On attempting to rise, however, he discovered that there was something wrong with his left arm, and found that it was lying directly across the rail, and that a train had passed over it, crushing it to a pulp, a little above and including the elbow, but not entirely severing the skin. The arm was cold, and no train was in hearing in either direction, so that the man must have lain for a long time after the train had passed over it, where he had fallen parallel with the track, his arm lying across it. The man felt no pain whatever, and no shock, and his circulation was normal. He walked firmly and leisurely into town, holding the dead arm with his right hand, to Dr. Ward's, where it was amputated. There was no mark or contusion about the body or head, and not the slightest sign of cerebral concussion. The suspicion of drunkenness was entirely eliminated, not only by the absence of any indications thereof at the time, but also by the testimony of his fellow laborers that he was steady, sober, and a total abstainer.

The explanation of this case is found by Dr. Ward in the doctrine, supported, he says, by the facts collected in twenty years of observation and pertaining to quite a number of similar railroad casualties, that "when a man lies or sits on a railroad track in touch with rail or cross-tie, the rhythmic vibration communicated to the rails by the revolving car wheels, even at a great distance, slowly and surely soothes his nervous centres into a gentle somnolence which, as the vibratory wave steadily and uniformly increases in force with every revolution of the wheels, deepens gradually into narcosis and anæsthesia as profound as can be produced by chloroform or ether." The author cites in general support of the plausibility of this explanation the lulling effect of "rocking" upon an infant, and of the rhythmical nature of a crooning lullaby song, the murmur of a distant waterfall, or the patter of the rain upon the roof, and lastly the process of hypnotism, which consists of three factors, the first two of which, limitation of vision and fixing of attention, are merely methods of obtaining isolation of the nerve centres, while the monotonous vocal influences are vibratory in character.

From these considerations the author arrives at the conclusion that "narcosis and anæsthesia may be produced by vibratory force, and that the vibration, in order to effectually exert its specific force upon the nerve centres, must be uniform and rhythmic, and to reach its greatest intensity the vibratory wave must gradually and steadily increase in force." This leads naturally to the suggestion that "it would require no very exalted mechanical skill to construct a metallic operating table with wheels run by electricity against rails attached to the lower surface of the table, that would impart to the table, and to the subject thereon, a vibratory force exactly similar to that which the steel rail receives from the revolving wheel (of an approaching train) and equally potent, and that a perfect anæsthesia might thus be secured as free from danger or subsequent distress as the natural sleep of an infant or the peaceful slumber of a healthy man."

The suggestion, notwithstanding the author's expectation of its "provoking a smile of incredibility," seems to us one that it would be better to make actual trial of than to argue about, since it is of that practical character which permits of experimental verification or otherwise. It must not, however, be forgotten that a considerable number of persons under varying conditions would have to test its anæsthetic powers, for susceptibility to vibration would probably vary as much as, if not more than, to chloroform or ether inhalation.

Many other possible applications of this vibratory influence, some of which recall Dr. Mortimer Granville's nerve-vibration treatment, are suggested, and generally it might receive an expectant trial in all that class of cases suitable for hypnotic treatment or for electricity, massage, etc.; while even in certain forms of insanity, by its soothing power upon morbidly excited nerve centres, we might look hopefully for benefit from its application.

RABIES OCCURRING LONG AFTER A COURSE OF PASTEUR TREATMENT.

Skepticism as to the occasional lapse of a long period between the bite of a rabid animal, as well as overconfidence in the Pasteur protective inoculations, must be somewhat shaken by a case reported by Dr. Kritoff (*Archives des sciences biologiques de St.-Pétersbourg*, vii; *Lyon médical*, March 25th). It was that of a very aged peasant woman who was bitten on a finger on July 23, 1894. From the 28th of July to the 9th of August she underwent the Pasteur treatment at the Samara antirabietic station. On the 18th of October, 1897, she was admitted into a hospital with well-marked rabies, and died the next day. It was ascertained that in all probability there had been no fresh infection in her case.

THE USE OF INK IN SKIN DISEASES.

There is nothing new in the employment of ink as a topical application. Its use as an astringent has been recommended by Unna, and Dr. Leistikow (*Monatshefte für praktische Dermatologie*, xxix, 11; *Centralblat für Chirurgie*, March 31st) has more recently experimented with it in cases of exudative erythema, local pruritus, herpes progenitalis, eczema of the hands, and ulcers of the legs, using a solution containing from three to ten per cent. of tannin and from two to five per cent. of iron sulphate. He finds that it acts as a detergent, diminishes the secretion from ulcerated surfaces, dries up vesicles, gives rise to a healthy formation of epidermis, and allays itching.

THE AMERICAN MEDICAL ASSOCIATION.

Interest in the Atlantic City meeting is increasing as the time for it to be held draws near. Already the choice of a president for the ensuing year is the subject of thought with influential members of the association. Dr. Charles A. Wheaton, of St. Paul, who is now the first vice-president, seems to have many supporters, and we think the profession at large would be pleased to see him elected president.

THE CARE OF THE UMBILICAL STUMP.

The old-fashioned burnt rag smeared with oil has almost entirely given way in this part of the world to some absorbent and antiseptic powder. Dr. A. Martin, of Greifswald, however (*Berliner klinische Wochenschrift*, 1900, No. 8; *Centralblatt für Gynäkologie*, March 31st), prefers cauterization of the cut end after ligation with sterilized silk thread, a moist gauze compress being wound around the base of the stump to protect the abdominal skin from being burned.

THE CÆSAREAN OPERATION RENDERED NECESSARY BY VAGINAL FIXATION OF THE UTERUS.

That the ultimate results of vaginal fixation of the uterus may sometimes be serious is shown by a case reported by Dr. Kallmorgen (*Zeitschrift für Geburtshilfe und Gynäkologie*, xli, 2; *Centralblatt für Gynäkologie,* March 31st). It was that of a woman who, after having borne one child in an unassisted labor, submitted to the operation for the relief of retroflexion of the uterus. Two years and a half later she became pregnant for the second time, and in the seventh month there were such threatening symptoms of impending miscarriage as to call for her protracted rest in bed. At term labor came on with the long axis of the uterus running anteroposteriorly, the fœtus lying transversely. At the end of sixteen hours no progress had been made, and it was feared the posterior wall of the uterus would rupture. Consequently the Cæsarean operation was performed, and in its execution the anterior wall of the uterus was not seen at all, but the posterior wall was as thin as paper. The woman did well, but the author recommends the early induction of premature labor in such cases.

A COMMENDABLE JOURNALISTIC REFORM.

From the *St. Paul Medical Journal* for April we learn that the *Daily News* of St. Paul, Minnesota, has announced that it will print no advertisements relating to sexual or venereal diseases. We heartily indorse the encomium pronounced by our St. Paul medical contemporary, and trust that other reputable dailies in the United States will follow in its footsteps.

THE RENNIE PALMAR REFLEX.

In our issue for April 7th we referred to a palmar reflex described by Dr. George E. Rennie. A palmar reflex is also mentioned in Gould's *Medical Dictionary,* in the table of reflexes, and in Lippincott's *Medical Dictionary,* but this differs in every respect from that described by Dr. Rennie. It consists, not in a contraction of the palmaris brevis, but in "a contraction of the digital flexors," and is induced by "tickling of palm" instead of by pressure on the pisiform bone or by stroking of the hypothenar. The reflex described by Dr. Rennie seems to have been unnoticed hitherto, and undoubtedly warrants further investigation.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported for the two weeks ending April 7, 1900:

DISEASES.	Week ending Mar. 31.		Week ending Apr. 7.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	17	6	11	7
Scarlet fever	159	16	164	14
Cerebro-spinal meningitis	0	9	0	14
Measles	853	31	715	31
Diphtheria	253	37	240	32
Laryngeal diphtheria (croup)	16	8	22	15
Tuberculosis	219	171	327	207
Chicken-pox	27	0	23	0
Small-pox	1	0	0	0

Marine-Hospital Service Health Reports.—The following cases of small-pox, yellow fever, cholera, and plague were reported to the surgeon-general during the week ending April 7, 1900:

Small-pox—United States.

Mobile, Ala	Mar. 24–31	1 case.	
Jacksonville, Fla	Mar. 24–31	2 cases.	
Evansville, Ind	Mar. 24–31	5 "	
Wichita, Kansas	Mar. 24–31	8 "	
Covington, Ky	Mar. 24–31	12 "	1 death.
Lexington, Ky	Mar. 24–31	1 case.	
New Orleans, La	Mar. 24–31	64 cases,	21 deaths.
Boston, Mass	Mar. 24–31	1 case.	
Detroit, Mich	Mar. 24–31	4 cases.	
Omaha, Neb	Mar. 24–31	1 case.	
Catskill, N. M	Mar. 21	2 cases.	
Folsom, N. M	Mar. 21	5 "	
New York, N. Y	Mar. 24–31	1 case.	
Cleveland, Ohio	Mar. 24–31	17 cases.	
Salt Lake City, Utah	Mar. 24–31	1 case.	
Spokane, Wash	Mar. 24–31	1 "	

Small-pox—Foreign.

Liverpool, England	Mar. 10–17	1 case.	
London, England	Mar. 3–17	12 cases.	
Lyons, France	Mar. 3–10		2 deaths.
Rheims, France	Mar. 3–10		8 "
Gibraltar	Mar. 4–18	14 "	
Bombay, India	Feb. 27		263 "
Bombay, India	Feb. 27–Mar. 6		269 "
Calcutta, India	Feb. 10–24		26 "
Kurrachee, India	Feb. 18–Mar. 4	32 "	15 "
Yokohama, Japan	Feb. 24–Mar. 3	1 case.	
Seoul, Korea	Jan. 20–27	2 cases,	1 death.
Madrid, Spain	Mar. 3–17		22 deaths.

Yellow Fever.

Panama, Colombia	Mar. 7–14	7 cases.	
Havana, Cuba	Mar. 17–24	2 "	1 death.

Cholera.

Bombay, India	Feb. 20–Mar. 6		19 deaths
Calcutta, India	Feb. 10–24		130 "

Plague—Insular Possessions United States.

Honolulu, Hawaii	Mar. 10–17	2 cases,	1 death.

Plague—Foreign.

Aden, Arabia	Feb. 22–Mar. 10	22 cases,	13 deaths.
Bombay, India	Feb. 22–Mar. 6		1,468 "
Calcutta, India	Feb. 10–24		460 "
Kurrachee, India	Feb. 18–Mar. 4	92 "	73 "
Formosa, Japan	Jan. 1–Feb. 28	97 "	78 "

The Cartwright Lectures of the Alumni Association of the College of Physicians and Surgeons (School of Medicine of Columbia University) will be delivered in the building of the New York Academy of Medicine on the evenings of April 18th, 24th, and 26th, by Dr. John G. Curtis, on the subject of The Discovery of the Nerves and of their Function.

The Buffalo Academy of Medicine.—At the last meeting of the Section in Medicine, on Tuesday, April 10th, the order for the evening was as follows: Post Chicken-pox Nephritis, by Dr. Dewitt H. Sherman; The Treatment of Scarlet Fever, by Dr. Henry R. Hopkins, and Normal Saline Solution in Gastro-enteric Diseases of Children, by Dr. Irving M. Snow.

The Richmond Academy of Medicine and Surgery.—At the meeting of April 10th a discussion on The Scope of Microscopy was to be opened by Dr. H. S. McLean.

The St. Louis Medical Society of Missouri.—At the last regular meeting, on Saturday evening, the 7th inst., the following papers were presented for discussion: The True Interpretation of Sound as Applied to Physical

Diagnosis, by Dr. W. B. Outten, and The Nature of Some Epidermic Growths and their Treatment with Formalin, by Dr. M. F. Engman. Dr. G. W. Broome presented an interesting case and exhibited a specimen.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 31 to April 7, 1900:*

BEAL, HOWARD W., Acting Assistant Surgeon, United States Army, is assigned to temporary duty at the General Hospital, Presidio of San Francisco, awaiting transportation to the Philippines.

GARDNER, EDWIN F., Major and Surgeon, United States Army, is relieved as member of the general court martial convened at Fort Grant, Arizona.

MCLAUGHLIN, W. B., Acting Assistant Surgeon, United States Army, is granted leave of absence for one month, to take effect April 1st, with permission to visit the United States.

WILSON, RICHARD, Acting Assistant Surgeon, United States Army, is detailed as a member of the examining board appointed by Par. 1, S. O. 30, c. s., D. S. and P. P., *vice* CHURCH, JAMES R., First Lieutenant and Assistant Surgeon, United States Army, relieved.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending April 7, 1900:*

ARNOLD, W. F., Passed Assistant Surgeon. Detached from the Naval Hospital, Norfolk, Virginia, and granted leave of absence for three months.

CARPENTER, D. N., Passed Assistant Surgeon. Detached from the Boston Navy Yard and ordered to the Naval Hospital, Chelsea, Massachusetts, immediately.

COOK, F. C., Passed Assistant Surgeon. Detached from the *Wilmington* and ordered to proceed home by mail steamer.

COSTIGAN, G. D., Passed Assistant Surgeon. Detached from the Naval Hospital, Chelsea, Massachusetts, and ordered to the Boston Navy Yard, immediately.

ROSENBLEUTH, J. C., Passed Assistant Surgeon. Ordered to the *Wilmington*, sailing from New York, to join ship at Rio de Janeiro, Brazil.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the United States Marine-Hospital Service for the Seven Days ending April 5, 1900:*

ALTREE, G. H., Acting Assistant Surgeon. Granted leave of absence for three days.

ANDERSON, J. F., Assistant Surgeon. Relieved from duty at Barcelona, Spain, and directed to proceed to Marseilles, France, for duty.

BULLARD, JOHN T., Acting Assistant Surgeon. Granted leave of absence for sixty days, from April 3d.

CLARK, TALIAFERRO, Assistant Surgeon. On being relieved from duty at Tortugas Quarantine, to proceed to New York (Stapleton) and report to the medical officer in command for duty and assignment to quarters.

CORPUT, G. M., Assistant Surgeon. Upon being relieved from duty at Marseilles, France, to proceed to Washington.

DECKER, C. E., Assistant Surgeon. Granted leave of absence for twenty-nine days on account of sickness.

FOSTER, S. B., Acting Assistant Surgeon. Granted leave of absence for one month from April 6th.

GWYN, M. K., Assistant Surgeon. Relieved from duty at Chicago and directed to proceed to Louisville and assume command of the service.

MCMULLEN, JOHN, Assistant Surgeon. On being relieved from duty at Louisville, to proceed to Tortugas Quarantine and assume command of the service.

STONER, J. B., Passed Assistant Surgeon. Relieved from duty at Buffalo and directed to proceed to St. John, New Brunswick, for duty as medical inspector of immigrants.

VOGEL, C. W., Assistant Surgeon. Relieved from duty at New York (Stapleton) and directed to report to WILLIAMS, L. L., Surgeon, Immigration Station, New York, for duty.

WASDIN, EUGENE, Surgeon. To proceed to Buffalo and assume command of the service.

YOUNG, G. B., Passed Assistant Surgeon. Granted extension of leave of absence for two days on account of sickness.

Society Meetings for the Coming Week:

MONDAY, *April 16th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Connecticut, Medical Society; Chicago Medical Society.

TUESDAY, *April 17th:* New York Academy of Medicine (Section in General Medicine); Buffalo Academy of Medicine (Section in Pathology); Ogdensburgh, New York, Medical Association; Syracuse, New York, Academy of Medicine; Medical Society of the County of Kings, New York; Passaic, New York, County Medical Society (annual); Baltimore Academy of Medicine.

WEDNESDAY, *April 18th:* Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark); Windham, Connecticut, County Medical Society (annual—Plainfield); Middlesex, Massachusetts, South District Medical Society (annual—Lowell); Philadelphia County Medical Society.

THURSDAY, *April 19th:* New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Massachusetts, Society for Medical Improvement (private); Tolland, Connecticut, County Medical Society; Medical Society of City Hospital Alumni, St. Louis; Atlanta Society of Medicine.

FRIDAY, *April 20th:* New York Academy of Medicine (Section in Orthopædic Surgery); Clinical Society of the New York Post-graduate Medical School and Hospital; Baltimore Clinical Society; Chicago Gynæcological Society.

Births, Marriages, and Deaths.

Born.

LYON.—In New York, on Thursday, April 5th, to Dr. and Mrs. Palmer Heath Lyon, a son.

WOOD.—At the Palace, Havana, Cuba, on Thursday, March 29th, to Dr. and Mrs. Leonard Wood, a daughter.

Wuest.—In Brooklyn, on Tuesday, April 3d, to Dr. and Mrs. C. Wuest, a daughter.

Married.

Berwick—Clark.—In New Orleans, on Thursday, April 5th, Dr. Clarence Berwick, of St. Mary, Louisiana, and Miss Emmeline Elizabeth Clark.

Carrier—Adams.—In Port Jefferson, Long Island, on Tuesday, April 3d, Dr. John Carrier and Miss Edith Adams.

Geis—Pouch.—In Brooklyn, on Wednesday, April 4th, Dr. Norman Phillips Geis and Miss Mabel Pouch.

Keedy—Keedy.—In Baltimore, on Friday, March 30th, Dr. Samuel H. Keedy, of Hagerstown, Maryland, and Mrs. Julia D. Keedy.

Parker — Day.—In New York, on Wednesday, April 4th, Dr. Charles Thorndike Parker and Miss Susan de Forest Day.

Sandifer—Garner.—In Magnolia, Mississippi, on Wednesday, April 4th, Dr. H. W. Sandifer and Miss Dora Garner.

Woodcock—Townsend.—In Oakdale, Alabama, on Wednesday, April 4th, Dr. Burgett Woodcock, of Mobile, and Miss Irene Townsend.

Died.

Bird.—In Hyde Park, New York, on Tuesday, April 3d, Dr. J. Sterling Bird.

Camac.—In Philadelphia, on Tuesday, April 3d, Dr. William Camac, in the seventy-first year of his age.

Fifield.—In Providence, Rhode Island, on Monday, April 9th, Dr. Moses Fifield, in the seventy-seventh year of his age.

Folwell.—In New Orleans, on Saturday, March 31st, Dr. Joseph Nicholson Folwell, aged seventy-one years.

Huntington.—In Washington, on Friday, March 23d, Dr. Joshua Huntington, United States Navy, retired.

North.—In Christ Church Parish, South Carolina, on Wednesday, March 28th, Dr. Richard Laurens North, in the ninety-second year of his age.

Vondy.—In Jersey City, on Monday, April 2d, Dr. Joseph H. Vondy, in the seventieth year of his age.

Pith of Current Literature.

The Journal of the American Medical Association, April 7, 1900.

Diagnostic Value of the Deep Reflexes of the Lower Extremities. By Dr. D. S. Fairchild.—The real diagnostic value of the deep reflexes can only be determined by a very careful consideration of the facts in the case, and by a careful study of the reflex itself. There is no certain or absolute guide as to the intensity of a normal reflex, and consideration of the reflexes alone will be misleading in determining the nature of a spinal-cord disease, or in distinguishing absolutely between an organic or functional affection of the nervous system.

Differentiation between the Bullous, Vesicular, and Pustular Eruptions of Early Life. By Dr. Charles Warrenne Allen.

Uniformity in Definition and Application of the Terms Position and Presentation. By Dr. Frank A. Stahl.—In brief: *Position* has reference to the fœtus as a whole to the mother as a whole. *Presentation* has reference to the part of the fœtus which presents or is found in the parturient opening. The writer makes a plea for uniformity in obstetrical nomenclature.

A Case of Rhizomelic Spondylosis. By Dr. Augustus A. Eshner.

Uric Acid and the Serious Results when not Eliminated. By Dr. M. S. Marcy.

Curious Facts You find in General Surgery. By Dr. Lucien Lofton.—Chronicles a case where a negro had been chopped in the head with an axe "during a friendly" bout. The outer and inner tables of the skull had been crushed; the external temporal and transverse facial arteries and a number of peripheral arterial twigs had been severed. Three hours after the injury the doctor removed "one or two ounces" of brain matter in the course of his ministrations, also several spicula of bone. He prepared the toilet with plain boiled water, sutured the brain covering with a No. 1 fiddle string, and the skin flaps with a No. 2 catgut. During the dressing one fourth grain of morphine sulphate, one sixtieth grain of strychnine nitrate, and a little brandy were administered. In forty-eight hours the patient walked about, and twelve days after resumed his position as a sawmill hand. The doctor also mentions a case of "cornu cutaneum," and a case entitled Broken Radius and Unconscious of it.

Pathological Changes Occurring in the Unobstructed Nostril in Cases of Deviated Sæptum. By Dr. E. Larne Vansant.

Dilatation of Ophthalmic Vein; Cure. By Dr. R. Ortega.

Some of the Aspects of Renal Inadequacy from a Neuropathic Standpoint. By Dr. H. A. Tomlinson.

Shoulder-humero-scapula Articulation. By Dr. Thomas H. Manley.

Medical Record, April 7, 1900.

Traumatic Hæmorrhages into the Spinal Cord. By Dr. Pearce Bailey.—Dr. Bailey regrets that this subject has received such scant mention in medical literature, and that it has been so inadequately handled even in recent monographs. Traumatic hæmatomyelia is a lesion of comparatively frequent occurrence, and the chances of recovery are much better than in any other variety of spinal-cord injury. The paper concerns itself with primary traumatic hæmatomyelia—*i. e.*, resulting from force exerted directly upon the cord itself without the intervention of bone or cartilage. . . . As these hæmorrhages are within the cord, surgical aid is impossible, "and operation therefore becomes absurd." The doctor advises rest in bed two weeks or longer if necessary; the customary attention to bowels and bladder; thermo-cautery or analgetic drugs to relieve the pain in the neck; iodide of potassium in ten-grain doses may hasten the absorption of the clot; faradaism to the paralyzed muscles; if they fail to react galvanism is to be substituted. After the immediate effects of the injury have passed, massage and passive motion in the neck are useful.

Some Remarks on the Treatment of Syphilis. By Dr. Charles J. Proben.—Baths, abstention from alcohol and tobacco, inunctions of unguentum hydrargyri—two drachms rubbed in for half an hour daily until the physiological effects are produced—are favored by Dr.

Proben. The hypodermic method, when rapidity of action and certainty of dose are desired, can be depended upon, especially if the soluble salts are used. The nates and deep intermuscular tissues should be chosen for the injection. Kidney complications should always be kept in view.

Treatment of Rheumatism at the New York Hospital. By Dr. Hughes Dayton.—Attention is called chiefly (1) to the use of sodium bromide with sodium salicylate for combating cerebral symptoms and permitting larger dosage; (2) to the hot-air treatment in subacute and chronic conditions; (3) to the value of local treatment by methyl salicylate.

Summary of Cases of Carcinoma and Sarcoma Treated by the Writer's Method of Cataphoric Sterilization to January 15, 1900. By Dr. G. Betton Massey.

Medical News, April 7, 1900.

On Cancer of the Breast. By Dr. Robert Abbe.—Though some results tend to show a bacterial causation, yet no noteworthy advance in the care and cure of the disease has been the result of this knowledge. In this connection the study of the lymphatic system seems to be of paramount importance, and the rôle played by the lymphatics has been the subject of research by Billroth, Haidenhaim, Halsted and Stiles, and others. The danger of operative infection of the wound by cutting infected glands and lymphatic channels is pointed out, and other points in the operative technique are dwelt upon. Then follows a statistical review of the subject, and a hopeful conclusion as to the future results of surgical treatment. Even now such results as three years' immunity are within the easy reach of all good operators.

Malignancy. By Dr. Arthur L. Fuller.

Causes, Diagnosis, and Treatment of Cystitis. By Dr. Ramon Guitéras.

Boston Medical and Surgical Journal, April 5, 1900.

On Distortion of the Spine, with Report of Two Cases of Diplegia Brachialis due to this Cause. By Dr. J. W. Courtney.—A distortion may be looked upon as a pause in the act of luxation, and may occur in the lower portions of the spine—less frequently in the dorsal region, and still less in the lumbar. Phenomena of cervical distortion are similar to those of luxation in part. But the pain accompanying distortion is more severe than that accompanying other lesions, and is peculiar in this, that whereas movement occurs more readily toward the affected side, it excites much more intense pain than movement in the opposite direction. Treatment: Rest in bed; support and immobilization of the neck, with a very slight extension of the spine. This may extend from three days to three weeks or more, if necessary. Two detailed cases follow.

The Conservative Operative Treatment of Fibroids; Report of Three Cases. By Dr. W. L. Burrage.

Two Cases Illustrating Conservative Operations for Uterine Fibroids. Dr. R. A. Kingman.—The writer believes that submucous pedunculated tumors can best be removed *per vaginam,* and that the percentage of cases in which submucous sessile fibroids can be removed by the same route would be much increased were digital exploration more frequently employed. He thinks the aversion to tents is altogether too strong. He highly commends the forceps devised by Dr. Burrage.

A Peculiar Case of Adenocarcinoma of the Body of the Uterus. By Dr. Agnes C. Victor.

A Case of Extra-uterine Pregnancy with Operation. By Dr. Frederick W. Johnson.

Empyema of Frontal Sinus. By Dr. John D. Paige.

New Orleans Medical and Surgical Journal, March, 1900.

On the Association of Paraldehyde with Chloroform. A New Contribution to the Study of Mixed Anæsthesia. By Dr. Cosimo Noto.—Dr. Noto aims to avoid or counteract the depression produced by chloroform on the cardiovascular system by associating with chloroform a drug that would make easy and prolong chloroform anæsthesia without exerting any obnoxious influence. This drug he considers he has found in paraldehyde. He records six experiments on dogs in which chloroform inhalation about forty minutes after the administration of paraldehyde in water was followed by anæsthesia with complete abolition of corneal reflexes and without any phenomena of excitement. An hour later the chloroform action ceased, the dog continuing to sleep soundly. The function of the heart remained perfectly regular and the great lowering of blood pressure incident to chloroformization did not ensue. The method has not yet been tried on the human subject. The author concludes that the association of paraldehyde with chloroform appears to be far superior to all other methods of mixed anæsthesia proposed up to this time. By administering paraldehyde before the inhalation of chloroform, we remove from patients who are rebellious or fretful the consciousness of being forced to undergo chloroform narcosis—a great practical advantage. The period of chloroform excitement, often much protracted and of great intensity, is completely suppressed. The profuse secretion of saliva is done away with and vomiting does not appear to be produced.

The History of Small-pox. By Dr. L. G. Le Beuf.

Albany Medical Annals, March, 1900.

Education and the Profession of Medicine. By President Andrew V. V. Raymond.—This is an address delivered to the Medical Society of the State of New York, January 31, 1900.

The Medical Examiner for Life Insurance and his Responsibilities. By Dr. S. Oakley Vander Poel.

The Bacteriology of Gonococcus Infections. By Dr. Arthur W. Elting.—The author reviews very fully the development of knowledge on this subject, considers the normal bacterial flora of the urethra and the vagina, of which the gonococcus is not a member, and details the various sequelæ and complications of gonorrhœa, not only in the sexual apparatus, but also as regards the eye, anus, rectum, mouth, parotid, breast, central nervous system, joints, fibrous, serous, cartilaginous, and muscular tissues, glands, endocardium, myocardium, and pericardium, and gonorrhœal septicæmia.

Brooklyn Medical Journal, March, 1900.

Diffuse Infective Peritonitis; Observations and Deductions. By Dr. Charles H. Goodrich.—The author considers the three following classes of cases: 1. Acute septic peritonitis. 2. Suppurative peritonitis. 3. Fibrinoplastic peritonitis. The following circumstances may modify the pyogenic effects of micro-organisms: 1. The *source* of infection has much to do with the activity of the inflammation. 2. The *number* of bacteria introduced may alone determine the outcome of the case, whether succeeding trauma or the rupturing of an abscess or of a hollow viscus. 3. The *virulence* of the particular germs in contact with the peritonæum may likewise menace the patient greatly or lightly, different germs varying by nature in destructive power. Also may exceedingly virulent bacteria possess attenuated abilities from long imprisonment, unfavorable food, or association with antagonistic fellows. 4. Again, the particular *ptomaines* produced in given cases may vary in amount and toxicity. 5. The part of the abdomen invaded prejudices the welfare of the patient to an extent. Given a trauma or a secondary pus infection where the intestinal coils are in constant motion, or the gastric movements during digestion more or less constant, the danger of a rapidly fatal result is much greater than where all is more quiet, as in the pelvis. 6. The general health of the patient when the inflammation ensues throws the balance to one side or the other in some cases. Rarely do alcoholics with diffuse peritonitis recover, or anæmic depleted women. 7. The presence of a quantity of good culture medium in the shape of effused blood or exuded serum may determine the ascendency of the bacteria. 8. In post-operative cases, blame may be attached to the excessive handling of peritoneal surfaces—often necessary, however.

The author records twenty-eight cases in the following groups: I. Caused by pancreatitis, two cases. II. Caused by perforating ulcer, one case. III. Following typhoid, two cases. IV. Caused by carcinoma of colon, one case. V. Caused by pyosalpingitis, one case. VI. Consequent on secondary abdominal hæmorrhage, one case. VII. Due to intestinal obstruction, one case. VIII. Post-operative peritonitis, two cases. IX. Due to appendicular inflammation, sixteen cases. The author recapitulates as follows: 1. Here are presented reports of twenty-eight (27?) cases of diffuse infective peritonitis; seven recovered (twenty-five per cent.). 2. Three of these cases were moribund when admitted to the hospital. 3. The majority of these cases and a large proportion of all cases of diffuse peritonitis are due to previous disease of the appendix vermiformis. 4. The majority of fatalities were due to unwisely prolonged medical treatment. 5. Pancreatitis is too often overlooked. 6. The appendix should be removed whenever the abdomen is opened for an inflammatory condition. 7. It is a question whether artificial drainage of these cases is wise when no necrotic abscess wall ("pyogenic membrane") exists. 8. There are many niceties of technique, which may be saving elements in any case. No measures for prevention of infection can be too extreme, despite the ridicule of those who are satisfied with the ordinary aseptic and antiseptic precautions. 9. However scientific the thorough mopping of the serous coat of the intestines may seem, the important element of shock must not be forgotten.

Extra-uterine Pregnancy; Operation. Enormous Ventral Hernia containing Uterus, Left Tube and Ovary, Bladder, Omentum and Several Feet of Small Intestine; Operation. Normal Pregnancy and Labor. By Dr. Russell S. Fowler.—The operation for uterine pregnancy was performed on a woman, aged twenty-two, on March 20, 1896, the patient being discharged cured on May 8th. There was then no hernia. On February 14, 1898, she was seen for an enormous tumor, which had commenced a year previously—*i. e.*, a year after the prior operation—as a small swelling at the lower end of the laparotomy scar. The operation disclosed the contents as stated in the title. Patient was discharged cured one month after operation (February 17th). On April 6, 1899, she had a normal labor.

Changes Affecting the Long Island State Hospital (Formerly the Kings County Lunatic Asylum) Incident to its Transfer to State Administration. By Dr. Robert M. Elliott.

The Brooklyn Medical Journal, April, 1900.

Practical Reform of One Hospital Evil—The System of Inspection Recently Adopted by the Department of Public Charities. By Dr. Arthur C. Jacobson.—A description of the method in force since January 1st in the boroughs of Brooklyn and Queens for the apportionment of public aid to the various charitable institutions. Instead of bulk appropriations each institution is to receive sixty cents per capita for medical and eighty cents per capita for surgical cases for each and every day's treatment of a given individual whose status as a charity patient and as a *one year's* resident of the boroughs of Brooklyn or Queens will be determined by a medical inspector acting for the department of public charities. Children under two years of age are to be paid for at the rate of thirty-eight cents per diem. Eighteen dollars will be paid for each maternity case discharged on or before the fifteenth day. After fifteen days, twelve dollars per month will be paid for each nursing mother. These regulations apply only to charity patients. All cases, except emergencies, must apply and pass inspection at the office of the department before recommendation for admission to any hospital.

Head Injuries. By Dr. Silas C. Blaisdell.—The author considers the various instruments employed in dealing with head injuries and the technique of operation. He condemns the chisel altogether as clumsy, uncertain, and unsuitable for rapid work. His preference is given to the De Vilbis rongeur with a modification of his own, or, when necessary, as in case of great density of bone, by a series of successive trephine openings which can then easily be brought into one.

Treatment of Acute Anterior Urethritis. By Dr. William E. Butler.

The British Medical Journal, March 31, 1900.

Remarks on Will-making in Aphasic Paralysis. By Dr. James Edmunds.—The writer reports a case of partial right-sided hemiplegia with complete aphasia both as to speaking and writing, where it was necessary for the patient to make her will. The hemiplegia came on suddenly on July 10, 1899, but the patient had been aphasic for some time previous, as was shown by some letters she had written. The hemiplegia improved, but the loss of power to speak and write became absolute. Her mind was perfectly rational, however, and she understood slow, careful speech and plain, legible writing. On August 3d and 4th she made her will by means of the use of two sets of printed cards. The names of her relatives made up one set and the various properties to be bequeathed the other. On being asked to whom she wished to leave a certain property, she would pick out the name of the person and place that card with the card for the property. The patient died on August 26, 1899. The will was proved in solemn form in the probate court, London, and the method devised for ascertaining the wishes of the testatrix was approved by the president of the court. Judgment for the will was given.

Some Cirrhoses of the Liver. By Dr. W. B. Cheadle.—In the first of the Lumleian lectures on this subject the writer discusses the three important varieties of this affection—viz., atrophic, hypertrophic, and syphilitic cirrhosis of the liver. After touching on their histopathology, attention is called to the following points:

Atrophic Form.—Almost invariably due to the use of alcohol. It is doubtful whether an early stage of enlargement exists, beyond slight engorgement and congestive swelling. But the large, hard liver of hypertrophic cirrhosis does not merge into the atrophic form. The fibrosis to be observed in the atrophic form is usually coarse and multilobular; sometimes, however, it is diffuse. Ascites is of especial frequency in this form, and in the majority of cases is of grave significance. Marked jaundice is usually seen only in the later stages and is an ominous symptom. The interstitial nephritis usually associated with atrophic cirrhosis is probably due to the same cause—the chronic alcoholic poisoning.

Hypertrophic Cirrhosis.—The hypertrophic biliary cirrhosis, as described by Hanot, is not to be looked on as the only representative form of hypertrophic cirrhosis. Many of its features are not peculiar to it, but occur also in other forms. The fine intralobular fibrosis thought to be peculiar to this form, and to be due only to hyperplasia of bile ducts, has been noted in cases of undoubted alcoholic origin. Jaundice is neither so constant nor so common a symptom as it has been thought to be. Ascites is not always absent; in twenty-six cases of this variety of cirrhosis, ascites was present in sixteen. Again, the spleen is not always enlarged. The constant chronicity of the disease has been exaggerated; cases with a rapidly fatal course have been observed.

Syphilitic Cirrhosis.—There may be no history of syphilis. The morbid changes may be present to any degree. Stress is laid on the frequent occurrence of perihepatitis and local peritonitis. Syphilis may furnish the key to the little-understood cases of infantile cirrhosis.

Anthrax of the Thigh Treated by Operation; Recovery. By Dr. T. Sinclair.—The writer reports the case of a laborer, aged twenty-three, who contracted anthrax by pricking himself on the inner side of the thigh with a splinter of wood from the handle of a barrow loaded with bone manure. In three days a pimple formed, and a week later he was forced to stop work and go to the hospital. The infected area was excised, together with the lymph glands of the groin, which had become involved. Systemic infection did not occur and the patient recovered. Fluid from the blebs and from the central slough contained anthrax bacilli; none were found in the glands, however.

The Condition of the Blood in Two Cases of Pernicious Anæmia. By Dr. A. C. Coles.—The writer reports the results of continued blood examinations in two fatal cases of pernicious anæmia. In the first case, that of a man, aged thirty-two, the number of red corpuscles ranged between 677,000 and 4,000,000 to the cubic millimetre. The leucocytes only once rose above 6,000 to the cubic millimetre, while the hæmoglobin ranged between fourteen and seventy-two per cent. At one time the number of nucleated red corpuscles rose as high as 6,500 to the cubic millimetre. In the second case, that of a woman, aged forty-two, the red corpuscles varied between 630,000 and 4,000,000 to the cubic millimetre; there was never any leucocytosis; the hæmoglobin ranged between fifteen and fifty-three per cent. In both cases the color index was high, but seldom higher than the normal. During temporary improvement, the condition of the blood resembled that seen in chlorosis.

Spleno-myelogenous Leucæmia. By Dr. Thomas McCrae.—The writer reports a case of spleno-myelogenous leucæmia in a man aged twenty-eight. In June, 1898, his spleen was greatly enlarged and his blood presented a typical picture of the disease, the leucocytes numbering 584,000 to the cubic millimetre, twenty-three per cent. being myelocytes. In August, 1898, the spleen was barely palpable and the blood was practically normal, the leucocytes being normal in number and the myelocytes having disappeared. In November of the same year examination showed the number of leucocytes to be 178,000 to the cubic millimetre, twenty per cent. being myelocytes. The spleen was again greatly enlarged. Five months later, in April, 1899, the spleen tumor had again disappeared and the blood count was normal, and no myelocytes were to be seen. The patient died some months later of cerebral hæmorrhage.

The Bristol Medico-chirurgical Journal, March, 1900.

Notes on Some Thermal, Hydrothermal, Electric and Hydro-electric Procedures, and the Indications for their Use. By Dr. C. J. Whitby.—The author enumerates the results of "systematic and graduated application of definite and appropriate stimuli (thermal, mechanical, electric) to the entire body surface, or to particular parts of it," as follows: (1) The increased oxidation and (2) the elimination of toxic products; (3) the stimulation of anabolic or (4) of catabolic molecular activities; (5) the restoration of impaired or dormant functions; and (6) the establishment of a heightened condition of general nervous and vascular tone, when these were previously defective. He considers that too great stress has been laid on merely eliminative results, and that attention is needed as to their value as organic and molecular exercises, capable of gradually arousing the latent powers of the organism; and cites a case in which "the manifestations of a general rheumatic poisoning were first distinctly aggravated, but ultimately dispelled, by the persevering use of a simple graduated needle bath." He then considers in detail the methods of application and physiological effects of, with the indications for the Turkish, Russian, vapor, and radiant heat and light baths, the various hydrothermal baths and douches and electricity—galvanic, faradaic, and the current from the main.

Rheumatic Disease of the Cardiac Muscle. By Dr. Theodore Fischer.—The author devotes attention to the milder effects, other than dilatation and valvular disease, of rheumatic poisoning upon the heart—viz., loss of activity, pain and weakness, tachycardia, etc., and illustrates them by cases. He warns us that "in a child it is easy to mistake physical weakness for laziness, and in a young female adult the symptoms produced by the same weakness may be thought evidence of hysteria. In either case injudicious advice may result in cruelty, if not in actual harm, to the sufferer."

Vascular Caruncle of the Urethra. By Dr. A. E. Aust Lawrence.—The author advises complete removal of the growth. If the whole of the growth can not be seen by simply stretching the urethral orifice with a sinus forceps, the lower part of the meatus and wall of the urethra should be cut with scissors so that it can. To remove the growth it is only necessary to take one or two old-fashioned pointed artery forceps and catch hold of the urethral mucous membrane beyond the growth, cut out this portion of the mucous membrane with the growth attached, and bring the edges of the mucous membrane and the incision of the urethra together with fine catgut, when perfect union and complete relief of all symptoms may be looked for.

Non-bacillary Croup. By Dr. J. O. Symes.—The author describes eight cases of "an acute membranous affection of the fauces extending to the larynx and trachea, excited by agencies other than the Klebs-Loeffler bacillus." He says that "the onset of non-bacillary croup is much more sudden than that of diphtheria, and the temperature rises more quickly and to a higher point. The membrane has not the dead-white appearance of diphtheritic membrane. It is yellowish in color, softer, less firmly matted together, and more easily detached from the underlying tissues. Placed in water, the membrane swells up, losing its characteristic shape, probably owing to the large amount of mucus it contains. The surface from which the membrane has been detached is seldom bleeding or ulcerated, and may preserve its epithelium quite intact. Examined microscopically, the membrane is found to consist of pus cells, leucocytes, and fibrin." Albuminuria is often absent. The disease he considers not uncommon, and has a high mortality from general septic infection or broncho-pneumonia. The treatment recommended is removal of the membrane with a swab and syringing the fauces with a 1-in-250 solution of formalin. Intubation or tracheotomy may be needed, and the general treatment is that for diphtheria.

The Spontaneous Disappearance of a Sarcomatous Tumor. By G. Munro Smith, F. R. C. S.

A Case of Bilateral Ganglionic Neuro-gliomata of the Face. By J. Gray Clegg, F. R. C. S., and F. Craven Moore, M. D.

A New Form of Ureameter Designed by Dr. F. Gade, Christiania, with Description, Remarks, and Estimations. By I. Walker Hall, M. B.

The Dublin Journal of Medical Science, March, 1900.

The Position of Murphy's Button in Modern Surgery. By J. S. M'Ardle, F. R. C. S. I.—This is a continuation. The author sums up by considering the principal objections put forward by men of high standing to the use of the Murphy button—viz.: 1. Contraction of the intestine at the site of operation. 2. Sloughing of the intestine from pressure. 3. Septic peritonitis. 4. Retention of the button. 5. Kinking of the bowel. 6. A faulty position of the button, when once inserted, can not be easily rectified. 7. The expense and difficulty of having the proper sizes on hand. As regards 1, the author can find no recorded instance occurring where the portions of intestine joined were healthy. The causes of 2 he finds to be, (*a*) too large a button; (*b*) the button placed near diseased tissue; (*c*) faulty suture of mesenteric cleft impairing blood supply; (*d*) anastomosis of dilated and functionally active intestine to atrophied one. He does not consider 3 "grounded on solid basis of fact, either experimental or pathological." Objection 4 is supported by many cases, and holds good when the bowel is thickened and fibrous, and is sometimes due to faulty construction of the button. Objection 5 will hold good with a semiparalyzed bowel; in such a case "it is the duty of the surgeon to so support the bowel by fixation to the abdominal wall, or otherwise, that no improper position can be assumed by the viscus." As regards objection 6, the author pertinently asks, "Why should any surgeon in his sound senses apply the button wrongly, and can he attribute to an appliance the fault of its application?" As to 7, the expense, the author says that should not be considered against the value of human life. The author's conclusion is "that, considering the reduction in mortality which has been admittedly brought about by this apparatus (from sixty to thirty per cent.), it is criminal to experiment on the human subject with appliances the worth of which has not been determined by experimental research and proved by a long series of brilliant results." The author finally considers errors in the manufacture of the button, in judgment in operating, and in technique.

The Rôle of the Municipality in Public Hygiene. By Sir Charles A. Cameron, C. B.—In this presidential address to the Leinster branch of the British Medical Association the author considers, among other subjects, that of dangerous shellfish. Local sanitary authorities should prevent shellfish obtained from places contaminated by sewage from being used for food.

Tuberculosis, The Housing of the Very Poor, Smallpox, The Influence of Schools in Spreading Disease, and many other kindred subjects are considered, mainly with special reference to Dublin.

Clinical Reports of the Rotunda Hospitals for One Year, November 1, 1898, to October 31, 1899. By R. D. Purefoy, M. D., T. C. D., F. R. C. S. I. (Master), and R. P. R. Lyle and H. C. Lloyd (Assistants).—(To be continued.)

Glasgow Medical Journal, March, 1900.

The Treatment of Brow Presentation, with Notes of Two Cases. By John Edgar, M. B., etc.—After stating the rarity and great danger of brow presentation to both mother and child, and considering the various measures that have been recommended for dealing with it, the author details what, in his opinion, ought to be done. First, when the head is movable at the brim and unmolded; secondly, when the head is engaged and is molded; and, thirdly, when the head has entered deeply into the pelvis.

In the first case, a trial might be made of the postural method; but he would prefer to adopt Schatz's, and, failing this, Thorn's method. Schatz's method consists in anæsthetizing the patient, and then, with one hand on the child's shoulder and the other on its breech, in pulling the shoulder upward in the direction of the child's back, and pushing the breech in the opposite direction. If this is successful the child's spinal curvature will be corrected, and the head will, Schatz asserts, become spontaneously flexed. In this way a vertex presentation will be produced by manipulating the trunk alone. This plan is possible, however, only when the head is freely movable, the membranes unruptured, and the lower uterine segment undilated. The presentation is rarely recognized at so early a stage. Thorn's method is as follows: The patient is placed on the side corresponding to the child's abdomen and anæsthetized. With two fingers of the one hand the upper jaw, and then the forehead, is pushed up, or, on the contrary, the occiput is pulled down, while, at the same time, the external hand pushes the child's breast backward and upward. Gravity tends to bring the breech forward. A capable assistant can aid this manœuvre materially by pushing the breech, or, if a sufficiently skillful assistant is available, he may flex the trunk by Schatz's method, while the head is manipulated by the Baudelocque I method. Failing both of these, or if the cord was prolapsed, or perhaps also in mento-anterior positions, he would perform podalic version.

In the second case, he would place the patient on the side toward which the child's abdomen was directed, get her anæsthetized, and then try Thorn's, and also, if necessary, both Baudelocque's methods. The method known as Baudelocque I consists in pushing up the forehead, while at the same time the other hand externally presses down the occiput. In Baudelocque II the whole hand introduced through the os grasps the occiput, and, during pains, endeavors to pull it down, so flexing the head. Were these to fail, he would endeavor to pull down the chin. In the event of success following any of these modes of treatment, he would, if need be, rupture the membranes and fix the presentation by means of forceps. If they were to fail, however, version or the forceps might be cautiously tried. In otherwise intractable cases craniotomy would require to be performed, unless the mother and child's condition were sufficiently favorable to warrant waiting for further molding and descent. In such a case he would take care to keep the woman on the side corresponding to the child's abdomen, to insure, if possible, descent of the face.

Thirdly, when the brow has descended to, or nearly to, the pelvic floor, Baudelocque II should be tried, and, failing that, the chin ought to be brought downward and forward. The forceps will aid delivery. If, however, the child is dead, or the mother's condition demands it, craniotomy ought to be resorted to, unless birth, with or without forceps, is possible without risk to the mother.

Clinical Gynæcology. By Dr. J. K. Kelly.

Isolation Hospitals for Consumption in the Insane. By Dr. James F. Gemmel.—The author gives a *résumé* of three years' experience in the only detached hospital in Scotland for the treatment of the insane. The author does not hold that facts support the theory implied in the term "phthisical insanity," but he considers the special circumstances of asylums and insane patients that act as predisposing factors in the development of phthisis. As regards asylums, he names—1. Association with other cases. 2. Overcrowding. 3. Dampness of atmosphere from frequent washing. Concerning the patients, we have: 1. Refusal of food. 2. Sitting with the chin sunk on the chest, added to shallowness of respiration—both habits common in the insane. 3. Liability to chills at the weekly bathing. "All these facts, facts which do not obtain in ordinary life, must be taken into consideration when dealing with the question of phthisis in the insane, as tending to produce a state of nutrition favorable to its development."

Gazette hebdomadaire de médecine et de chirurgie, March 25, 1900.

Shall Basiotripsy be Abandoned? M. Audebert takes issue with Civel concerning a recent publication of the latter advising the abandonment of the cranioclast and the basiotribe in favor of simpler and less dangerous instruments. Civel advises fixation of the head with strong forceps, retraction of the vaginal surfaces with retractors, and mutilation of the fœtal head with long, sharp scissors and a bistoury. In this way, he claims, the head can be rendered sufficiently small to be extracted without the dangers of a blind operation. He has accomplished it successfully in a case of hydrocephalus and in one of contracted pelvis. Audebert takes issue with him as to the mortality following the use of the basiotribe and shows that Civel's proposed operation is not devoid of danger in inexperienced hands. He agrees with Civel that abdominal extraction is by far the preferable operation with good assistance and favorable surroundings, and is willing to admit that a surgeon, in the absence of the basiotribe, can reduce the fœtal head by morcellement sufficiently to allow of an easy birth; but he is convinced that the basiotribe, by virtue of its harmlessness and its good record, and the simplicity of its employment, will remain the instrument of choice in the majority of cases.

Fracture of the Greater Tuberosity of the Humerus; Massage as a Means of Diagnosis.—M. Dagron reports several cases in which the external signs of a fracture were present, localized pain, tumefaction, deformity of the upper part of the humerus, but in which there was such an intense contraction of the muscles that crepitus could not be elicited nor reduction performed. After gentle massage over the deltoid, biceps, triceps, pectoral, latissimus dorsi, supraspinous and infraspinous muscles, these structures became soft and flaccid, and palpation of the injured extremity and its proper reduction were easily accomplished.

Lyon médical, March 25, 1900.

Vaccination and Small-pox in Pregnancy.—M. Vinay points out the dangers of small-pox occurring during pregnancy as especially grave, and believes that they are due in part to the self-intoxication from which many gravid women suffer. He sees no danger or contraindication to vaccinating a woman during her pregnancy should the occasion demand it, and points to the advantage that a successful vaccination at this time renders her child immune from small-pox. He protests against yielding to feminine coquetry by vaccinating upon the leg during this period, as, on account of the venous stasis and frequent œdema of the legs, infection is especially apt to follow the simple operation.

Aortic Stenosis with an Anacrotic Pulse.—M. Niclot reports such a case.

Wiener medizinische Blätter, March 15, 1900.

Milk Diet in Albuminuria. (Conclusion.)—Dr. Victor Schreiber concludes that it is first necessary to determine the source of the albuminuria, whether it is dependent upon some renal lesion or whether it is purely functional. If the examination shows the presence of a chronic nephritis of whatever origin, the nutrition of the patient must be the first consideration. In this dilemma milk is at once a medicine and a food, and, while it is not to be regarded as a specific, its administration is urgently demanded. If a simple albuminuria exists, however, with no renal elements in the sediment, and if the albuminuria is the sole pathological feature of the renal secretion, if it is dependent, in other words, upon some nervous, gastro-hepatic, or gouty factor, or if a calculus is the cause of its appearance, treatment must be directed toward the cause, since the albumin may eventually have a deleterious effect upon the epithelium of the kidney. In these cases a mixed diet containing milk is to be advised, although too stringent a diet must be avoided, so that the patient's strength shall not be reduced nor his obstinacy be aroused.

The Literature on Gastric Diseases for 1899. By Dr. H. Keller.

The Plague Epidemic in Oporto. By Dr. J. Shulz. —The mortality of this epidemic was low, about forty per cent., despite the laxity in enforcing isolation. The cases ran a usual course, with an acute febrile onset, enlargement of certain glands in lymphatic areas, not the same ones in all cases, and a variability in the size of the buboes. The buboes never appeared at the beginning of the disease, but always four or five days later. The temperature was high, the spleen enlarged, and albuminuria frequent. In adults the inguinal glands were most often attacked, and subsequent enlargement and sensitiveness of the pelvic glands rendered the diagnosis of perityphlitis a deceptive possibility. The treatment consisted mainly in the administration of calomel and benzo-naphthol. Yersin's serum did not seem to be especially efficacious.

Wiener medizinische Blätter, March 22, 1900.

New Method of Treating Chronic Morphinism. By Dr. Fritz Pfeiffer.

"Cold" as a Cause of Disease.—Dr. Alexander Partos emphasizes the rôle of a "cold" in the ætiology of acute articular rheumatism. He calls attention to the frequent sequel to a cold of acute infectious diseases, and remarks upon the susceptibility of different individuals, especially after long confinement to the house by an illness or following the enervating effects of a chronic disease. (Continued article.)

Wiener klinische Rundschau, March 18, 1900.

The Treatment of Eczema in Children.—Dr. J. H. Rille first emphasizes the importance of making a correct diagnosis of eczema and finally its differential diagnosis, whether it originates from bacteria, "scrofula," rhachitis, pediculi, or other constitutional disorders. In children, in view of their tender skins, the therapeutic aim must be to avoid injury. In intertrigo, the affected parts must be kept from contact with healthy skin by careful bandaging, and must be powdered with talcum and a ten-per-cent. zinc oxide powder, or the oleate of zinc may be employed. If the disease attacks the buttocks and the genital organs, carron oil, or compresses of lead and opium or acetate of aluminum may be used, with or without the application of a weak ichthyol, salicylic acid, or resorcin solution. If the intertrigo becomes intense, with swollen, pasty, dark-red appearance of the affected parts, the same treatment is of value. If the base of the intertriginous areas become gangrenous, there must be frequent irrigations and the application of a one-per-cent. mercurial or ten-per-cent. dermatol salve.

In cases of ecthyma or gangrenous impetigo the treatment is the same as for intertrigo, as it is in cases of miliaria. In acute artificial eczema, antipruritic remedies, menthol, boric acid and salicylic acid, must be employed, after which Lassar's paste is to be applied. (To be continued).

Eye Diseases following Influenza. (Conclusion.)—Dr. Michael Mohr says he has observed serous tenositis and orbital and palpebral phlegmon as sequels of the grippe. Purulent dacryocystitis and dacryoadenitis complete the list of ocular diseases that may supervene upon an attack of influenza.

Medical and Surgical Treatment of Cholelithiasis. By Dr. Carl Ewald. (Continued article.)

Wiener klinische Rundschau, March 25, 1900.

Psychical Deafness. By Dr. Ferdinand Alt.

The Treatment of Eczema in Children. (Conclusion.)—Dr. J. H. Rille advises the use of a five-per-cent. solution of acetate of aluminum in acute eczema of the head and face accompanied by œdema. When crusts appear, they are to be removed, and Lassar's zinc paste applied. In cases of moist eczema, daily penciling with a one-per-cent. nitrate-of-silver solution is advised, gradually reducing the applications after three or four have been made. In addition, the following ointment will be found serviceable:

℞ Vaseline	100 parts;
Zinc oxide	20 "
Oil of cade	15 "

The author has obtained good results from the employment of Hebra's diachylon ointment, but is best satisfied with a one-half- to one-per-cent. salicylic ointment made up with lanolin and vaseline, two parts of lanolin to one of vaseline. The author has not had satisfaction from the use of salicylic plasters in children.

For the treatment of universal eczema he advises rubbing the entire body with a thin coating of vaseline, and then applying a mild dusting powder from four to six times daily. The child is then painted thoroughly with cod-liver oil, which is used for macerating purposes, although it has the disadvantage of its odor and of being somewhat irritating to the skin. Gradually, tar in increasing proportions is added to the oil.

Eczema of the nasal orifice is best treated with silver solutions and white precipitate salve. Eczema of the fingers must be treated by the wearing of gloves, not too frequent washing, and the use of diachylon ointment. The author warns against vaccinating an eczematous child lest diseased areas become infected, leaving many scars. Acute infectious diseases, he says, such as measles, may result in curing cases of chronic eczema.

Deutsche Medizinal-Zeitung, March 26, 1900.

Digestive Disturbances and the Heart. By Dr. Schuster.—A clinical paper, in which the author mentions the various functional cardiac disturbances that may depend upon digestive disorders, and the digestive ailments that may arise in the course of cardiac disease.

Wiener klinische Wochenschrift, March 29, 1900.

Case of Intra-abdominal Omental Torsion.—Dr. J. Hochenegg reports a case of this rare condition which occurred in a man who had an inguinal hernia that had been reduced with great difficulty after he had taken a warm bath. The symptoms were those of torsion of the pedicle of an ovarian cyst. At the time of operation, the abdomen contained free bloody fluid, and the omentum, which had once occupied the hernial sac, was found to have formed itself into a tumor the size of a head and was covered with a sero-purulent exudate.

Lowit's Hæmamœba in Leucæmic Blood. By Dr. Wilhelm Türk.—The author proves that the so-called hæmamœba of Lowit is an artefact or depends upon the appearance which *Mastzellen* make.

A Study of the Second Pulmonary Sound with Bettelheim and Gärtner's Stethophonometer.—Dr. Adolf Hecht concludes that the instrument is useful in determining the relative intensity of any two of the cardiac sounds, and in the comparison of experimental with clinical evidence.

Riforma medica, March 10, 12, and 13, 1900.

Reduplication of the Second Sound in Mitral Stenosis. By Dr. L. Ferrannini.—During the past year the author studied nine cases of mitral stenosis in which the second sound was followed, after a short but distinct interval, by a third tone which occupied the first part of the long pause. This reduplication was heard loudest at the apex, and the author believes that the additional tone is not a division of the second sound but a third adventitious sound. If it were a part of the second sound there would be no distinct interval between the two tones and they would be heard loudest at the base. He gives the histories of three cases which presented these phenomena. In one of these there was both "partition" of the second sound heard at the base and "reduplication" of the mitral diastolic sound heard at the apex.

The latter or third sound differs from the second sound in quality, intensity, and duration, being drier, shorter, less loud, and higher pitched than the mitral diastolic sound.

Rivista critica di clinica medica, March 17, 1900.

A Case of Multiple Intracranial Cysticercus Cell. (Rudolphi.) By Dr. E. Parona. (Continued, see *New York Medical Journal*, page 527).—Considering the rarity of cysticercus in man, its coexistence with *T. solium* in the same individual in over fifty reported cases is certainly a notable fact. What rôle self-infection plays in these cases it is difficult to say; but it is known that the eggs of *T. solium* which are discharged in the fæces may be swallowed in various ways by uncleanly persons. It is also known that proglottides of the worm have been vomited, and it is certainly possible that some eggs were liberated from these proglottides, and were regurgitated into the stomach, and thus the cysticercus may get into the system. The author concludes his article with a very full bibliography of cysticercus.

Vratch, February 26, 1900, O. S. (March 10, N. S.).

On the Question of the Influence of Local and General Changes in the Body upon its Susceptibility to Infection. By Dr. G. N. Dorivo.—The author reviews the work of other observers in this field, and gives an account of a series of experiments on animals intended to throw some light upon this question. He proposed to examine the influence of the following factors in increasing the susceptibility of the animals to infection: 1. General anæmia. 2. General watery condition of the blood. 3. Local anæmia. 4. Local watery condition of the blood. 5. Loss of innervation of a part. The first series of rabbits consisted of twenty-one animals. He bled these freely, in proportion to their weight, and a day or two later injected some pure culture of *Streptococcus pyogenes aureus*, or of *Bacillus pyocyaneus*. After a variable period of illness, thirteen rabbits thus treated died, while only two of the control animals, who had received the same inoculation without having been bled previously, succumbed to the infection. In the second series of experiments he first bled the animals, taking even a greater quantity of blood away than in the first set of rabbits, and then replaced this loss by several times as much salt solution. Of this lot seven animals thus treated died, while only one of the control rabbits fell victim to the infection. In a third series of rabbits he produced local impoverishment of the blood by injecting normal salt solution into the inner surface of the thigh. The result was a severe phlegmonous infection following inoculation with streptococci in the rabbits thus treated, while in the control animals only a mild degree of infiltration was the sole effect of the injection. All the rabbits that received these injections of salt solution into the thigh died of sepsis, while all the control animals recovered. (To be continued).

Concerning Mouth Washes. By Dr. G. N. Vitol.—The writer briefly emphasizes the necessity of keeping the mouth and teeth in good condition. In addition to the mechanical cleaning secured by the use of the brush, some form of mouth wash must be used. The purpose of a mouth wash is not, as some have claimed, to render the oral cavity aseptic, but to make the mucosa a less favorable nidus for the growth of germs. The substances which are used to sterilize the mouth must of necessity be injurious to the mucous membrane lining the cavity, and may produce, in the long run, symptoms of general poisoning. The requirements of a good mouth wash, therefore, are: 1. It must be perfectly harmless. 2. It must have the property of inhibiting the growth of microbes. 3. Its effects must be lasting and not transitory. 4. Its taste must be agreeable. The writer has examined nine different mouth washes in common use, and has specially tested the comparative value of formalin as an oral disinfectant. He finds that Miller's sublimate-benzoic-acid solution, and his combinations of benzoic acid with thymol and with rhatany, are acid in reaction, and therefore act as decalcifiers of the teeth. The same is true of salicylic acid, of chlorate of potassium, of Botot's water, of Pierre's solution, and of formalin. He tested all these bacteriologically, by examining the mouths of patients before cleaning the teeth, then after a quarter of an hour, and then after three hours. He found that formalin has a very decided antiseptic effect after a quarter of an hour, but as it penetrates into the deeper parts of the mucosa it leaves the superficial epithelium in a state of inflammation, and after three hours he actually found more bacteria in these cases than in uncleaned mouths. Sublimate has a more lasting effect, but the disagreeable metallic taste remains for about five hours after cleansing. Formalin, in addition, decomposes in the mouth into formic acid and inactive paraformalin. Its taste is so vile that ethereal oils must be added to the solution. These oils, however, produce a decomposition of the formalin, and after standing a few weeks the solution is worthless. (To be continued.)

On the Pathologic Changes in the Brain during the Epileptic State. By Dr. S. I. Liubimoff.—The lesions found in the brains of epileptics have been studied by numerous observers, but in all the recorded cases the patient died so long after the occurrence of epileptic attacks that the changes which were found could not represent those which take place in the brain during the *status epilepticus*. The writer reports the present case because the patient died immediately after a series of severe epileptic seizures, and consequently his brain undoubtedly presented the condition which accompanies the epileptic state, although it may be that the picture was somewhat exaggerated. On microscopic examination of this brain it was found that there were no local changes, but that all lesions involved the entire brain. The chief characteristic was a severe hyperæmia. The blood-vessels, especially the smaller ones, were literally packed with cells, while the plasma had penetrated through the walls of the arterioles and capillaries and had become diffused in the neighboring tissues. Newly formed vessels were also found in many places, and hæmorrhages of various sizes were scattered through the brain and the medulla. The nerve cells were found in various stages of degeneration, ranging from a clouding of the protoplasm to a complete destruction of the cell itself. The neuroglia cells were increased in quantity. The association tracts contained fewer fibres than in a normal brain.

In commenting upon these changes, the writer says that the hyperæmia is the principal change produced during an epileptic attack. The stasis of the blood in the cerebral vessels produces a disturbance in circulatory exchange, and a consequent disturbance in the nutrition of the cells. If the attacks are frequently repeated, the cells begin to suffer permanently, and thus the occurrence of psychic derangements in epileptics of long standing is explained. The changes in the cells are therefore secondary to the hyperæmia. The gliomatosis is secondary to cell degeneration, in a manner quite analogous to the hypertrophy of the connective-tissue framework of certain other organs after degeneration of their parenchymatous cells. In conclusion, the writer thinks that the self-intoxication which is supposed to produce epileptic attacks can not of itself produce the changes in the cerebral cells which are found post mortem in these cases, but that these changes are secondary to hyperæmia, and consequent disturbances in nutrition.

Fibromyomata of the Vagina. By Dr. V. S. Grousdeff.—An account of the cases reported in literature. (Continued.)

Vratch, March 4, 1900, O. S. (March 16, N. S.).

Military Surgeons and "Probationers." By Dr. V. Th. Bouschojeff.—"Probationers" is a term used in the Russian army to designate recruits who claim disability and who are suspected of malingering. The writer reports a number of cases in which recruits have been declared to be malingerers and sent to the ranks, when in reality they were suffering from hysteria, epilepsy, etc., as the subsequent course of the disease showed. During the year 1899, 9.3 per cent. of all recruits drafted were "protested" as unfit for service by the military surgeons. Of these, 39.7 per cent. were "returned" as fit by the superior medical commission after a stage of probation at a district military hospital, and 59.8 per cent. were confirmed as unfit and excused from duty, while 0.5 per cent. died while under the observation of the military authorities.

The author closes with a plea for a better position for the military surgeon in Russia.

Concerning Mouth Washes. By Dr. G. M. Vitol. (Continued.)

On Fibromyomata of the Vagina. By Dr. V. S. Grousdeff. (Continued.)—The writer analyzes the cases of fibromyoma of the vagina reported in literature. In speaking of the prognosis of fibroids of the vagina, he says that it is more favorable than in fibroids of the uterus, especially in the polypoid variety of vaginal fibroma. But this does not mean that they may be left alone. On the contrary, fibroids of the vagina have been known to become malignant (sarcomata), and may be the starting point of acute disease in all the pelvic organs. During labor they may so obstruct the parturient canal as to be seriously dangerous to both mother and child.

In speaking of the treatment, the writer says that tumors of the polypoid variety, especially those with slender pedicles, are very easily removed by simply cutting the tumor away and tying the stump. If the pedicle is stout, it is better to incise the tumor and to enucleate it, as is regularly done in the sessile variety. In cases where the peritonæum has been opened during the operation, it is better not to sew the vaginal wound, but to pack it, and wait until we are reasonably sure that no sepsis has been introduced.

In cases where the tumor is an obstacle to the progress of normal labor, it is best to remove it, especially if it is a polypoid tumor. If too large and too difficult to remove, Cæsarean section is indicated.

On the Question of the Influence of Local and General Changes in the Body upon its Susceptibility to Infection. (Continued.) By Dr. G. N. Dorno.—The next group of rabbits were subjected to ligation of the femoral vessels, thus producing a local anæmia. There were eight rabbits in this set, two of which were control animals. He ligated the artery in some and the vein in others. All the animals exhibited a rise of temperature after inoculation with streptococcus culture into the thigh. In those in which the artery had been tied the temperature was high for a few days, then fell, and continued to be low until death. In the control animals it was never very high, and gradually fell until recovery took place. The local changes in the rabbits in which the vessels were tied consisted of acute and rapidly spreading suppuration, which extended from the knee to Poupart's ligament. In the others there was only a circumscribed abscess, or more often a simple cellulitis of the thigh. Finally, in the last group of animals he cut the femoral and sciatic nerve trunks and injected some streptococcus culture into the thigh. The animals, eleven in number, all had a rise of temperature, which continued for some days, then fell again, and remained low until death. The local phenomena, however, differed widely in the control animals, where they consisted of slight infiltration, whereas in the animals in which the nerves had been severed there was a severe, rapidly spreading phlegmonous inflammation. The control animals died more rapidly than the others because the section of the nerve trunks produced a vasomotor paralysis of the lower extremity, resulting in stasis of the blood in the member, and consequently absorption of the septic material was retarded.

The author concludes that anything which favors absorption impedes the development of severe local phenomena, while anything which impedes absorption favors the local activity of the inoculated germs. Ordinary anæmia does not predispose to infection, while acute anæmia, artificial dilution of the blood, ligature of vessels supplying a part, and section of the principal nerves of a limb increase the susceptibility of the organism to infection.

Miscellaneous.

A Description of a Case of Ainhum.—A. B. Dalgetty, M. B. (*Journal of Tropical Medicine*, March), describes a case of ainhum in a Hindu washerman, thirty years of age, married, and a native of Sylhet. His parents died while he was still young, but of what diseases could not be ascertained. None of his ancestors suffered, and none of his relatives suffer, so far as he knows, from this affection. It began about eight years ago, on the inner aspect of the root of the fifth toe of the left foot, then the fourth toe of the same foot became attacked, and now the fifth toe of the right foot shows the same process starting. This symmetrical attack of the two little toes seems to be the rule. The roots of the fourth and fifth toes of the left foot are encircled by a well-marked constricting furrow which is deepest on the inner aspect of each. There is no ulceration in the groove, and, beyond a slight feeling of tightness at the spot, there are no subjective symptoms. The distal ends of the toes are somewhat enlarged, are smooth in appearance, but sensation is normal, and the toes seem quite healthy. The fifth toe of the right foot is also affected. The patient's general condition is fair, but scarcely robust; he shows no evident signs of syphilis or leprosy. As to the cause of this peculiar disease, says Dr. Dalgetty, nothing definite can be learned. The patient says that it came on of itself; he never wore toe rings, or had any severe injury to his toes, and there is not the least reason to suspect that he is malingering; indeed, he did not think anything about the condition till the author drew his attention to it.

The only reference to ainhum in Dr. Dalgetty's possession is the article by Dr. Manson, in Davidson's *Diseases of Warm Climates* (pp. 993 *et seq.*). The theories there given as to its probable cause are malingering, a linear scleroderma, and a trophoneurosis; but all are considered unsatisfactory explanations. The author himself inclines to the view that the fibrotic change is analogous to keloid, and is started by an injury or irritation of some sort. Might it not be worth while to consider whether it has any relation to leprosy? We sometimes see leprous parts strangulated off by a fibrotic constriction without much ulceration, and ainhum ends by the toe being cast off. The position of the fifth toe, which almost invariably is the first to become attacked, renders it very liable to slight abrasions and cracks, into which dirt and germs of all kinds are bound to get access, owing to the natives going about barefooted. In a place where leprosy abounds the bacillus of that disease might thus easily gain a footing. The constricting furrow is a band of fibrous tissue, and it might well be that the presence of the *Bacillus lepræ* stimulates the connective-tissue cells to unusual activity, for, in the article on leprosy by Macnamara, in Davidson's book above referred to, occur these words (p. 441): "Without the nourishment which the connective-tissue nucleus secretes, the leprous bacillus can not live; this secretion appears to be the appropriate food of this micro-organism." The reason why the process assumes the form of an encircling band may be solely some local anatomical arrangement of the subcutaneous connective tissue.

In addition to this disease the patient suffers also from a well-marked keratosis of the palms of the hands and soles of the feet. The skin on these parts is raised, thickened, hard and horny to the touch, and worm-eaten or pitted in appearance. It causes stiffness and want of pliancy of his fingers and hands, which interfere with movement. This keratosis began about the same time as the ainhum, and seems to be getting worse. He also suffers from ringworm of the nails. The paper is accompanied by excellent photographs.

Euphthalmine in Ocular Diagnosis.—Dr. A. B. Hale (*Chicago Medical Recorder*, February), in a paper read before a recent meeting of the Chicago Medical Society, says that in using eye drops for diagnostic purposes practitioners have hitherto been obliged to consider three factors in the effect produced. First, and least desirable, is the action of a drug upon the ciliary muscle; for, however valuable this action in combination with mydriasis may be to the ophthalmologist in aiding him to estimate refractive errors, it is always intensely disagreeable and often dangerous to the patient, and is certainly unnecessary for the mere study of the objective condition of the lens or fundus. Second, is the anæsthetic effect, most marked in cocaine, least so in atropine, which is of service only in operations and of no use whatever for diagnosis. Third, and most important, is dilatation of the pupil, the great advantage of which lies in the ready accessibility it allows to all parts of the lens and fundus for the study of changes detectible only by the ophthalmoscope.

To produce the first effect, and it is only the worker in the special line of refraction who need resort to it, paralysis of accommodation or cycloplegia, we must use atropine, scopolamine (hyoscine), duboisine, homatropine, or cocaine, which are named in order of their strength. To produce the second effect, local anæsthesia, we have hitherto had only cocaine, and lately eucaine B, which, though of indisputable and inestimable service to both specialist and general practitioner, yet have disadvantages that have only been overcome since the introduction of holocaine. To produce the third effect, we have hitherto had to resort either to atropine, which is so powerful as to be dangerous and so lasting as to be disagreeable, or to homatropine, too closely allied to atropine for any practical advantage, or to cocaine, which often proves annoying by its slight mydriatic effect or by its primary desiccation of the cornea and subsequent hyperæmia of the conjunctiva.

As before mentioned, holocaine hydrochloride in a one-per-cent. solution is the ideal anæsthetic for the general practitioner, since it possesses that property only. As yet we have no drug to produce accommodative paralysis alone, and in but few cases falling under the ophthalmologist's hands would that be advantageous. Up to the present we have had nothing to produce pupillary dilatation only, until in euphthalmine we seem to have found just the proper drug. Its sole and only use is as a dilator of the pupil, a mydriatic. In the author's experience it causes no paralysis of accommodation whatever. Euphthalmine is another product of the synthetic laboratory, the name being but a trade designation of the hydrochloride of a very complex base from the methyl diacetone group. It bears the same relation to "eucaine B" that homatropine bears to tropacocaine; that is, euphthalmine is the hydrochloride of the mandelic acid derivative of the diacetonalkamine group; homatropine being the synthetic product from mandelic acid and tropine, two derivatives of atropine.

The author's conclusions, independently reached, agree most gratifyingly with those of Treutler and Winselman. To epitomize: 1. Euphthalmine (five to ten per cent. watery solution) produces no subjective symptoms. 2. It causes practically only mydriasis, pronounced but of short duration, which shows itself, as a rule, in thirty minutes; earlier, therefore, than in other drugs. 3. Its effect shows itself earlier in youth than in old age, but the difference is negligible. 4. It has no effect on ocular tension; at least, no contrary reports have as yet appeared. 5. It causes no hyperæmia or ischæmia of the conjunctiva, and it has not any effect on corneal epithelium. 6. Its influence on accommodation, especially in such cases as the general practitioner would most probably use it, is absent. 7. The normal condition of the pupil is rapidly restored. 8. It is apparently non-poisonous. For the general practitioner, for the neurologist, and for office or bedside use by the ophthalmologist, Dr. Hale can not say enough to praise the use of euphthalmine.

A Case of Tubal Abortion.—Dr. Galabin (*Transactions of the Obstetrical Society of London,* xli, part ii) showed a specimen of tubal abortion from a patient aged twenty-three, married two years; no previous pregnancy. She used to suffer from dysmenorrhœa. The history of the case was as follows: On October 1, 1898, menses came at the expected time but lasted only one day, the usual duration being four to five days. Two days after, while turning a wringer, she felt faint for a minute, but continued at the wringer.

On October 12th, while sitting at needlework, she was attacked by acute pain in the abdomen below the umbilicus, lasting for four hours. It was relieved by hot fomentation. The pain recurred every day, but she daily got up and did her work. On October 19th, while she was out, pains came on, accompanied for the first time with vomiting, and she had to be taken home in a cab. On examination there was a yellowish vaginal discharge; no blood. The breasts were enlarged and painful, and the areolæ darkened. Coughing gave great pain, and there was difficulty in micturition. The pain was greatest in left groin. From this time she was kept in bed, and remained in a similar condition. On October 26th she was attacked again with intense pain, accompanied by collapse and pallor, and followed by constant vomiting. For a time she was pulseless. Internal hæmorrhage, probably due to ruptured tubal fœtation, was diagnosticated. Temperature, 97°. Abdominal section was arranged for early the next morning. There was still no discharge of blood *per vaginam.*

At the operation a very large quantity of clot and blood was found in the peritoneal cavity. The clot was partially adherent to the peritonæum, and could not be entirely removed. The ovum, a mass of chorionic villi infiltrated with clot, about two inches in diameter, was found sticking to the fimbriated extremity of the left tube, but not firmly adherent. The left tube and ovary were removed. Among the blood removed from the peritoneal cavity was found the embryo inclosed in the intact amnion. It was about a third of an inch in length, and therefore of not more than about four weeks' development.

The abdomen was closed without drainage, and the patient made a good recovery, except that vomiting continued for two days after the operation. Menstruation recurred on October 30th. The tube removed showed no rupture, and no indications of the spot where it had been dilated. The ovary contained a corpus luteum of pregnancy.

The notable points of the case were that the symtoms appeared as severe as, and indistinguishable from, those of ruptured tubal fœtation; that repeated hæmorrhages appear to have occurred; that the tubal abortion was accompanied by no sanguineous discharge from the vagina; and that neither the pregnancy, the abortion, the hæmorrhage, nor the operation interfered in any way with the normal rhythm of menstruation, except that the period which occurred during pregnancy was very short.

For Ulcers of the Lower Limb associated with Long-standing Congestion.—Dr. Couper (*Glasgow Medical Journal,* February) follows Hebra's practice, which he states to be as follows:

The limb is thoroughly well washed once a day at least, and when possible twice a day, with hot water. A piece of soft soap, the "sapo mollis" of the *Pharmacopœia,* and sometimes, when this is unavailable, the ordinary domestic black soap is then taken, and with a piece of clean flannel rubbed well into the skin, the friction being continued long enough to make blood appear in puncta. Clean cold water is then employed to wash off all that remains of soap and sud, the limb is dried, diachylon ointment applied on strips of lint, and the part bandaged from toe to knee with a roller bandage. It will be noticed that several indications are served by this process. The circulation is stimulated; the thickening in the skin is reduced by the caustic action of the soap; antisepsis is secured. Continued from day to day intelligently and thoroughly, a great deal of improvement is effected, and it is marvelous how the ulcers begin to "creep in," as the saying is, whenever the process of repair has been set up. The author believes that this method is more efficient than the following, which has been called the English method, but which was in reality first employed at Hamburg. The limb is, in the first place, cleansed, but not with the energy necessitated by the last process. The ulcers are dusted with iodoform; and a gelatin preparation, of which the following is a formula, the proportions being variable, is painted from the ankle to the constricted portion below the knee:

℞ Gelatin	15	parts;
Zinc oxide	10	"
Fresh lard	10	"
Glycerin	65	"
Ichthyol or salicylic acid	2	"

M.

While still soft, a layer of cotton is lightly dabbed on, and the whole enveloped as before in a roller bandage. The advantage of this method of treatment is that it has to be performed only once in two or three days, and, as the case improves, once a week only. The jelly contracts as it cools and compresses the blood-vessels of the superficies, thus lessening hyperæmia and producing a sense of coolness and support very comforting to the patient. The antiseptic action of the acid aids very greatly. When the dressing has to come off it peels from the skin quite cleanly, as a rule, without trouble, and when it does not come away readily, a little soap and warm water is very effective. A modification which is sometimes useful is to bandage the limb with a single layer of gauze before applying the gelatin, and this seems to help still further to support the circulation.

Syphilis and Dentistry.—Dr. William L. Baum (*Journal of the American Medical Association,* January 27th), in a paper on Syphilis from Dental Instruments, read before the last meeting of the American Medical Association, after relating six cases of syphilis apparently inoculated by the mouth, possibly during dental attention, says that the syphilitic contagion adheres to all textural elements, and to textural detritus produced by suppuration or bionecrosis in consequence of syphilis. It is most abundant in disorganized syphilitic papules and the sloughing initial chancre. It may easily be carried by instruments, drinking utensils, knives, forks, cigar holders, pipes, and by the hands, but there must always be some abrasion present or it can not be inoculated. Every patient in whom the diagnosis of syphilis is made should, he thinks, before the inauguration of anti-syphilitic treatment by mercurials, be sent to his dentist, in order that any caries of the teeth may be remedied, and gingivitis be treated. These precautions are necessary, and when properly carried out the dangers of hydrargyric stomatitis thus are greatly lessened. It is necessary that the dentist and oral surgeon, to avoid being the carrier of the contagion as well as for his own protection, should possess a knowledge of the characteristic appearance of the different syphilitic lesions met with on the mucous surfaces of the mouth and fauces, and personally supervise the disinfection of his instruments by repeated boiling and immersion in formalin or creolin solutions. It might even be well to keep some instruments for use upon syphilitic cases only. The author deprecates any idea of criticism on the dental profession and thinks that the small number of cases reported from a practice covering several thousand syphilitics is rather a tribute to the care and asepsis ordinarily practised by the great mass of the profession.

Traction of the Tongue in Asphyxia.—In our issue for June 3, 1899, we referred to the use of traction of the tongue by Laborde's method in the resuscitation of the seemingly drowned. According to the *Indian Medical Record* for January 31st, Dr. J. V. Laborde says (reference not given) that the official reports are given of fourteen "actual resurrections" accomplished this summer by means of rhythmic tractions of the tongue in the case of drowned persons who had been under water much longer than the extreme limit—six minutes—in which resuscitation is possible with any other method. No cases are cited except those in which the subjects had been under water ten to twenty minutes, or had been asphyxiated with illuminating gas "a long time." The length of time during which the vital properties may remain latent is therefore much longer than has been hitherto accepted, and Laborde asserts that it is possible to restore to life persons apparently dead, by these tractions of the tongue kept up regularly and persistently for from fifteen minutes to an hour, or, if necessary, for three hours, which he has established as the extreme limit of the duration of apparent death. He has invented an apparatus for life-saving stations, etc., which automatically makes the tractions, although it was not used in any of the cases related. Experiments on animals showed the blood to be full of carbon dioxide, but never coagulated and never below a certain temperature in this apparent death. The heart is only temporarily arrested, and slight tremulations in the myocardium can be distinguished. As respiration is reestablished the organ recommences beating with energy. The same phenomena probably occur in asphyxiated persons.

Validol in the Anorexia and Vomiting of Phthisis.—Cipriani (*Allgemeine medicinische Central-Zeitung*, No. 75, 1899; *Therapist*, February 15, 1900) has employed validol in combating the above-mentioned troubles. The preparation, which was first recommended by Dr. Schwersenki (*Therapeutische Monatshefte*, November, 1897), is a combination of pure menthol (thirty per cent.) and valerianic acid. It is a clear, colorless liquid, and, if given in doses of from fifteen to twenty drops on sugar, acts well as a stomachic. Cipriani experimented on himself and members of his family, and was thereby convinced of the therapeutic properties of the preparation. He also prescribed ten drops of validol on sugar three times a day after meals, and in some cases he also painted the mucous membrane of the larynx and pharynx with it, in pulmonary tuberculosis with stomachic symptoms and severe vomiting. The results obtained were remarkably favorable. Cipriani considers it worthy of attention as a remedy for improving the functions of the stomach, to remove nausea, gulping, and vomiting, to reduce cough and expectoration, to remove fœtor, and to assist treatment in general.

Malaria in the Province of Rome.—Professor S. Santori (*Annali d'igiene sperimentale*, ix, 3, 1899, p. 354; *Boston Medical and Surgical Journal*, March 29th) made investigations (1) to ascertain the monthly prevalence of malarial fever in the province of Rome for the period from 1888 to 1897; (2) to find its relation, if any, to the rainfall; (3) to illustrate its distribution upon a map of the province. A series of charts is presented showing for each district the rainfall of each ten-day period and the prevalence of intermittent and pernicious fever.

The results of these observations show: 1. Two distinct periods—an endemic period from January to the first ten days of July, and an epidemic period for the remainder of the year from that time until December. 2. In the endemic period the disease is mild in character, the cases are few in number, and its course is uniform or regular. 3. An epidemic in spring is almost unknown. 4. The epidemic period always begins suddenly after the first ten-day period of July. It appears to bear no relation to climatic phenomena or to other hitherto known factors. 5. The severity of the epidemic may have relation to the same factors. 6. The rainfall of August and September has no influence upon the development of the primary fever, and has effect only upon the recurrent form.

Bran Baths in Chronic Eczema, etc.—Dr. R. M. Simon (*Birmingham Medical Review*, February; *Monthly Cyclopædia of Practical Medicine*, March) recommends a bath or sponging application made by adding sufficient hot water to water in which bran has been boiled till a temperature of from 95° to 98° F. is attained, to relieve the itching of chronic eczema or the irritation of erythema intertrigo. Friction should not be used in drying, but gentle dabbing with soft linen. A ten-per-cent. boric acid in starch powder may then be applied. [Oatmeal water has been long known to answer the same purpose when used in a similar manner.]

The Kangri-burn Epithelioma of Cashmere.—Mr. Arthur Neve, F. R. C. S. Ed. (*Indian Medical Gazette*, March), says that epithelioma arising on skin surfaces, other than in the neighborhood of mucous membrane, is of rather rare occurrence in England. But in Cashmere the commonest seat of epithelioma is the skin of the thigh and the abdomen.

The cause of this is not far to seek. During the severe winters, and indeed for a great part of the year, every Cashmerian man, woman, or child carries a portable charcoal brazier under the loose gown which constitutes his or her only garment. When walking, this hangs against the abdomen; when seated, it is placed on the ground between the thighs. Slight burns frequently occur, and in very many people there is a mottling of the skin in the exposed parts.

The author summarizes his experience of this form of cancer as follows: Kangri-burn cancer is a squamous-celled epithelioma of the skin. It occurs only on surfaces constantly exposed to great heat and to occasional burns. Secondary gland infection is frequent, and is as malignant as other glandular epithelioma. In the early stage the disease is localized, and a radical cure can be effected by free excision. The permanent cures may be as many as fifty per cent. When the glands of the groin are infected, complete removal becomes exceedingly difficult and recurrences are frequent. It is inadvisable to do very sweeping operations where the glands are extensively involved or the skin over them brawny. The direct operation mortality on four hundred and eighty-five cases has been only 0.6 per cent.

Glossodynia.—Dr. C. Chauveau (*Archives générales de médecine,* January, p. 66; *Medical Review,* February) says that painful sensations in the tongue without obvious macroscopic lesions have given rise to considerable controversy. Verneuil describes glossodynia as "imaginary ulceration of the tongue," and mentions the following case: A barrister, aged forty-two, of fine physique but gouty, complained of intense pain at one spot on his tongue, but the pain sometimes involved half the organ. It had existed over a year and was increased by mastication and speaking. No lesion could be discovered. Antiarthritic treatment was adopted with occasional applications of cocaine to the painful spot. The condition was greatly relieved, but, directly treatment was discontinued, became as intolerable as ever.

Verneuil quotes four other cases and describes the affection as extremely rebellious to treatment. Magitot recognized two forms of glossodynia, rheumatic and neuralgic. The writer, however, makes the following more detailed classification: 1. Glossodynia secondary to trigeminal neuralgia, especially where the inferior dental branch is involved. 2. Glossodynia in cases of hypochondriasis, melancholia, and general paralysis. 3. Tabetic glossodynia, described by Fournier. 4. Hysterical glossodynia. 5. Rheumatic glossodynia. 6. Glossodynia of local causation. The last variety may result from dental caries, the wearing of artificial teeth, and hypertrophy of the lingual tonsil, and also from the use of tobacco, alcohol, spices, and various drugs, such as iodide of potassium. The pain may be continuous or paroxysmal, and may extend ultimately to the lips, gums, and cheeks. Caustics and other applications often do harm. In the writer's experience the thermocautery has given excellent results, though the prognosis is not always good, owing to the extreme probability of relapse.

Letters to the Editor.

THE COUNTING OF A RAPID PULSE.

5 Mitchell Place (East Forty-ninth Street),
New York, *April 7, 1900.*

To the Editor of the New York Medical Journal:

Sir: In your issue for April 7th Dr. J. C. Wilson asks how Dr. J. C. Crist manages to count a pulse of 180 a minute. We can easily count 15 or 20 in five seconds, one twelfth of a minute. The multiplying of twelve times fifteen or twenty needs, so far as I am aware, no "special instrument."

H. B. Sheffield, M. D.

BOOKS, ETC., RECEIVED.

Diseases of the Stomach. Their Special Pathology, Diagnosis, and Treatment, with Sections on Anatomy, Physiology, Chemical and Microscopical Examination of Stomach Contents, Dietetics, Surgery of the Stomach, etc. By John C. Hemmeter, M. D., Philos. D., Professor in the Medical Department of the University of Maryland, Baltimore, etc. With many Original Illustrations, a Number of which are in Colors, and a Lithograph Frontispiece. Second Enlarged and Revised Edition, with New Chapters and Additional Illustrations. Philadelphia: P. Blakiston's Son & Co., 1900. Pp. xix–17 to 887. [Price, $6.]

Progressive Medicine. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, etc. Assisted by Charles Adams Holder, M. D., Assistant Demonstrator of Therapeutics in the Jefferson Medical College. Volume I. March, 1900. Surgery of the Head, Neck, and Chest—Infectious Diseases, including Acute Rheumatism, Croupous Pneumonia, and Influenza—Diseases of Children—Pathology—Laryngology and Rhinology—Otology. Philadelphia and New York: Lea Brothers & Co., 1900. Pp. x–17 to 428.

On Diabetes Mellitus and Glycosuria. By Emil Kleen, Ph. D., M. D. Philadelphia: P. Blakiston's Son & Co., 1900. Pp. vii–9 to 313. [Price, $2.50.]

The Anatomy of the Brain. A Text-book for Medical Students. By Richard H. Whitehead, M. D., Professor of Anatomy in the University of North Carolina. Illustrated with Forty-one Engravings. Philadelphia, New York, and Chicago: The F. A. Davis Company, 1900. [Price, $1.]

Injuries to the Eye in their Medico-legal Aspect. By S. Baudry, M. D., Professor in the Faculty of Medicine, University of Lille, France, etc. Translated from the Original by Alfred James Ostheimer, Jr., M. D., of Philadelphia. Revised and Edited by Charles A. Oliver, A. M., M. D., Ophthalmic Surgeon to the Philadelphia Hospital, etc. With an Adaptation of the Medico-legal Chapter to the Courts of the United States of America by Charles Sinkler, Esq., Member of the Philadelphia Bar. Philadelphia, New York, and Chicago: The F. A. Davis Company, 1900. Pp. x–161. [Price, $1.]

Die Krankheiten der Frauen. Für Aerzte und Studirende. Dargestellt von Dr. med. Heinrich Fritsch, Professor der Gynäkologie und Geburtshülfe, etc., an der Universität zu Bonn. Neunte, völlig erneute Auflage. Mit 271 Abbildungen in Holzschnitt. Braunschweig: Wreden, 1900. Pp. xiv–650.

The Sanitary Condition of Our National Schools. A Paper read before the Statistical and Social Inquiry Society of Ireland, Tuesday, February 20, 1900, by Antony Roche, M. R. C. P. I.

The Present-day Treatment of Diphtheria. By Robert E. Coughlin, M. D., of Brooklyn. [Reprinted from the *New England Medical Monthly.*]

La Pratique des accouchements. Obstétrique journalière. Par Henri Varnier. [Extrait des *Annales de gynécologie et d'obstétrique.*]

Eighteenth Annual Report of the Hospital for Women and Children, Newark, New Jersey. 1898–1899.

Report of a Case in which Defective Speech Results in Some Interesting Derangements of Cerebral Functions. By G. Hudson Makuen, M. D., of Philadelphia. [Reprinted from the *Philadelphia Medical Journal.*]

Defects of Speech. Clinical Lecture delivered at the Polyclinic Hospital, Philadelphia. By G. Hudson Makuen, M. D. [Reprinted from *International Clinics.*]

Stricture of the Œsophagus and Electrolysis by a New Œsophageal Electrode. By Charles D. Aaron, M. D., of Detroit. [Reprinted from the *Physician and Surgeon.*]

Origine et traitement respiratoires d'un cas de dysphonie datant de neuf ans. Par M. Paul Olivier. [Extrait de *La Parole.*]

Ueber Fleischsaft, seine Gewinnung und seine Verwendung in der Krankenpflege. Von Professor Dr. Martin Mendelsohn, in Berlin. [Separatabdruck aus *Wiener medizinische Presse.*]

Ueber die anwendung der Röntgenstrahlen in der Medizin. Von Dr. Eduard Schiff, in Wien. [Sonderabdruck aus *Deutsche Medizinal-Zeitung.*]

Weitere Anwendungsgebiete der Radiotherapie. Von Dr. L. Freund und Dr. E. Schiff. [Separatabdruck aus *Fortschritte auf dem Gebiete der Röntgenstrahlen.*]

Die Behandlung des Lupus erythematodes mit Röntgenstrahlen. Von Dr. Eduard Schiff. [Separatabdruck aus *Fortschritte auf dem Gebiete der Röntgenstrahlen.*]

Miscellany.

An English View of our Army Hospitals.—The following letter, by Mr. George J. H. Evatt, appeared in the *British Medical Journal* for March 17th:

"I recently had an opportunity of visiting the military hospitals, United States Army, in the Philippines. There is one custom in that interesting army that I desire to bring to notice—I mean the disciplinary control exercised by medical commanding officers over patients in military hospitals.

"The American medical officers have direct punishment power over all patients in hospital, and exercise it freely. In the English service the custom is different. There is a compromise, and like most compromises it is defective. English medical officers have authority to command, but no authority to punish, patients. The 'crime' has to hang over until the patient's discharge from hospital, and is then dealt with by the military commander of the delinquent. No more unsatisfactory compromise could exist. It injures all concerned. It lets the patient think he can commit irregularities without punishment, it greatly enfeebles the medical officer's control, and indeed induces crime, and finally it tempts slack or popularity-seeking commanding officers to dismiss the crime, and pose as the true friend of the soldier.

"It is interesting to note that at Netley a patient in hospital is punished while in hospital, receiving such punishment as he may be considered fit to undergo—usually confinement in the prisoners' ward. The authority, however, is exercised by the assistant adjutant-general, and not by the army medical authorities.

"In any future revision of our regulations this fundamental question needs to be dealt with. A soldier admitted to hospital should bring his defaulter sheet with him—a most valuable help in judging of the man's character and habits. All the minor punishments should be available for use against men disturbing the hospital.

"It is not the really ill who give trouble. It is the many venereal patients, the convalescents, and the bad characters who, whether in barracks or hospital, disturb the peace and quiet of their comrades. The bad soldier outside is always the bad patient inside the hospital.

"Of course the title of the medical officer in charge of a hospital should be medical officer or officer commanding a hospital. This title defines responsibility, and is in itself a lesson and a warning to evildoers, as it is to the commanders themselves."

The American Gastro-enterological Association.—The third annual meeting will be held in the Shoreham Hotel, Washington, on Tuesday, May 1st, under the presidency of Dr. Max Einhorn, of New York. The programme includes the following: The Occurrence of Mold in the Stomach, and its Probable Significance, by Dr. Max Einhorn; Sugar, as such, in the Dietary of Dyspeptics, by Dr. W. Gerry Morgan; Concerning the Nature of the Biological Cell Processes in Malignant Neoplasms, and their Significance for the Early Diagnosis of Cancer of the Stomach, by Dr. J. C. Hemmeter; The Appendix and Cæcum from the Standpoint of the Gastro-enterologist, by Dr. A. L. Benedict; Feeding the Sick, by Dr. A. P. Buchman; Starvation *versus* Feeding in Diseases of the Stomach—Illustrated, by Dr. Frank H. Murdoch; A Case of Cancer of the Œsophagus—Perforation into the Left Pleura—Death from Pyopneumothorax—Exhibition of Specimen, by Dr. Julius Friedenwald; Some Clinical Observations on the Position and Topography of the Stomach, by Dr. G. W. McCaskey; Remarks on Stenosis of the Pylorus, by Dr. Henry W. Bettman; Report of an Interesting Case, by Dr. E. G. Cutler; The Mechanics of Digestion, by Dr. F. B. Turck; and Epigæa, by Dr. Charles D. Aaron.

The Medico-legal Society.—At the next meeting, on Wednesday evening, April 18th, there will be a general discussion on The Progress of Medical Jurisprudence in the Nineteenth Century.

The Society of Medical Jurisprudence.—At the last meeting, on Monday evening, April 9th, the paper of the evening, on The Medico-legal Aspects of Intracranial Hæmorrhage, was read by Dr. Otto H. Schultze.

Bilateral Enlargement of the Lacrymal Glands.—At a meeting of the Section in Ophthalmology of the College of Physicians of Philadelphia, held on March 20th, Dr. W. Campbell Posey exhibited a colored girl, twelve years old. She was probably of scrofulous diathesis, having been treated some years previously for phlyctænular ulceration of the left cornea. The swelling in the upper lids had been noticed for two weeks while the child was apparently in good health. There were no signs of active inflammation about the eyes, but both upper lids presented an abnormal degree of fullness, which was found on palpation to be occasioned by the presence of firm elastic bodies, almost symmetrical and slightly roughened on their edges, occupying the position of the lacrymal glands. There were no glandular enlargements elsewhere.

The Late Dr. Winslow W. Skinner.—In our last issue there was a short obituary of Dr. Skinner. We have since learned that he had been doing a large practice in Florence, that he had an attack of influenza, and that, being convalescent, he went to Viareggio in the hope of completing his recovery. There, however, he had a severe relapse, and died a few weeks afterward. According to his desire, his remains were cremated at Pisa. There is said to be great sorrow among the American residents of Florence, for Dr. Skinner's death leaves them without a physician of their own nationality.

An International Congress of the Medical Press will be held in Paris on July 26th, 27th, 28th, and 29th. The American delegates are as follows: From the Association of American Medical Editors: Dr. J. M. Mathews and Dr. Horace H. Grant, of Louisville; Dr. George F. Butler and Dr. George H. Simmons, of Chicago; Dr. C. F. Taylor and Dr. H. A. Hare, of Philadelphia; Dr. Dillon Brown and Dr. Daniel Lewis, of New York; Dr. Thomas H. Hawkins, of Denver, and Dr. Henry W. Coe, of Portland, Oregon. From the American Medical Publishers' Association: Dr. J. C. Culbertson, of Cincinnati; Mr. J. MacDonald and Dr. Ferdinand King, of New York; Mr. Charles Wood Fassett, of St. Joseph, Missouri, and Dr. Landon B. Edwards, of Richmond. From the Medical Press Club of the Mississippi Valley: Dr. I. N. Love, of St. Louis; Dr. Frank P. Norbury, of Jacksonville, Illinois; Dr. Alexander J. Stone, of St. Paul; Dr. John Punton, of Kansas City, Missouri; Dr. Hanau W. Loeb, Dr. C. G. Chaddock, and Dr. O. F. Ball, of St. Louis. Titles of papers should be sent to Dr. R. Blondel, 8 rue de Castellane, Paris.

The Respective Responsibilities of Physician and Patient.—The *Denver Medical Times* for March, in an editorial, forcibly expresses as follows a truth that can not be too often repeated:

"Carelessness in the sick-room resulting from too much air or too little air, overheating, overeating, sudden draughts, together with an undue nervous strain on the patient, will baffle the most skillful physician, and render his efforts to effect a cure null and void. Yet when a patient dies, the question is asked, 'Who was the attending physician?' when it ought to be, 'How faithfully were his directions followed, and how intelligently was the medicine supplemented by conscientious attention to necessary details?'"

An International Congress of Medical "Electrology and Radiology" is to be held at Paris, according to *Science* for March 16th, from the 22d of July to the 1st of August. Professor Weiss, of the University of Paris, is president, and the general secretary is Professor Doner, University of Lille.

A Christian-Science Story.—We have all heard of "fish stories" and "snake stories." Christian-Science stories are bidding fair to attain a special reputation of their own. Here is one cited by the *New York Times* for March 28th from the *Philadelphia Record:*

"An appreciative writer in the *Philadelphia Record* quotes, as showing the length to which the followers of 'Christian Science' carry credulity, the following tale, told to him, he says, in sober earnest by a woman who is an ardent devotee of the Quimby-Eddy cult. 'One day last week,' she declared, 'I was walking on Green Street, near Sixteenth, when I saw a runaway horse galloping toward me. The driver had lost all control over the animal, and as the wagon was swaying from side to side the driver seemed in great danger of being thrown out and severely injured, if not killed. I stepped into the street and prayed for the horse with all my might. It gave one look at me, stopped, and hung its head abashed. But that isn't all. The driver, seeing the horse was submissive, was about to seize the whip, with the intention of lashing the beast, when I directed my prayers toward him. He at once gave up his cruel design, jumped down from his seat, and began patting the horse's head. Then I went on my way rejoicing.' A now forgotten humorist, adds the *Times*, once said that the way to stop a runaway horse was to stand directly in front of him, look him sternly in the eye, and in a firm voice utter the words, 'Lie down, sir!' The humorist didn't go so far as to say that his formula would palsy the arm of an angry driver, but he was evidently on the right track, and doubtless he would have made the added claim if he had lived in these days and learned from 'Mother' or some of her book agents that the fear of passing the bounds of human belief may be put aside with safety and profit."

Prosecution of a German Professor for Experimentation.—*Science* for March 16th states that the case of Professor Neisser, of Breslau, accused of making vaccination experiments on human subjects, has been again brought up in the Prussian Diet. It was reported for the Minister of Education that the question had been taken up by the state attorney, but the prosecution was barred by the statute of limitation. Disciplinary proceedings were, however, in progress.

The Rinecke Prize.—*Science* for March 16th states that the Faculty of Medicine of Würzburg has awarded its Rinecke prize of one thousand marks and a silver medal to Professor J. von Kries for his researches in physiology.

The Hearing of Deaf Children.—Dr. L. Moffatt (*Journal of Ophthalmology, Otology, and Laryngology*, January) says that it is difficult to ascertain just how much hearing a deaf child possesses even when tested scientifically. He does not know what to expect or what is expected of him. While witnessing the testing of individual members of a class, Dr. Moffatt found that in many instances an observer could discover in the eyes of the child when the first sensation was felt or heard. It seemed to be recorded there several seconds before the impulse came to lift the hand in indication of having heard. This the author was led to observe from the fact that he himself had blundered as to the exact moment when his own very sensitive ears had perceived the vibrations; he was too busy watching the mechanism of the recording instrument, and it was only when the buzzing became painfully loud that he realized it, and said, "Please stop."

On the other hand, a child who is known to be totally deaf may, apparently, show signs of hearing. One little boy said that his dog said "ou-ou-ou" when it was hurt, and that the cat said "m-ou" when he spoke to it, yet he had only reasoned it out from the movements of his own mouth in producing these sounds; still, it gave the impression that he heard. Again, a child may repeat the word papa after having it spoken in the ear, but only recognizes it by the two puffs of air which he feels as the *p* is sounded. All these things mislead the unskilled investigator.

Partial deafness is of a varying kind, and a child who may be able to hear a deep tone may fail to hear a high, shrill one. As there is color-blindness, so is there "element"-deafness. John Kitto, of England—the deaf biblical scholar—believed that total deafness was an impassable barrier to the writing of poetry, yet many deaf-mutes have written poems as rhythmical as those produced by the hearing. The author thinks, however, that if careful tests were made it would be found that the writers were sensitive to vibrations, and in that way found the path to the land of rhythm. He believes great good may be accomplished and the deaf much benefited by careful teaching along the lines of *perception,* but it must be done fairly and squarely and under no false titles or misrepresentations.

The Need of Instruction for Parents and Teachers in what Constitutes Normal and Defective Vision.—Dr. W. B. Meany (*American Practitioner and News,* January 15th), in a paper on Defective Vision and its Disqualifying Consequences, says that there is probably not one parent in a thousand who has the slightest idea how large an object—*e. g.,* a capital letter—a child should be able to see at a given distance, say at twenty, forty, or eighty feet. How many parents are there who could say whether any of their children had acuteness of vision, or whether they possessed natural color vision or not? The so-called short-sight and "far-sight" people have been created within historic times, and myopes and hypermetropes have increased enormously within the experience of many who are now living. A myopic or hypermetropic child rarely escapes punishment for errors which are the direct consequences of its defects. It would seem to be a first step in the direction of taking proper care of the eyes that the people generally should know what these organs ought to be able to accomplish. This knowledge would be more widely diffused if we looked upon vision as a physical capability, just as easily capable of recognition as any athletic capacity. Acuteness of distant vision is the proper standard of the function.

Would it not be well, asks the author, for us to lay down some standard for the guidance of parents and others who have children placed under their care, by mentioning that capital letters of a deep black type, an inch and a half high (approximately), and with their limbs three tenths of an inch in thickness, should be clearly legible at a distance of eighty feet in diffused daylight?

The Need of a Generally Accepted Standard of Eyesight for Public Services.—Dr. W. B. Meany (*American Practitioner and News,* January 15th) says that it not infrequently happens that candidates who have been accepted for duties in a special work find themselves incapacitated, owing to their defect of vision or to a progressive form of eye trouble, and compelled to seek employment, and perhaps work for which they are mentally and physically unfit, elsewhere. What we need is a recognized standard and method of examination that will insure uniformity in testing visual acuteness, stating the minimum requirements a candidate must fulfill to render him eligible for entrance into a specified service.

In examining persons for entrance into the railway service there appears to be little or no uniformity in making these tests, each examiner making his tests in his own way, and frequently the lack of a single standard giving the minimum requirement renders the various departments of the service at variance with each other as regards uniformity of results.

It is satisfactory to record that a definite standard regarding defects of vision which absolutely disqualify candidates for appointments in the various departments of public (governmental) service, as well as for railway and trolley companies, and other private corporations, is being formulated, which, if carried out, will hold a fair balance between the requirements for such service and the necessities or weakness of those who desire to enter it. It is recognized, in the first place, that the requirements in question are different in various departments, and that all persons who are likely to be intrusted with the lives of the people, such as engineers, firemen, towerman, draw-tenders, and pilots, should possess normal acuteness of vision, color perception, and hearing; and a standard of $\frac{20}{20}$, without glasses, in each eye tested separately, must obtain to render applicants for such positions eligible. In the navy and maritime service it may be presumed that perfect vision without glasses would be insisted upon, as the glasses would become useless as soon as their surfaces are dimmed by the ocean spray.

The use of glasses in the foregoing instances would be a hindrance rather than a help, for any untoward amount of moisture (fogs, mists, or rain) in the atmosphere would condense upon the glasses and thus render vision with them not only absolutely useless but positively detrimental. A person otherwise employed may be an excellent officer or employee notwithstanding that his eyes require the assistance of glasses; it is essential, however, that the eyes which have the required acuteness of vision when corrected with glasses shall be free from progressive forms of disease which are not uncommon in the "short-sighted," and which tend toward an increase of the affection.

The following regulations are those adopted by the British government for commissions in the army, navy, and civil service. A candidate for the *army* must be able to read at least $\frac{20}{100}$ with each eye without glasses, and this must be capable of correction with glasses up to $\frac{20}{20}$ in one eye and $\frac{20}{40}$ in the other; he must be able to read No. 1 of the near type (reading type) with one or both eyes. Squint or color-blindness renders the candidates ineligible.

Navy.—The candidate must be able to read $\frac{20}{20}$ with each eye without glasses, and the near type at the distance for which it is marked. Color-blindness, squint, or any serious disease of the eye disqualifies.

Indian Civil Service.—A candidate must be able to read $\frac{20}{30}$ with one eye and $\frac{20}{20}$ with the other, with or without correcting lenses. Any disease of the fundus disqualifies. Myopia, however, with a posterior staphyloma, may be passed if the ametropia does not exceed 2.5 D. and the candidate has a visual acuteness equal to that stated above.

Indian Medical Service.—The candidate must have a visual acuteness of $\frac{20}{20}$ in one eye and $\frac{20}{40}$ in the other. Hypermetropia and myopia must not exceed 5 D., and then, with the proper correction by lenses, must come up to the above standard. Astigmatism does not disqualify a candidate, provided that the combined spherical and cylindrical glass does not exceed 5 D., and the visual acuteness equals $\frac{20}{20}$ in one eye and $\frac{20}{40}$ in the other. Color-blindness, ocular paralysis, or any disease of the fundus renders the candidate ineligible.

Prospective candidates for positions for which defects of vision render the candidate ineligible would do well to have their vision tested and to see that they are able to meet the requirements of the above regulations before undertaking a special course of study or seeking an appointment for which certain defects of sight disqualify.

The British government provides, for most departments of the service, that the candidate, when furnished with glasses not exceeding the specified degree, shall possess vision equal to 1 with one eye, and equal to two thirds with the other. This is perfectly simple and intelligible, and will enable any medical man who possesses a case of testing lenses and the necessary type to determine at once all but doubtful cases which may be near the margin one way or the other, and may require special skill or special methods of investigation.

It is to be hoped that the general government, as well as State and municipal authorities, will at an early date promulgate by law a code of regulations setting forth the minimum standard of requirements to render applicants eligible for commission or positions in the various departments or branches of service. By the promulgation of these rules a step will be taken in the direction which will be highly advantageous to all who are interested in the future members of the rising generation.

The Lips as Indicative of Character.—According to *Gaillard's Medical Journal* for March, Dr. A. Bloch, the French anthropologist, attacks the theory that thick lips mark sensuality, while thin and delicate lips denote spirituality, firmness, and elevated character. In a recent paper the scientist states that the shape, size, and color of the lips are purely race characteristics, and that in the hybrid peoples of Europe and America, where there has been such a general intermingling of races, a child may well inherit from not very remote ancestors lip forms that completely belie the actual character of the child, as indicated by the lip theory. Dr. Bloch's investigations satisfy him that really thick lips in the white races are always anomalies or freaks of Nature.

The Influence of the Physician in Domestic Relations.—The *Denver Medical Times* for March, in an editorial on The Ideal Physician, says:

"No man has it in his power to do more good in the world than the sympathetic, skillful, and conscientious physician. He is admitted to the inner sanctuary of domestic life; he can heal or widen the breach between husband and wife that disordered nerves, financial trouble, or mental obliquity may often induce even among those who have the best intentions. He knows that when a woman's nerves have reached a certain tension her husband is a 'fiend incarnate.' He knows that when a man's immoralities have exhausted his life forces, clouded his brain, and hardened his heart, this man's wife becomes of all women most unattractive, and the neglect or abuse which she must endure reduces her to a physical condition which the physician is expected to remedy with medicine. He must hear the complaints of both with the patience of Job and the wisdom of Solomon; he must do what he can do and decline to pretend to do what he can not do. He must distinguish between a temporary mood and a permanent condition on the part of both and govern himself accordingly."

Glass Brick Walls for Operating and Work Rooms.—According to *Gaillard's Medical Journal* for March, F. Kuhn (*Münchener medicinische Wochenschrift,* July 11 and 25, 1899) has employed in building an operating room, facing the east and close to the street, the Falconnier glass bricks, which are small cubes or diamonds of glass filled with air, and fitted and mortared together like ordinary bricks. He finds that no windows are required, as the light penetrates sufficiently, although it is absolutely impossible to see in or through them, even with a light inside at night. A skylight above supplies the direct light, which is reflected and multiplied by the glass walls, without glare. These bricks also modify the temperature of the room remarkably and deaden the noises without. Still another advantage is that walls thus built do not frost over in winter, look clean both inside and out, and can easily be kept aseptic inside, while they are very ornamental.

A Quaint Autopsy.—According to the *Medical Review* for March 17th, among the earliest recorded autopsies in America was one published by John Josselyn, an Englishman who had spent some time in New England. This was on "a young maid that was troubled with a sore pricking at her heart still as she leaned her body or stept down with her foot to the one side of the other. This maid during her distemper voided worms of the length of a finger, all hairy with black heads; it so fell out that the maid dyed; her friends desirous to discover the cause of the distemper of the heart had her opened, and found two crooked bones growing upon the top of the heart, which as she bowed her body to the right or left side would job their points into one and the same place until they had worn a hole quite through."

The Origin of Chinese and Saxon Surgery.—According to *Janus* for April 15th, the first and second numbers of the *Physician and Surgeon,* a weekly journal newly published in London, contain an article by Mr. Lauzun-Brown upon Saxon Surgery and its Origins. Mr. Brown begins with a short account of Chinese anatomy and physiology illustrated with diagrams from native text-books. He thinks that the Chinese incorporated in their medical systems the medicine of ancient Europe, Egypt, and of the Alexandrian University, the lore of Crete, Cyprus, Asia Minor, and Greece, and in later times that they received large accessions from Roman medicine. Scottish surgery, too, must have received a certain impetus derived from direct contact with Roman medical officers. But it is certain that for ten centuries Saxon England was indebted to Pliny for surgical treatment, inasmuch as Sextus Placitus, whose work formed the basis of the earliest Saxon leechdoms, borrowed nearly the whole of his book from Pliny. In regard to medicine and surgery, these islands were mostly indebted to Arabian and Jewish influences, the Arabian medical teaching being itself a blend of Hindu, Chaldean, and Egyptian medical literature which in its later days absorbed the more highly developed systems of Greece and Rome. Mr. Brown illustrates his article with a number of drawings derived from Saxon MSS. showing very graphically the treatment followed in many surgical affections.

Original Communications.

CANCER OF THE STOMACH IN THE YOUNG.

By WILLIAM OSLER, M. D.,
AND
THOMAS McCRAE, M. B. (Tor.),
OF THE JOHNS HOPKINS HOSPITAL, BALTIMORE.

Introduction—Cancer of the stomach in childhood; analysis of the recorded cases—Cancer of the stomach in the second decade; analysis of the recorded cases—Cancer of the stomach in the third decade; report of cases—Peculiarities of cancer of the stomach in the young

Introduction.—Thirty years of age is a convenient dividing line below which we may consider cancer of the stomach as occurring in the young. The first three decades may be divided into two periods, one to the twentieth year, the second from the twentieth to the thirtieth year. Cases occurring during the first period are clinical and pathological curiosities. Those, however, of the latter period are of more interest, since, though a small fraction of the total cases, they comprise a fairly constant percentage and show fairly uniform symptoms. While writers of a generation ago, as Bamberger and Niemeyer, held that gastric cancer could be left out of consideration in the diagnosis of obscure cases in the young, later authors recognize the occurrence of a certain definite percentage at this period of life. In Welch's table of 2,038 cases the percentage was 2.8. Among 1,069 other cases[*] there was a percentage of 2.3. So that among a total of 3,257 cases there were 2.5 per cent. below the age of thirty years. In a series of 150 consecutive cases in the medical department of the Johns Hopkins Hospital six of the patients were under thirty years of age—four per cent.

I. Cancer of the Stomach in Childhood.—The extreme rarity of gastric cancer at this period is shown by the fact that there are only six cases on record below the age of ten years. The literature contains so many allusions to cases without a definite reference that there may be other instances than those here referred to. The same may be said of the cases between ten and twenty years of age. The reported cases in childhood have been subjected to criticism, and none can be positively accepted as arising after birth. It may be noted that Steiner and Neureutter [†] failed to find this condition among two thousand autopsies on children, although it was specially looked for.

The cases below the age of six years are as follows:

1. *Thomas Williamson's case.*[‡] It is curious to find that in nearly all the references to this case it is spoken of as "Wilkinson's." So often is this repeated that a reference to this case as "Williamson's" by Le Vaillaint was at first thought to apply to another case. This was in an infant apparently healthy at birth. In a few days vomiting and emaciation began. These continued and death occurred at the end of five weeks. At autopsy, the pylorus was found to be hard and indurated, with the orifice so contracted as scarcely to admit a probe. The mucous coat was slightly thickened, while scarcely a trace of the muscular tunic was observable. The submucous tissue was much hypertrophied and indurated; it seemed to be the only tissue between the mucous and serous coats. There is no note regarding the histological character of the growth. Doubt is expressed whether this was a case of cancer or of simple hypertrophy.

2. *Cullingworth's case* [*] was in an infant. Vomiting began when the child was ten days old. This, with constipation and emaciation, continued for twenty-nine days until death. Autopsy showed a much-dilated stomach nearly filling the abdominal cavity. The wall was hypertrophied, especially toward the pylorus, from the surface of which a small pear-shaped tumor an inch long arose. This was soft and ulcerating. It completely filled the pyloric orifice. The growth was examined by Dreschfield and proved to be a cylinder-celled epithelioma. Welch [†] considers that the tumor was probably congenital.

3. *Kaulich's case* [‡] was in a child aged a year and a half, with an abdominal tumor, but whether primary or secondary in the stomach is not positively known.

4. *Kuhn's case.* This is referred to by Williams,[#] who considers it to be probably adeno-carcinoma of congenital origin.

5. *Widerhofer's case* [||] was in an infant sixteen days old, and was possibly secondary in the stomach.

6. *Ashby and Wright's case* [^] was in a child aged eight years, who was admitted to the hospital complaining of distention of the abdomen. There was neither vomiting, tumor, nor tenderness. Some months later there was tenderness, and a tumor was felt to the right of the navel. Pain was present. Death followed rapidly. Autopsy showed the duodenum, transverse colon, and stomach matted together. The stomach was dilated, its walls thickened, and the pylorus just admitted the forefinger. On the cardiac side of the pylorus were two small growths the size of peas, and on the duodenal side there was an irregular cavity, the walls having been destroyed by new growth.

Microscopical examination showed the growth to be columnar epithelioma. From the description it would

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[*] Statistics of Kohler, 319; Ott, 444; Reichert, 70; Constatt, 70; Hahn, 166.

[†] *Prager Vierteljahrschrift*, vol. lxxxix, p. 77.

[‡] *London and Edinburgh Monthly Journal of Medicine*, 1841, vol. i, p. 23.

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[*] *British Medical Journal*, 1877, vol. ii, p. 253.

[†] *Loc. cit.*

[‡] *Prager med. Wochenschrift*, 1864, No. 34, p. 269.

[#] *Lancet*, 1897, vol. i, p. 1194.

[||] *Jahrb. f. Kinderheilk.*, alt. Reihe, Bd. ii, p. 194.

[^] *The Diseases of Children*, second edition, p. 99.

be difficult to say positively that the growth was primary in the stomach.

Some resemblance to malignant disease of the stomach is borne by hypertrophy of the pylorus in infants, an affection which Thomson, of Edinburgh, has studied with special care. As already noted, Williamson's case is thought by many writers to have been simple hypertrophy. The course may be rapid and simulate malignant disease, as in a case reported by Pitt,[*] in which death occurred in seven weeks following continuous vomiting and emaciation. Rolleston and Hayne [†] have reviewed the reported cases, seventeen in number. An interesting case is reported by Batten,[‡] at the age of eleven weeks, in which the stomach peristalsis was visible and the pylorus could be felt. Under careful feeding the child improved for some months, subsequently dying from broncho-pneumonia. Autopsy verified the diagnosis.

II. CANCER OF THE STOMACH DURING THE SECOND DECADE.—This is of greater clinical interest, although so rare that we can find reference to or reports of only thirteen cases. The articles by Mathieu [#] and Maniage [||] on this subject are of much interest.

The cases may be spoken of in some detail.

1. *Norman Moore's case* [△] was a girl, aged thirteen years, who presented no special stomach symptoms, but vomiting occurred two days before death. At the autopsy a carcinomatous growth, measuring three inches in diameter, was found at the cardiac end of the stomach.

2. *Scheffer's case.*[◊] A boy, aged fourteen years (in whom the diagnosis of neoplasm of the spleen was made), complained of anorexia and pain. Vomiting of food came on only twenty days before death. A tumor was present in the left hypochondrium. Death occurred after a history of nine weeks, and after the patient had been one month under observation. The autopsy report by von Recklinghausen was encephaloid cancer of the stomach.

3. *Jackson's case,* quoted by Welch,[‡] was in a boy, fifteen years of age, in whom no evidence of disease existed until ten weeks before death.

4. *Lindner's and Kuttner's case,* quoted by Schiff,[‡] was in a sixteen-year-old boy.

5, 6, 7, 8. *Cases of Koster,[‡] Dittrich,[**] Landouzy,[††] and Boas.*[*]—These were all aged seventeen years. The first two showed scirrhus of the pylorus. In the case reported by Landouzy, although there was persistent vomiting without evident cause, with a tumor in the umbilical region, varying in position and character, the question of a gastric growth does not seem to have been considered. The age of the patient and the absence of pain apparently led to error. Death occurred after about seven weeks. The stomach was found dilated, with a scirrhous mass at the pylorus.

9, 10. *Cases of Hirtz* [†] *and Dittrich.*[‡]—These were both at the age of nineteen years.

11, 12, 13. *Cases of Wilde,*[#] *Glynn,*[||] *and Dock.*[△]—These are all at the age of twenty years. Wilde's case was from the records of the Pathological Institute at Kiel. In it there was a large cancerous ulcer at the cardia. Glynn's case presented symptoms for three months. There was a tumor, apparently at the pylorus. At operation involvement of the glands was found, and it was abandoned. Death followed fourteen days later.

Dock's patient had suffered about a year with pain, difficulty in swallowing, loss of strength, ascites, and œdema. There was obstruction to the passage of the stomach tube and no test meal was obtained. The abdomen was tapped and four thousand seven hundred cubic centimetres of fluid removed. In this were found many cells showing caryocinetic figures and atypical mitosis. Fluid was also aspirated from both pleural cavities. Jaundice appeared later. The diagnosis was malignant disease of the peritonæum, lungs, and pleura. At autopsy cancer of the stomach involving the pylorus was found. There was involvement of lymph glands, omentum, pancreas, liver, and bile ducts. The total duration of this case was slightly over a year.

Dock expresses the opinion that cancer of the stomach in early life frequently runs a slow course, and cites a case reported by Mathieu [◊] in a man, aged twenty-five years, whose symptoms began three years before, but there is no proof that these were due to cancer during the whole period. While cancer of the stomach in a young individual may pursue a slow course, as at any other age, yet from the cases collected by Mathieu and from those in the present series under the age of thirty, the conclusion seems to be justified that it is more often a rapid and acute affair.

III. CANCER OF THE STOMACH IN THE THIRD DECADE.—The cases at this period are more numerous and may present difficulties in diagnosis. The proportion—four per cent.—in our series is unusually large. The six cases are reported somewhat fully, since, apart from their age, they all showed features of interest, one of which was the rapid course of the disease. They are given in order of age.

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[*] *Transactions of the Pathological Society of London*, 1892, p. 63.

[†] *British Medical Journal*, 1898, vol. i, p. 1070.

[‡] *Lancet*, 1899, vol. ii, p. 1511.

[#] *Du cancer précoce de l'estomac*, Lyon, 1884.

[||] *Essai sur les tumeurs malignes des enfants*, Paris, 1895.

[△] *Transactions of the Pathological Society of London*, 1885, vol. xxxvi, p. 195.

[◊] *Jahrbuch für Kinderheilkunde*, Leipzig, 1880, vol. xv, p. 425.

[‡] Extracts from the *Proceedings of the Boston Society for Medical Improvement*, vol. v, Appendix, p. 109.

[‡] *Centralblatt für die Grenzgebiete der Med. u. Chir.*, Band i, No. 12.

[‡] *Centralblatt für Chirurgie*, 1888, p. 372.

[**] *Prager Vierteljahrschrift*, 1845, Band viii, p. 116.

[††] *Bull. de la Société anatomique de Paris.*

[*] *Diag. u. Ther. der Magenkrankheiten.*

[†] Quoted by Williams, *Lancet*, 1897, vol. i, p. 1194.

[‡] *Prager Vierteljahrschrift*, 1846, Band xiii, p. 167.

[#] *Ueber das Vorkommen des Krebses bei jugendlichen Individuen.* Inaug. Dissert., Kiel, 1892.

[||] *Lancet*, 1896, vol. ii, p. 1232.

[△] *American Journal of the Medical Sciences*, N. S. 113, 1897, p. 655.

[◊] *Semaine médicale*, 1898, p. 225.

CASE I. *Rapid Course.*—No. 103.* W. S., a man, colored, hospital No. 14,392, aged twenty-two years, admitted November 4, 1895, complaining of nausea and vomiting. His family history was negative. He had been healthy previously, and gave a history of lues and of alcohol in moderation.

Present illness began rather acutely four months before with pain in the epigastrium after eating. Nausea and vomiting came on later. The vomiting became more frequent, and on admission he vomited after every meal. Pain had been severe.

Examination showed emaciation, a dry and harsh skin, and very pale mucous membranes. In the left hypochondrium there was distinct resistance felt on deep inspiration, which was permanent. The area of stomach tympany after inflation was increased. The result of the test breakfast † was as follows: Hydrochloric acid was absent and lactic acid was constantly present. The blood showed hæmoglobin thirty-eight per cent., red corpuscles 4,220,000, and white corpuscles 6,800.

Course.—He vomited frequently, usually soon after food. The temperature rose several times to 101° and 102° F., without any chill or discomfort. Despite some relief to the symptoms by diet and lavage he lost ground during his stay. On December 23d he was discharged. He was lost sight of, and his subsequent history is not known. The following note was made by Dr. Thayer: "Despite the youth of the patient and the absence of palpable tumor, the history of sudden onset, the results of the test meals, and the grave anæmia appear to justify a diagnosis of gastric cancer."

CASE II. *Stomach Tumor with Secondary Growth in the Umbilicus.*—No. 110. C. D., a man, white, hospital No. 15,722, aged twenty-four years, farmer, admitted April 7, 1896, complaining of pain in the stomach. His family and previous history were negative. He had never had any stomach trouble before his present illness, which began suddenly a year and a half before, with vomiting after eating. Pain was present in the epigastrium, and was at times very severe. Ten months before admission he noticed a tumor in the left epigastrium, which has increased in size and become very tender. Since the appearance of the tumor he has vomited every day. In spite of this his appetite has continued good. He has lost over sixty pounds in weight.

Examination showed great emaciation, pale mucous membranes, and a greatly excavated abdomen. In the left epigastrium, about midway between the costal margin and the navel, was a distinct prominence, which descended visibly on inspiration. On palpation a distinct hard mass was felt, which varied in consistence and was somewhat tubular. It was very movable and could be swung into either a horizontal or vertical position. On April 10th Dr. Osler noted slight peristalsis visible in the mass. It could be moved quite to the right of the middle line. Gurgling was evident in the mass. There was a tumor mass in the navel which was of stony hardness and could be grasped and moved. It was slightly tender.

The patient did not gain, the vomiting continued, and he was discharged unimproved. His subsequent history is unknown.

CASE III. *Rapid Course; Tumor; Operation; Death Three Months Later.*—No. 94. A. B., a man, white, hospital No. 13,050, aged twenty-five years, admitted on June 16, 1895, complaining of weakness and debility. His history was negative, and he had previously been well and strong.

Present illness began about eight weeks before, when his friends noticed that he looked yellow. Two weeks later he had a slight feverish attack which kept him in bed for some days. The temperature did not rise above 102° F. He then had loss of appetite and began to lose flesh. He went to New York, and there had an attack of diarrhœa. After this loss of appetite, occasional belching of gas, and a bad taste in the mouth persisted. There was no nausea or vomiting. For two weeks before admission he had lost weight rapidly, nearly fifteen pounds. His physician discovered a mass in the abdomen, and for this he sought advice.

Examination showed moderate pallor, with some sallowness and emaciation. The thorax was negative. The abdomen was natural; but about two fingerbreadths below the ensiform cartilage there was a distinct elevation, which descended with inspiration and could be held down. After the drinking of fluid this was lower, and could be depressed almost to the navel. It was not painful. After inflation the stomach tympany reached nearly to the navel and the mass was moved down and to the right. The test meal gave eighty cubic centimetres of liquid, which contained no hydrochloric acid and gave a reaction for lactic acid. The blood showed hæmoglobin, seventy-five per cent.; red corpuscles, 3,996,000; white corpuscles, 8,500.

The following note was made by Dr. Osler: "There seemed no question that this was a tumor of the stomach, and probably carcinoma. The great mobility, with varying conditions of fullness and emptiness of the stomach, seemed a very important point. Thus the anæmia, the nausea, the failure of stomach digestion, the absence of free hydrochloric acid, and the presence of lactic acid seemed, in spite of the fact that he had only completed his twenty-fifth year, to point to carcinoma of the stomach."

Operation by Dr. Bloodgood on June 18th. On section, at a distance of an inch and a half from the pylorus, there was on the lesser curvature a group of distended veins and a patch of reddening of the serosa, with a little puckering just at the curve. This corresponded to a solid, firm mass, which appeared to extend about an inch on the anterior curvature and farther back on the posterior wall, forming a mass fully the size of an orange. Small nodules were felt on the posterior portion of the stomach.

The patient recovered rapidly from the exploratory operation. He was up in two weeks, had a good appetite, and seemed in every way better. He left for the mountains just three weeks after the operation. During the summer he grew feebler, more emaciated, and died September 25, 1895.

The whole course of the symptoms only lasted for four months. The operation for a time seemed to have a beneficial effect on the symptoms. This improvement after an exploratory operation is referred to elsewhere.

CASE IV. *Rapid Course.*—No. 121. J. P., white, a man, hospital No. 17,801, aged twenty-six years, farmer, admitted November 6, 1896, complaining of abdominal pain and vomiting. His family and previous history was negative. He had been healthy and had worked out of doors.

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* The number given first is that of the case in the present series.

† The routine test meal in the hospital is the test breakfast of Ewald. Unless otherwise stated, this meal is understood.

Present illness began in June, 1896, with severe pain in the abdomen. This came on after he had severely strained himself by lifting a heavy weight, when, as he said, "something had given way inside." This pain continued and became very severe. It was situated about the navel, rarely in the epigastrium. Vomiting came on soon after the onset and was usually just after eating. Twice the vomitus contained blood. He was generally very hungry and felt that he could eat a dozen times during the day. There had been very rapid loss of weight—about seventy pounds in five months.

Examination showed great emaciation. In the left hypochondrium there was a firm mass which moved with respiration. It extended to the median line, showed intrinsic movements, and could be felt to contract and relax under the hands. The diagnosis of contracted stomach with rather general involvement was made. The special features of the tumor will be spoken of elsewhere under that heading. The blood showed hæmoglobin eighty-two per cent., red corpuscles 5,600,000, and white corpuscles 10,000.

The patient was discharged on November 16th, somewhat improved. His further history was obtained from Dr. Primrose, of New Berne, North Carolina. The mass increased rapidly in size and an exploratory operation was decided on. However, the patient's condition was so bad that it had to be abandoned before the abdominal cavity was opened.

The emaciation became extreme, the vomitus was at times bloody and grumous, the pain became so severe that morphine was required, and death followed in December, 1896, after a duration of about six months. No autopsy was obtained.

Case V. *Rapid Course; Secondary Growth in the Liver.*—No. 56. A. W., colored, a man, hospital No. 7,730, aged twenty-eight years, marble polisher, admitted July 17, 1893, complaining of a "lump in the stomach." His family and previous history was negative with the exception of lues.

Present illness only dated back for a period of three months, when he first noticed a mass in the abdomen. Soon after this he lost his appetite and began to vomit. The vomitus was scanty and never contained blood. Pain also appeared which, though not severe, had been constant. The bowels had been loose. There had not been any jaundice. He had lost over thirty pounds.

Examination showed emaciation and pale mucous membranes. The thorax was negative. There was no jaundice. The abdomen was distended; the epigastrium showed an irregular nodular mass, the rounded prominences of which were distinctly visible. The lower border of this mass was within a finger's breadth of the right anterior superior iliac spine. It felt hard and sharp and could be felt to descend on inspiration. Numerous rounded prominences were felt. The liver dullness in the right nipple line began at the sixth rib and extended a distance of twenty-three centimetres. The supraclavicular glands were not palpable. Test meals gave absence of free hydrochloric acid and the presence of lactic acid. "Coffee-grounds" material was present once in the vomitus.

Death and Autopsy.—On August 2d the patient complained of sudden abdominal pain, which was not specially localized. The general condition was that of collapse, from which he did not rally, and death followed in a few hours. At autopsy the stomach was somewhat dilated, with the pylorus imbedded in a mass of glands extending into the portal fissure and attached also to the colon. The stomach contained coffee-ground material amounting to about a pint. On the posterior wall, just within the pylorus, was a soft, fungoid mass, eight centimetres by five centimetres and a half, with an excavated ulcer. The glands along the lesser curvature were involved. Sections showed the growth to be typically carcinomatous, with no tendency to adenoma. The liver weighed six thousand two hundred grammes and reached eighteen centimetres and a half below the ensiform. The surface was studded with elevations which varied from mere points to areas six and seven centimetres in diameter. The liver tissue was largely replaced by neoplasm.

The duration of the disease in this case was about four months. It is striking that the symptoms first complained of were due to the secondary growth in the liver. It is an illustration of the class of cases in which the symptoms are largely those of the secondary growth and in which the diagnosis of the primary seat may be impossible. But for the chemical findings and the vomitus it would not have been possible during life to have diagnosticated the primary growth. The case further illustrates the latency of a stomach growth and how much difference there may be between the duration of the disease and its symptoms.

Case VI. *Rapid Course; a Previous History of Gastritis.*—No. 45. P. K., a man, white, hospital Nos. 627, 1,184, and 6,532, aged twenty-eight years, laborer, admitted January 3, 1893, complaining of pain in the abdomen, with loss of weight. His family history was negative. His previous history was of interest in that he had been twice admitted to the hospital, in 1889 and 1890, with acute gastritis. There had been an interval of nearly three years since his last admission, in which time he had been fairly healthy, without any stomach symptoms during the greater part of the time.

Present illness began about four months before admission, with pain and vomiting. The pain was confined to the epigastrium, continuous, and increased by pressure. His appetite had continued fairly good in spite of nausea and vomiting. He had steadily lost weight, and of late, with œdema of the legs, there had been shortness of breath.

Examination showed a very anæmic man with puffy eyelids. The thorax was negative. In the abdomen, below the right costal margin in the parasternal line, was a mass which descended markedly with inspiration. It extended from the right nipple line to the middle line, and the fingers could be placed between it and the costal margin. Liver flatness did not extend below the costal margin. After inflation the mass was pushed over to the right. No peristalsis was visible. The blood showed hæmoglobin thirty per cent., red corpuscles 3,100,000, and white corpuscles 22,000. The test meals contained blood, showed absence of free hydrochloric acid, and presence of lactic acid.

The patient lost ground rapidly. His temperature was almost constantly elevated to 100° or 100.5° F. in the evening. He died on February 23, 1893, after a duration of between five and six months. No autopsy was obtained.

REMARKS.—In reviewing these cases two features stand out prominently (in all but one)—a striking abruptness of onset and the acuteness of the course. In addition, in four out of the six the disease began with a sudden definite onset. Another (No. 94) gave a history of only six weeks' illness, and might be included under the same head. In the sixth case the enlarged liver gave the first indication of malignant disease. Comparing this group with the cases in the period of five years over thirty, no such acute onset was found in the latter. The opinion that cancer of the stomach in the young frequently runs a rapid course has already been spoken of. Mathieu [*] came to this conclusion after a study of the recorded cases. The cases of this series support this view. It may be noted that all of our cases were in males.

Certain symptoms may be spoken of in detail.

Loss of appetite was considered by Brinton to be a marked symptom in young individuals. Mathieu holds a contrary view, and in his collected cases found that in one half of the cases this symptom did not appear until the last four or five weeks of life. In a quarter of his cases the appetite was retained until death. He considers that this view of the supposed common absence of appetite in the young has contributed to errors in diagnosis. He suggests in explanation of the fact that appetite is so often retained that the mucous membrane is but little changed. In our series there was no loss of appetite in three, anorexia was present in two, and in one the point was not noted.

Pain.—As in cases at all ages, a certain number are free from this symptom throughout. In our series only one was free from pain. In the others it was fairly severe.

Vomiting was also present in five of the cases. The patient in whom it was absent had also absence of pain.

Tumor was present in five cases, in one of which it was only found at autopsy, the enlarged liver having covered it during life.

Ascites was not present in any of this series. Among twenty-seven cases collected by Mathieu it was present in five, of which four were thought to be cirrhosis.

Fever was thought by Mathieu to be generally absent in the young. But three of our cases had fever, and a fourth gave a history of a feverish attack shortly before admission.

Duration.—This is of special interest, and the frequent acuteness of the course in the young is borne out by our cases. Mathieu, in his series of nineteen cases in the young, estimates a mean duration of three months. In eleven cases out of nineteen the duration was within two months and a half, in six of the remainder it was within six months, and in the remaining two the course was one year. The minimum period was between five and six weeks. In our series the duration is known in four instances. None of these were over six months—two being this period and two being four months. Of the remaining two, one with a history of four months was lost sight of, but, as he had lost ground rapidly and did not improve under treatment, it seems probable that the duration would not be much prolonged. The sixth case gave a history of over eighteen months.

Two of the conclusions of Mathieu may be quoted:

1. Cancer of the stomach below the age of thirty has generally a rapid progress in some months, and often ends suddenly by incidents more or less abrupt.
2. Early cancer is not latent—it is often overlooked.

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[*] *Loc. cit.*

A CONTRIBUTION TO THE HISTOPATHOLOGY OF EPIDERMOLYSIS BULLOSA (HEREDITARIA).[*]

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THE cutaneous process epidermolysis bullosa is not a new affection of the skin, a number of cases being found in literature under the same as well as under various other titles. It is claimed that Tilbury Fox first recorded examples of it, and later Payne, but it was Goldscheider [†] who, in 1882, reported it as an affection having a predilection to become hereditary. Köbner,[‡] in 1886, gave it the name most usually attached to it now, and since then a certain number of cases have been reported in England and on the Continent. In 1895 [#] I recorded two cases in this country, and Wallace Beatty [||] more recently has published a most admirable *résumé* of the subject, including not only the cases in the literature, but adding to them three new ones which he had himself observed.

The following example of the process is the third which has come under my care, and it was the most marked of all the cases I have seen. It was under my observation for a long period of time, and its general characteristics and features were so pronounced that its clinical history can not but be of interest:

J. G., a man, aged twenty-three years, was referred to me in June, 1895, by the late Dr. Van Arsdale for a cutaneous disease existing since his early childhood. The patient was of slight build, medium height, poorly nourished, of exceedingly nervous temperament, as evidenced by great excitability on the slightest provocation, and general muscular tremor. He was subject to moody fits and despondency; he had complained of intestinal dyspepsia for some years; he suffered from cold hands and feet, repeated attacks of coryza, and was on the whole in very poor general health, without, however, presenting any symptoms of organic disease.

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[*] Read at the meeting of the American Dermatological Association, held in Philadelphia, June, 1899.

[†] Goldscheider. *Monats. f. p. Dermat.*, 1882.

[‡] Köbner. *Berlin. klin. Woch.*, 1886.

[#] George T. Elliot. *Journal of Cutaneous and Genito-Urinary Diseases*, 1895.

[||] Wallace Beatty. *British Journal of Dermatology*, 1897.

Nothing of importance was obtained on investigation of his family history. His parents were healthy, and his brothers and his three sisters were free from any skin disease. One of the latter, however, was subject to attacks of rheumatism. In none of the branches of his family was any skin affection known similar to the one he suffered from, nor could any knowledge of its existence in his antecedents be obtained. He was the only one affected in his own, his parents', or their parents' generation, and absolutely not a suggestion of heredity could be found on any side—that is, the disease *originated in him* and was *not transmitted to him*, According to his parents' statements, the process developed in his first year of life, appearing primarily on his hands and subsequently on those other parts of his body which became subject to more or less pressure. From its inception to the present time he has never been entirely free from lesions, though he would suffer less in winter and when in good general health. At those times the susceptibility of the skin to the development of the lesions would be diminished, and they could oftentimes be produced only by prolonged rubbing. In the warmer seasons, however, the cutaneous irritability reappeared, the disease would reach its highest development, and lesions would appear with the greatest rapidity and under the slightest provocation. Severe hyperidrosis also existed in these seasons of the year, but in winter there was only a moderate degree of sweating.

The process is said to have been much more intense in childhood, and it seemed to diminish in severity with every succeeding year. Formerly the entire body, even the face, scalp, and neck, had been liable to the production of the lesions, but in later years only severe rubbing or irritation brought them out on these surfaces, and it was therefore a surprise to the patient that this year the original intense susceptibility of his skin had reappeared and he was as liable as formerly to have the bullæ arise on any and every portion of his cutaneous envelope. In fact, he stated that the present attack was the severest one he had had in many years, and it had driven him to seek aid.

When examined, the lesions were found to be widely distributed and occupying those areas especially subjected to more or less mechanical friction. The hands and feet were naturally severely affected, but just above the elbows and corresponding to the line of pressure caused by sleeve holders the arms were encircled by a ring of discrete bullæ of variable size. Similar lesions were noted on the sternum at the points pressed upon by his shirt studs; at the neck, by his collar button; around the neck, following the line of his shirt collar; over the shoulders and on the back, where the suspenders rubbed; on the buttocks and between the nates; in the inguino-scrotal folds, etc. These regions were all severely implicated, and, in addition, bullæ were distributed on various other portions of the trunk, legs, arms, and even on the face. The lesions were in size from a pea to an inch in diameter, recent and intact, tense and filled with a clear, pale-yellow fluid; or, flaccid and having ruptured, they were drying up into thin crusts; or the external wall had been rubbed off and a raw excoriation bounded by shreds of sodden whitish epidermis remained. The older and unruptured bullæ were no longer clear; their contents had become turbid and in some instances hæmorrhagic, as on the hands and feet, the localities subject to more continued and severe pressure. Under ordinary circumstances, after a lesion had ruptured healing took place rapidly and no scar was produced; but in some instances pigmentation had taken place, and there were also superficial cicatrices here and there, due probably to the occurrence of a secondary suppurative process or to mechanical injury to the papillary layer of the corium. Besides the bullous lesions mentioned and the other features incident to their rupture, healing, etc., no other efflorescences were present. The skin appeared perfectly normal between the eruptive manifestations, but it was found to be very irritable, or rather to react quickly and decidedly to any provoking agent, such as friction or pressure. It was thus observed that an area rubbed with the finger or a lead pencil for a space of thirty seconds of time, would in from two to five minutes become reddened, then elevated and œdematous in appearance. The central portion would later become whitish, while the surrounding zone was ill defined, broad and dark pink in color. If the rubbing had been vigorous, an irregular vesicular elevation would arise at the end of fifteen to thirty minutes upon the centre of the œdematous surface, and becoming gradually more distinct would result in a bulla occupying the area of friction. If the irritation applied had been only sufficient to cause the formation of the wheal-like lesion, the objective changes, red zone, etc., would remain for some length of time and then gradually subside, leaving no apparent trace; but there was evidently a loosening up of the epidermis from the corium, as it could later be removed by slight rubbing. No portion of the skin seemed to be exempt from this pathological condition, as experimentally the same changes and symptoms were produced on the extremities, back, abdomen, etc., and that at various times while the patient was under observation. He remained for several years in my care, and during that time the process followed the same course as it had from its inception. At times he would be better, then again worse; amelioration would take place in winter, or when cool weather occurred, but in the warmer seasons a return to the original intensity would take place. The disease was likewise not benefited by any form of treatment made use of, the lesions developing irrespective of any or all remedies exhibited, and finally the patient disappeared from observation and care.

The clinical history of this case presents a typical picture of epidermolysis bullosa. The predisposition of the skin to the formation of bullous lesions after mechanical irritation of any sort was in the patient an inherent fact, existing from the beginning of his extra-uterine life up to the time that he came under observation, and still persisting when he left my care. The characteristic lesions occurred in no way except from irritation applied to the skin; they were unaccompanied by any sensory or other subjective symptoms; they were more readily produced in the warm than in the cold seasons, and were usually associated with a marked hyperidrosis. I would also state that the predisposition was not influenced by the state of his general health, notwithstanding the patient's statements to the contrary, for the reason that while under treatment, and while his physical health improved greatly, he was yet as susceptible to the production of the lesions as he was before, the seasons of the year being taken into account. Furthermore, this case agreed in its clinical history and features with those previously seen by me and with those others recorded in the literature of the subject. Besides, it was presented several times at the meetings of the New York Dermatological Society, particularly at the two hundred and fifty-fifth, when we had the pleasure of the presence of Dr. T. Colcott Fox, of London, England, and yet at no time was the question raised that it was not a case of the process under consideration.

It certainly did not offer every symptom that has been mentioned as occurring in the course of the disease —such as pruritus prior to the development of the lesions; the occurrence of trophic troubles, viz., atrophy of the skin, epidermic cysts, or dystrophy of the nails. Hallopeau,* who has divided the disease into various classes, states that these occurrences are *secondary products,* but nevertheless he bases his separate types upon their existence. He says: "L'existence de notre forme dystrophique montre, qu'il peut se développer dans cette dermatose des lésions inflammatoires; . . . *seulement la marche des accidents montre qu'il s'agit de phlegmasies secondaires."* (Italics mine.) I certainly can not see why a classification or separate types of a disease should be based upon secondary and accidental occurrences. "Des lésions inflammatoires" can arise *secondarily* in any process primarily non-inflammatory without, however, being a part of the original disease. Dystrophic conditions of the nails occur in connection with eczema, psoriasis, etc., without each such case being separately catalogued; scars as the result of secondary processes develop in any number of diseases, and yet we do not, for instance, make distinctions between pediculosis corporis with and without scars; epidermic cysts—milia —were recorded long ago by Hebra and Kaposi as an incident in pemphigus vulgaris, without, however, the claim being made that the case in which they developed constituted a separate form of the disease or a "type." In consequence, it seems to me perfectly proper to protest against the multiplication of forms and types of disease on the basis of *secondary* and *accidental* products, as the result can only be confusion and such obscuration that the original and definite disease becomes finally lost sight of, to be in the end *resurrected* as a brand-new cutaneous affection. The only point in this case upon which the diagnosis, epidermolysis bullosa, could be contested is the fact that it was not hereditary. Other cases have, however, been recorded without contest, and they were similar to it in that regard. Max Joseph recorded one and I another, but, strange to say, Hallopeau, who ignores Beatty's article altogether, claims that Grünfeld's recent case is the only one autochthonous in origin, notwithstanding *that he gives the literary reference to the articles written both by Joseph and by myself.* The question of heredity or non-heredity should not, however, have more than casual weight in making the diagnosis of a disease, in view of the facts pertaining to cutaneous processes in general. Psoriasis, ichthyosis, syphilis, etc., are often found to be hereditary, and yet how much more often is that feature wanting! Besides, for a process to be an hereditary one, there must have been a beginning somewhere; some progenitor of the individual attacked must have developed the disease in order to have transmitted it to his posterity. That being the case, and it must be, even if one goes back to a primeval ancestor of a case at the present day or to the original protoplasm first created, then the process was at that time an autochthonous one—that is, developed without heredity. And having done so once, why should it not do so just as readily again? It would certainly be far more correct to regard this disease as capable of being transmitted than as incapable of arising except through hereditary transmission.

So far as the differential diagnosis between epidermolysis bullosa and other diseases which have similar lesions—bullæ—characterizing them is concerned, there is little difficulty. Erythema multiforme bullosum could scarcely be brought into the category, in view of its acute development and course, its primary localization on the dorsal surfaces of the hands and feet, the extensor surfaces of the extremities, etc., and its successive outbreaks occurring *per se* and at no time from rubbing or through mechanical agencies. It does not begin at or soon after birth and remain in existence throughout the patient's lifetime, but may occur at any time during life.

Pemphigus can be excluded on very much the same grounds, though it may and often does run a chronic course. Still, the bullæ characterizing it occur of their own accord—can not be produced; they arise upon the mucous membranes as well as on the skin; are generally accompanied by systemic deterioration, and very usually the disease results fatally. Dermatitis herpetiformis bullosa should not be confounded with epidermolysis, owing to the intense sensory symptoms which accompany it and the multiform character of its lesions manifested in each attack or in successive outbreaks. Lesions of urticaria bullosa can develop under the influence of irritation applied to a skin subject to an attack of urticaria, but the bulla is not a primary lesion even then, but an epiphenomenon which develops on a preexisting wheal. Besides, when present, it is not the only type of lesion found, but papules, wheals, patches, etc., exist at the same time; the course of the process is acute and never chronic in character, and, finally, though met with more often in childhood, yet it may occur at almost any age. Urticaria factitia (dermographism, autographism) has to be considered also in this connection, as its manifestations can be provoked by external traumatism or irritation of all kinds which may be applied to the skin of a predisposed individual. Urticarialike wheals result under these circumstances, but bullæ or bullous formations have, however, not been noted as a result. In addition, these cases have never been found to be congenital in origin, but to have occurred particularly in subjects affected with disturbances of the nervous system, such as analgesia, partial or total anæsthesia, hysteria, etc.

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* Hallopeau. *Ann. d. dermatol., etc.,* August and September, 1898.

It does not in reality seem possible to confound the disease with any other bullous affection known to us, nor does it seem possible that an error in diagnosis was made in this case; but I have entered more particularly into the question of its right to be regarded as an example of epidermolysis bullosa on account of histological changes found by me constantly present in the skin, changes which suggest the anatomical formation of the bullous lesions in the disease, and which may possibly allow a theoretical opinion to be formed in regard to their existence and development. Previous investigations and studies of the histology of epidermolysis bullosa have been made by a number of observers, but they have been limited to the bullæ themselves (Blumer, Darier, myself, and others). In my present studies, however, these were disregarded altogether, except as will be mentioned later, it appearing to me that nothing more in regard to the process could be learned from them than was already known, and I turned my attention, therefore, entirely to the skin *objectively normal* and unirritated in any way, it having occurred to me, from my previous cases, that possibly some condition, or histological change or state, might be revealed in sections from the apparently normal skin, explaining the easy and ready production of the bullæ. In consequence, no rubbing, pressure, or other mechanical irritation preceded the excision of the portions of skin studied. Their removal was made as rapidly as possible, both with and without prior cocaine injection. Besides these, other specimens of skin were also obtained after an area had been subjected by myself to mechanical irritation, and in addition bullæ which had formed of themselves were excised.

The specimens were hardened in absolute alcohol, passed through ether, thin and thick celloidin, mounted, and cut into as thin sections as possible. Various staining methods were used: hæmatoxylon alone; hæmatoxylon and gold orange; wasserblau-saffranin, etc.; but especially those designed by Unna to demonstrate the granoplasma of epithelial cells—polychrome, decolorized with glycerin-ether; with saturated solution of tannic acid; with xylol and alcohol mixtures; alum-aniline oil, etc. These latter gave the best results and enabled the tissue changes to be accurately studied. (The best and simplest of all was the polychrome, glycerin-ether method.) Dehydration was obtained with absolute alcohol, and xylol balsam was the mounting medium. When the sections were examined with low powers—Reichert 3 and 4—no particular changes in either rete or corium were observed, but with higher magnifications—Reichert 6, Leitz 8, and especially Reichert oil-immersion $\frac{1}{12}$—there came into view with exquisite distinctness those changes which have seemed to me to constitute an important feature both in regard to the existence of the process and to the development of the lesions characterizing it. These histological changes were not occasional, but were found in every section, no matter from what part of the body it was obtained; they did not occur here and there in a section, but throughout its entirety, varying only in degree, and, having once been recognized in properly stained specimens, they were easily seen in those stained in any other way. I would take occasion here to thank my friends, Dr. Fordyce and Dr. Gilchrist, for having kindly looked over my preparations, and the latter for having corroborated my observations on his own cases (report of discussion, *Transactions of the American Dermatological Associations*).

(To be concluded.)

A CONSIDERATION OF

THE NEUROMUSCULAR ELEMENTS IN HIP-JOINT DISEASE,

WITH ESPECIAL REFERENCE TO THE QUESTION OF THE ABOLITION OF PROTECTIVE TREATMENT.

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(Concluded from page 551.)

I KNOW of no better way of bringing out the points I wish to illustrate than to refer to a condition which is frequently seen at the knee joint.

We have all been called upon to decide whether a knee joint, having been incased in the ever-ready gypsum splint, after a sprain or wrench, with or without synovial effusion, was in a condition of serious, perhaps tuberculous, chronic inflammation. Whatever the original condition was, the clinical picture presents a sensitive joint with altered outlines, accompanied perhaps by pain and heat, but always by stiffness. The articulation is not in a condition to perform its normal functions, and the disability is such as to make normal locomotion impossible. The muscular symptoms resemble the reflex muscular spasm of a tuberculous joint; muscular atrophy is present, and the condition suggests a chronic inflammation of a serious type.

Oft-times this condition is the result of a too prolonged immobilization of the joint after some trivial injury. As soon as the joint is released from its enforced imprisonment and is given a chance to resume its normal use, recovery takes place.

While in these patients, as a rule, no tuberculous disease is present, the immobilization treatment, added to a slight traumatic lesion, produces a condition which may closely resemble it; and I have seen patients in this condition where it was very difficult, after months, and sometimes years, of immobilizing treatment, to make a positive diagnosis at one examination. But once the condition has been recognized the treatment is plainly marked out. Use, exercise, massage, etc., soon reestablish the lost functions of the joint.

In a typical case of hip-joint disease in childhood or adolescence we are, generally speaking, dealing with an infectious osteitis involving an epiphysis. If to this clearly recognized pathological condition we add the effects of years of immobilization, etc., the disturbed nutrition and growth, due to the treatment alone, become interesting and even disturbing factors in the general result. While we can not ignore the presence or the influence of this element, I am prepared to say that the one who regards it as important, when compared with the result of the disease itself, makes a serious error; just as one who fails to recognize the presence of a latent but really existing tuberculous disease will be sure to bring about a relapse by prematurely giving the joint too much liberty.

The knee joint above referred to is weak, the products of an acute non-infectious process are present, and it needs active, not immobilizing, treatment. When a diseased hip joint reaches the point of true convalescence, this same treatment is required, and recovery rapidly takes place. But if tuberculous disease in an insidious form is present, the joint requires protection just as much as when the more pronounced symptoms are evident. And it is during this stage of apparent convalescence that many errors have been made.

It is during this stage of apparent convalescence that the claims of the patient and his friends assert themselves. They demand for the joint use and exercise. The ordinary lay mind, and sometimes the medical mind, sees only the wasted limb, the shortened member, the weak articulation, and the disability. The long absence of apparently important symptoms, the prolonged treatment, the continued and enforced disuse of the affected joint and leg have but one meaning to them, and they see cause and effect from the standpoint of the simple sprained ankle or the non-infectious, traumatic inflammation of some of the minor articulations. The question, however, which we have to meet is: Is the joint really well, but weak and vulnerable, or is the disease latent, ready to reappear if the joint is removed from the influence of local mechanical protection?

Between these two conditions the surgeon must decide. To condemn a simple sprained or overtreated joint to further immobilizing treatment is clearly doing an injustice to the patient; just as it is wrong to expose a patient in the quiescent but uncured stage of a progressive tuberculous osteitis to the certainty of a relapse. The former condition, confusing as it is at times to the most acute observer, has added unearned fame to the Christian Scientist, the bone setter, and the osteopath; while the latter has brought undeserved criticism to some of us who have been only too glad to hope, in a questionable case, that the experimental removal of protection to the joint would be followed by good results.

The contrast between the simple traumatic knee and the infected epiphysis at the hip is one that must strike the most casual observer. On the one hand, we have an uncomplicated, non-infectious arthritis, which in its muscular signs and symptoms resembles the joint affected with tuberculous disease. But pathologically there is this great difference between them: In the simple traumatic arthritis—osteitis, if you like—there is no destruction of cancellous tissue and the muscular condition improves with use after the more acute symptoms have subsided; while in the tuberculous epiphysitis there is a distinct involvement of the cancellous structures by an infectious germ, which only needs the element of ordinary use to further develop and multiply the bacilli, and thus increase the area of destructive invasion.

As I have already remarked, the epiphysis is a local centre of growth and development, supplied with nerves from the three great systems. The development *within* the epiphysis of a focus of tuberculous disease, especially at one of the centres of ossification, presents a far different pathological problem from that which occurs as a result of a simple injury acting from *without* the joint with no germ present.

The nerve irritation, and hence the tetanoid spasm, is more pronounced, more persistent, and far more expressive in the former than in the latter. So also we find that the chronic tuberculous degeneration of the synovial membrane does not produce either a reflex spasm or the rapid muscular atrophy of a tuberculous osteitis. The synovial membrane has comparatively few nerves, and, being a simple serous tissue, is not a local nutritive centre, and is further not subjected to intra-articular pressure during passive movements of the joint.

The more I have studied the neuro-muscular signs and symptoms of chronic joint disease, both from a clinical and a pathological standpoint, the more I am impressed with the correctness of the position I took in 1877, and the more certainly does the existence of this tetanoid spasm indicate that the affected joint is something more than simply weak and vulnerable. One thing has certainly been demonstrated (and this could not be said a few years ago), and that is, that the long-continued absence of pain, the relief or correction of the deformity, and the existence of a considerable improvement in the passive motions of the joint do not necessarily indicate that the stage of true convalescence has been reached.

Undoubtedly these conditions are Nature's indication of an improvement in the pathological condition of the joint and that a slow but sure repair is going on.

The tuberculous element is modified, perhaps essentially modified, but we can not always build our hopes of complete repair upon this evidence, especially when the bony structures have been, as they almost always are, altered by disease.

That these conditions are not fully appreciated by the medical profession at large is evident from some recent experiences of mine, and it will not be amiss to relate a couple of them.

Three years ago I saw in consultation with Dr. J. William White, of Philadelphia, a little girl, five years old, who had well-marked hip-joint disease with deformity and abscess. After a very carefully conducted course of treatment, with the use of the traction splint, under Dr. White's supervision, the joint condition had improved to such an extent that Dr. White kindly asked my opinion as to the propriety of discontinuing the protective apparatus then in use. Upon examination, I found no deformity; good motion of the joint in all directions; flexion to ninety degrees; rotation in and out about half the normal; abduction and adduction limited, but very distinctly present, and extension of the thigh stopped in the long axis of the body. The abscess had healed and there was an inch of shortening. The patient's general health was excellent. I gave my opinion that the condition of the joint did not warrant, even with these favorable symptoms, any modification of the protective traction apparatus. My reasons for giving this opinion were based upon the following observations: First, the inability of the patient to bear her weight upon the affected joint without the "flinching" so characteristic of the first stage of the disease; and, secondly, the marked presence of the tetanoid spasm when the attempt was made to exceed the limit placed by this instinctive muscular protection, in the various passive movements of the articulation. Perhaps this spasm was less marked than it is when seen in the first stage of the disease. But the difference was in the quantity rather than the quality, and it was so uniformly present, and so consistently aggressive when subjected to the ordinary diagnostic test, that no one accustomed to make these tests could hesitate. So also the expressive disability of the joint pointed to more than the functional derangement produced by mere disuse. The condition of the joint seemed very favorable to a most satisfactory recovery in time, but it was plain that the real stage of convalescence was not present. I advised the further use of the protective apparatus, an opinion which Dr. White also entertained, and we instructed the patient to continue the apparatus and to use crutches as an additional protection.

It became necessary for the patient to accompany her mother to the Pacific coast last winter. After being there for some weeks a slight accident to the patient led the mother to consult a local surgeon of excellent repute. Apparently disregarding the symptoms which were so evident and so suggestive, he declared the patient to be well, and advised the removal of the apparatus and a practically unlimited use of the leg and joint. The patient, only too willingly perhaps, followed this advice. When she returned in the spring I examined her again. The hip joint was practically rigid, the thigh was flexed and adducted, the shortening had increased three eighths of an inch, the tetanoid spasm was very marked, and pain was present.

Another history presents some interesting features. Four years ago a girl of fourteen years was brought to me with hip-joint disease of two years' duration. The onset of the disease had been so insidious that several surgeons had been deceived, especially by the intermittent limp. Several times during these two years the limp had entirely disappeared, and, the other symptoms being deemed unimportant, no special diagnosis was made. It was not until a sudden avalanche of symptoms occurred, the outbreak which so often marks an insidious invasion of this nature, that the real condition was recognized.

When the patient came under my care the affected limb was an inch and three quarters shorter than its mate; marked deformity, atrophy, and persistent tetanoid spasm, practically limiting all motion of the joint, were present. A careful mother and an intelligently supervised home treatment brought the patient last summer to a point in recovery where the outlook for a most excellent result was very promising. There were about forty-five degrees of motion in flexion and extension of the thigh. There was slight adduction, with flexion of the thigh. The shortening had not increased under treatment. A test of walking at that time without the splint was made, and the expressive flinching of the diseased joint was very evident. The question of the removal of the splint was discussed at that time, and I gave my opinion that the joint was not in a fit condition to bear the weight of the body.

Under these circumstances the patient went abroad, where it would seem she continued to do well, with a protective perineal splint without traction. Hearing much in London of an eminent surgeon, the mother availed herself of the opportunity and consulted him. He advised the mother to discard the apparatus and to give the child unlimited use of the limb and joint. He even doubted that hip disease had ever really existed. His advice was positive and unqualified, and naturally impressed the mother very much. But she declined to take such a radical step without further conference with me. Upon the patient's return I examined her carefully. All deformity had been removed except that the thigh still remained somewhat adducted and slightly flexed. Her gait had slightly improved also. There was a modification of the "flinching" while walking, and the shortening remained the same. But there was in every movement of the joint, as soon as the limit was reached, a distinct tetanoid resistance, and any effort to exceed this limit produced a distinct muscular spasm, though there was no oral expression of pain. In short, the symptoms of the first stage of the disease were present, showing that there had been a most satisfactory improvement and a rapid stride toward recovery.

The mother frankly told me of her experience with the London surgeon, but I was unable to coincide with him and advised the further use of the protective apparatus. My advice was accepted and the patient continues to improve, both as to the amount and quality of joint movement.

I have no doubt whatever if the advice of the London surgeon had been followed that the result which occurred in the patient referred to above would have taken place in this instance.

It is not my intention to tire you with a repetition of similar cases in detail. Some of them, however, have been very instructive. I have seen abscess and death follow the result of a formal consultation under these circumstances, the removal of the protective apparatus being practically insisted upon by the father of the patient and the family physician. I have been obliged in some instances (the patient being removed from my care) to sit calmly by and witness the downfall of years of patient work, and I have myself taken risks, and have on some occasions permitted, rather than advised, the discontinuance of the protective treatment at a critical moment, when subsequent events proved my error in so doing. My best results have been in those cases where I have insisted on the continuance of the protective treatment for a long period, or until I was satisfied that the true reflex muscular spasm had ceased to exist, and until I felt that the damaged joint was in a stage of true convalescence.

I have never seen anything but good result from this prolonged treatment. A shortened limb without deformity and with considerable motion is not a calamity, and even if there is ankylosis in a good position the result is a satisfactory one. A limb which is badly flexed and adducted, even if there is no bony shortening, is a vicious deformity which is not even relieved by osteotomy unless the joint is sound and capable of bearing the weight of the body. I have seen cases of recurrent flexion and adduction of the thigh after osteotomy. Our aim should be to cure the joint disease, and not simply to relieve one of its signs, and if one can maintain the protective treatment for a sufficient length of time one will secure the best attainable result, which in the great majority of cases is a very useful member with motion in many cases, and always without any marked deformity.

On many occasions in my lectures and elsewhere I have called attention to the expressive character of this tetanoid spasm in joint disease. It forms, I think, the only reliable sign both in diagnosis and treatment. It enables us on many occasions to make a prognosis. Its presence also enables us to detect the disease in its first apparent stage, and the modification or persistence of this peculiar telltale neural sign is our principal guide in treatment. And I feel perfectly justified in saying that we can not afford to ignore the presence of this tetanoid spasm at the diseased joint, either in the first or last stage of the disease. We must, however, be prepared to recognize the difference between the true tetanoid spasm and those conditions which simulate it. A joint may be sensitive and the muscles rebel against motion, but this is not the tetanoid spasm of tuberculous joint disease. A joint may be "hysterical," or the subject of a traumatic neurosis, but the muscular conditions are, as a rule, a poor counterfeit of the genuine. A joint may be vulnerable and its muscles may resist passive movement, but it is not the involuntary muscular resistance of a chronic articular osteitis. A joint may be irritated, even inflamed, by traumatism, but the instinctive quality of the true tetanoid spasm is absent.

It is granted that the distinction between these conditions, especially if the history is obscure, is difficult under certain conditions. But these are mostly questions of diagnosis before treatment has been inaugurated. The subject under consideration merely raises the question as to whether a well-recognized condition of reflex muscular spasm which was clearly present in the early stages of the disease is still present. If it is present, what does it signify? The only other question is the one that involves the muscular state which follows long disuse, and this I am sure is not a difficult problem, for prolonged disuse, such, for instance, as is seen in the knee joint after its continuous immobilization with the hip during treatment, does not suggest reflex muscular spasm. We are apt to have a lax knee joint rather than a rigid one under these circumstances, and I have never known any one to mistake the easily overcome muscular resistance at the knee, when it occurs under these circumstances, for the muscular conditions accompanying disease of the hip.

When, then, does convalescence really begin in hip-joint disease? Certainly not so long as the most important symptom which enables us to make a diagnosis is present; certainly not so long as the joint disability is so pronounced as to make the act of locomotion a greater effort than that occasioned by simple disuse; certainly not when deformity is present, and certainly not when the demand comes from an unnecessary fear on the part of the patient or his friends that the prolongation of the protection to the joint is going to produce a useless limb.

It is not the function of this brief essay to deal with the question of the especial form of the protective apparatus to be used after the more urgent symptoms and signs of the disease have been mitigated by treatment. But there is one point which I wish to emphasize. One great danger to the joint and limb lies in a too prolonged immobilization. In other words, an actual immobilization is not necessary after a certain amount of motion has been reached as the result of this immobilization. On another occasion * I submitted the following proposition: "Within the limit set by Nature (*i e.*, by the reflex muscular spasm), motion I believe to be harmless." † Call this a dictum, if you please, but it is the dictum of experience, and I wish to emphasize it on this occasion. And I may say as an additional dictum based upon the same experience, and amplified by ten years of further observation, that it is our duty to adapt our protective apparatus to the changed conditions brought about by treatment. The only novelty in this proposition lies in limiting the motion of the apparatus *inside* of the point fixed by the tetanoid spasm. This can be done, however, very easily by any one, and if this rule is followed we shall have much better results, much sooner obtained results, better joint motion, and a more useful limb, without deformity and with less bony shortening. But the surgeon who carries out a strictly-speaking immobilization treatment to the end will find the problems raised in this paper to be more difficult of solution in every way, and he will imperil the result he is most anxious to obtain—namely, a joint without deformity and a fair amount of motion.

But to remove all apparatus and to place the patient on his own resources during the apparent, not the real, stage of convalescence is a serious error. To condemn a patient to a uselessly prolonged mechanical treatment is a confession of ignorance, but it is a greater confession of ignorance to remove a necessary protective apparatus when the symptoms indicate its further use. And further observation and experience enable me to emphasize the statement I made in 1891 ‡ before this body—namely, "I believe that in all but the exceptional cases, a relapse as to the deformity or the disease, or both, is likely to occur as the result of the traumatism of ordinary locomotion, unless the proper mechanical protection is maintained until the articulation is free from true reflex muscular spasms or is ankylosed."

When this point is reached and the joint is free from reflex muscular spasm, the problem is no more difficult of solution than that which presents, for instance, in the traumatic, non-infectious, knee inflammation already referred to. The joint may be placed at once upon its own resources with a gradually increasing use of the now simply weakened limb, and by the judicious use of electricity, massage, etc., the limb and joint will soon recover from the effects of the prolonged disuse. The muscular atrophy may never wholly disappear, but the limb as a whole will do its work wonderfully well, and if, as we have a right to expect in many cases, a considerable motion returns to the joint as a result of our treatment, the patient will walk without a limp, and in those case where ankylosis occurs without deformity a most useful limb will result.

28 EAST THIRTY-EIGHTH STREET.

THE
PRESENT STATUS OF THE WIDAL REACTION
AS A
DIAGNOSTIC TEST IN TYPHOID FEVER.*

BY ARTHUR R. GUERARD, M. D.

No method of diagnosis, perhaps, has excited greater interest among physicians in recent years than the so-called Widal or serum reaction in typhoid fever. This reaction, as is well known, is based upon the fact that living and actively motile typhoid bacilli, if placed in the diluted blood or serum of a patient suffering from typhoid fever, within a very short time lose their motility and become aggregated into clumps. Though this peculiar agglutinating influence was originally observed by Pfeiffer, and independently described by Gruber and his pupils, Widal deserves the credit of having first practically applied the reaction on a more extensive scale as a test for the diagnosis of typhoid fever. Since Widal's announcement, some three years and a half ago, of his method of performing this test, the serum reaction has been confirmed by numerous other observers, and it has now become one of the recognized tests in bacteriological laboratories in all parts of the world, not only for routine diagnosis, but especially for the identification of obscure cases of typhoid infection and for the differentiation of the typhoid bacillus.

It is true that the medical journals have contained not infrequent reports of isolated cases in which the reaction was wanting throughout the disease, but in which the clinical symptoms or even post-mortem findings seemed to point to the diagnosis of typhoid fever. Many cases have also been noted in which the reaction was present, though the evidence apparently favored some disease other than typhoid. It has been repeatedly found, moreover, that the blood or serum of patients who have once had typhoid fever may retain for many months its agglutinative reaction. Again, it has been shown that in a certain proportion of cases in healthy persons and those not affected with typhoid fever there may be a delayed moderate reaction (due to substances different from those in typhoid blood, though having similar effects, as in horse serum, for instance) in a dilution of 1 to 10 of blood or serum, the proportion originally proposed by Widal. These observations have not unnaturally tended to cast considerable doubt in the minds of physicians having but little experience with the reaction upon the practical value of the test for diagnostic purposes.

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* On the Principles of the Mechanical Treatment of Hip-Joint Disease. *New York Medical Journal*, November 23, 1889.

† This statement, to a certain extent, has been emphasized by Dr. Brackett, who says (Reflexes in Hip Disease): "The table in this series of cases shows an almost constant relation between the spasm and the increased condition of the reflexes, and granting a value to one we must give the same to the other. The indications are that it is an evidence of an irritable condition of the joint rather than a sensitive condition, and would apparently be of value in determining the amount of freedom to be allowed the diseased joint."

‡ *Op. cit.*, *New York Medical Journal*, November 28, 1891.

* Read before the Society of the Alumni of the City (Charity) Hospital, December 13, 1899.

On the other hand, attention has been drawn to the fact that the majority of supposed non-typhoid affections in which the serum reaction has been observed were diseases in which the differential diagnosis is often extremely difficult and which are not uncommonly mistaken clinically for typhoid—viz., malaria, low continued fevers, pernicious anæmia, acute miliary tuberculosis, etc. It is evident in such cases, when the Widal reaction is present, that, without absolute bacteriological findings or an autopsy, the conclusion that the condition is not one of typhoid infection is not justified; and with regard to malaria, it is well to note that the two affections may occur together. Occasionally, also, the Widal reaction is very late in appearance, not occurring before the fourth or fifth week of the attack, and sometimes only during a relapse; so that, unless these cases are closely followed up and repeated examinations of the blood made throughout their entire course, the reaction may be missed. Finally, it has been established that, although a slow moderate reaction in a 1-to-10 dilution of blood or serum may now and then occur in non-typhoid cases, rarely, if ever, excepting in typhoid infection, does a complete reaction take place in this dilution within five minutes, and that in dilutions of 1 to 20 or more a quick reaction is never produced in any febrile disease other than that due to typhoid infection, while in typhoid fever such a distinct reaction often occurs in dilutions of 1 to 50 and over.

Furthermore, although in observations of this kind, which depend not only upon the conditions under which they are made, but also upon the experience of the observer, no great reliance can be placed on statistics; still, the results which have been obtained from the Widal reaction, according to recent statistics gathered from various sources throughout the world, are so remarkably uniform in character that we must admit them to be approximately correct and conclusive. Thus, from collective investigations made by Cabot, Anders and McFarland, Stengel and Kneass, ourselves, and others of large series of cases submitted to this test, it appears that positive reactions have been obtained in over ninety-five per cent. of the typhoid cases in which repeated examinations were made, while in non-typhoid cases similar reactions have been observed in only five per cent., some of which, it may be assumed, had had previous typhoid fever, or at least a mild form of typhoid infection.

The method which is now employed by us for the serum test is as follows: A dilution of blood or serum is first made in the proportion of 1 to 10. In the case of dried blood (a drop or two of which has been collected on a glass slide) it is dissolved in a little water and then mixed with the typhoid culture, the degree of dilution being determined by the color. By previously making test solutions of dried blood in water of known proportions and noting the color, the dilution may be accurately enough gauged for all practical purposes. With serum (as collected from a fly blister, and which is preferable for examination, not only because the dilution can be more exactly made, but on account of its containing less fibrinous deposit), one part of serum is added to nine parts of the broth culture. This latter should contain living and actively motile isolated bacilli, although bacilli which have been killed by such substances as bichloride-of-mercury solution also give a fair reaction. If there is no reaction when the mixture is observed in the hanging drop—that is to say, if within five minutes no marked change is noted in the motility of the bacilli, and no considerable clumping occurs—the result is regarded as negative, and no further test of the specimen is made. If complete clumping and immobilization of the bacilli occur within five minutes, this is called a marked immediate typhoid reaction, and, though no further test is necessary, the reaction may be confirmed with the higher dilutions up to 1 to 20 or more. If, however, upon examination of the mixture there is no marked reaction, but the bacilli only show in the first few minutes an inhibition in their motility and a tendency to clump, but which is not complete within five minutes, it becomes necessary to test this with dilutions at least up to 1 to 20, in order to measure the strength of the reaction. If in the 1-to-20 dilution a complete distinct reaction takes place within thirty minutes, the result is considered positive—that is, that the blood has come from a case of typhoid infection—while if a less complete reaction occurs it is regarded as only probably typhoid. The time allowed by many observers, especially abroad, for the development of the reaction with the higher dilutions is from one to two hours, but thirty minutes seems to us a sufficient time limit. Positive results obtained in this way may be taken as conclusive evidence of the recent or previous existence of typhoid infection in the patient. A previous attack of typhoid within a period of one or more years, exceptionally, vitiates the value of the reaction. On the other hand, the absence of reaction in any one examination does not exclude typhoid; so that, if the case remains clinically doubtful, repeated examinations should be made every few days.

In conclusion, from a review of the published reports on the subject, and from an experience in the health department laboratories with the practical application of the Widal reaction extending over three years and including the examination of fifty specimens or more a week, it may be said that this test, when performed with due regard to the avoidance of all possible sources of error, is as reliable a method of diagnosis as any other bacteriological test at present in use. It is simple and easy of performance by any one versed in bacteriological technique. The serum reaction is never present in other diseases, if correctly tested and in the proper dilution, as is so often the case with the diazo reaction of Ehrlich. It is better adapted for routine employment than are any of the methods now in use for isolating the bacillus from fæces or urine. It is certainly safer than spleen puncture; and it is not so difficult as, though far more reliable than, the leucocyte count. The reaction does not appear, as a rule, during the first few days of the disease, but it is usually manifest before the rose-colored eruption appears, though occasionally it is very late in appearance, and in rare cases may be entirely absent. A negative result can not be considered as having much significance, but a positive reaction when present—previous typhoid or an earlier reaction being excluded—is almost as strong evidence of the existence of the specific infection as the actual demonstration of the typhoid bacilli.

Thus, while the Widal reaction has undoubted limitations, it is, nevertheless, of inestimable value as an aid to the clinical diagnosis of irregular or mild cases of typhoid fever.

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MYSTICISM AMONG THE NEGROES.

By F. JULIAN CARROLL, M. D.,
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In all ages and among all nations certain of Nature's phenomena have been supposed to possess more or less significance in the affairs of man.

The astrologer of old consulted his stars with eager inquiry before any matter of importance was entered upon, and "thanked his lucky stars" if perchance his predictions were verified. Like the sensible man that he was, however, he always left himself room to "hedge," and his prophecies were on the "heads-I-win-tails-you-lose" principle.

Now, while the astrologer is, of course, a back number, the beliefs and superstitions which called him into existence and made him a necessary member of society have in a measure survived his demise.

Many persons of good education and environments are still believers in things unnatural. Occultism is rather a fashionable study. Now, if this is true of people of superior intelligence, can we wonder at the strange beliefs of that people with only the civilizing influence of a few generations behind them—that exotic race transplanted from African savagery to the American slavery from which it has but recently emerged—the negroes?

Superstition of one kind or another is widespread throughout this whole race, but for genuine, full-blown credulity and steadfast belief in things supernatural the old South Carolina rice-field negro and his phosphate-mining scion pluck the watermelon.

Among the better classes we find great influence ascribed to certain astronomical changes—notably those of the moon.

For instance, I have a much-respected and very influential friend who follows the time-honored calling of "muntly nuss." Like most of her profession in this part of the world, this old lady is of the colored race and has all the traditions of her people and calling. To her mind a child born on "de wanin' ob de moon" must needs be "poley" and badly nourished, while one born on "de fillin' ob de moon" is correspondingly lusty and well developed. Needless to say, this old woman's predictions are invariably *post hoc*, which to a thoughtful observer rather detracts from their value. Among her *clientèle*, however, she is regarded with great veneration, and whatever she says goes—including the physicians! As a natural consequence she is treated with becoming respect by the members of the medical fraternity.

As we descend the scale of negro civilization to the lower classes we are met with stranger and more outlandish beliefs and customs, as, to cite illustrations, the use of certain animal and even human excretions for medicinal purposes, the carrying of the left hind foot of a graveyard rabbit to neutralize the effects of witchery, the wearing of an eelskin around the wrist to prevent drowning, or, as some think, to cure cramps, etc.

But the queerest and most firmly fixed superstition of the whole lot in a large class of negroes is the belief in "spells" and voodooism. Among the lower classes this "spell" idea runs riot, and, try as you may, you can not get rid of this phantom; like Banquo's ghost, "it will not down."

Only a short time since a negro man entered my office and promptly began a long and rambling discourse on nothing in particular and everything in general. Knowing this to be a characteristic of his race when they want to tell something which they rather hesitate about communicating, I patiently waited for this man to come to the point. Finally, after a prolific display of oratory, unexcelled by even a modern prize fighter, my patient declared himself the victim "ob de spell." I was not up on "spells" and wanted to put my patient off until I could look into the subject a little more carefully, and, with a spirit of accommodation entirely worthy of a druggist, I offered in the meanwhile to treat him for "something just as good—if not better." Indeed, I rather sneered at the idea of his "spell" and tried to convince him that such luxuries were above his station. This did not work worth a cent, however. He thought he knew a spell when he saw one, and he had not the faintest idea of being juggled out of it by a few fine words.

He had come by this spell honestly (which, to say the least, was a unique experience for him), and he clung to it now with touching tenacity. Had he not stayed up nights with this spell, nursing and coddling it? Had he not kept it out of harm's way, shielding it from sunshine and rain? And now, after all these months of care, was he to lose this companion of his bosom in this commonplace manner? Oh, no; if go it must, it must go in regulation fashion! Must go out "lack a rorin' lion," as my patient explained.

I was at a loss to know how to accomplish this leonine exit. I looked through all the medical literature at my command without gaining the slightest information on this important matter. Either the authorities were singularly ignorant or singularly negligent on this subject.

Finally, I was inspired to consult an old physician of my acquaintance who had practised extensively among the negroes, and who, as luck would have it, was a veritable mine of knowledge in this direction. In other words, as he modestly expressed it, he was "hell on spells," and he gave me the desired information freely and cheerfully.

His mode of treatment as detailed to me is so simple, so unique, and so eminently successful that I venture to give it in full for the edification of the public and the benefit of those who may themselves suffer from, or have relatives and friends the victims of, "de spells."

As explanatory of the following treatment, I may say that the negro believes his "mis'ry" to be caused by a reptile inserted into his economy through the medium of a "spell," and that until he can rid himself of this parasitical pest his recovery is impossible.

As to the treatment, then: The paraphernalia are simple and inexpensive, the necessary implements consisting of a sharp scalpel or knife, a tumbler, a candle, and a live lizard or frog—preferably the lizard.

The technique is a little more complicated, but can easily be mastered in one lesson. It is as follows: Having notified your patient that at a certain hour of a specified day or night you will visit him and expel his tormentor, you repair to his house with the utmost punctuality at the appointed time. Entering the sick-room, you go promptly to the patient's bedside amid profound silence from the inevitable gathering of relatives and friends, and standing over him you make a number of mystic passes over his body until you have located the seat of his "spell." The spell-ridden area is now laid bare, and with much ostentation you proceed to mark it out in chalk. This done, you place your patient upon a table and darken the room, if it is daylight, or blow out the lights, if it is night. This latter precaution will, however, usually be unnecessary, as among this class of negroes light is apparently regarded as injurious, and is rigidly excluded from the sick-room.

Next, having made the assembled onlookers go into another room, if such there be, or out of doors, if no such room exists, you light your candle and begin your *séance*.

The first step is to place the inverted tumbler over the lighted candle. By this means the air in the tumbler is exhausted and a partial vacuum created, which, as we shall see later, is an important part of the programme.

A rapid incision is now made through the skin in the area previously mapped out. This cut must be sufficiently deep to draw blood rather freely. This done, the inverted tumbler is quickly placed over the wound and the patient's attention called to the resulting phenomena.

The interior of the tumbler having, as explained above, been converted into a partial vacuum, the blood is sucked up in bubbles, the tumbler meanwhile turning and wabbling around in a manner weird to behold.

During this process the operator should repeat an incantation suitable for the occasion. *Bonus, bona, bonum,* solemnly and impressively delivered, will be quite effective and won't strain the doctor's knowledge of Latin too much.

If the doctor is very learned, however, and should desire to completely subjugate his enemy and win the undying admiration of his patient, he may get off something like *veni, vidi, vici et sic transit gloria mundi et sic semper tyrannis, e pluribus unum,* etc. This array of knowledge may be turned and shuffled around at will, and for the purpose in hand will prove an undoubted *vade mecum.*

After keeping up this conjuring business for a reasonable length of time, place one hand over the tumbler to prevent the patient from seeing your manipulations, and with the other deftly insert the live lizard under the tumbler.

The lights are now turned on and the relatives and friends called in to witness the result of your skill and magic. The lizard naturally struggles violently in his confinement and soon manages to cover himself with the escaping blood, thus destroying his identity and assuming an appearance really blood-curdling.

The impression produced upon patient and audience alike is immediate and profound. The sufferer attributes all his sufferings to the mysterious little beast struggling around under the tumbler, and his gratitude at his deliverance is unlimited. "Teng Gawd! Teng Gawd!" he will devoutly exclaim then. "Look a' da lettle debbil a-jumpin' roun' dere—das de way him bin a-doin' een mah in'ards. Bress Gawd, Doc, yuh got im out. Him wud a suttin kill mah ef um stay een dar enny mo'—en das de Gawd's truf!"

The assembled company will assuredly assent with solemn unanimity: "De Gawd's truf!"

The doctor now takes the lizard from under the tumbler and puts it carefully away in a paper box prepared for the purpose, assuring the audience as he does so that the box is of a special make and material, and that it is the only kind of box which will hold this terrible reptile safe. He likewise carefully collects all the implements used in the process of "spell" ex-"spell"ing. This done, he wisely takes his departure, so that the awe of the negroes for the sorcerer and the instruments of his sorcery may not be lessened by familiarity.

The result, so far as the afflicted one goes, is all that could be desired. The pain "dat move frum mah hed ter mah back en chuns roun' in mah stumick" disappears as if by magic (which, indeed, is not to be wondered at). The patient's desponding spirits revive at once, and health is completely restored to one who has been ailing for months.

The foregoing recital may seem to be a fantastic distortion of facts to suit the writer's fancy, but I give the details substantially as I got them from the old physician previously alluded to. He in turn "caught on," as he says, to this treatment by watching the antics of a voodoo doctor who had a great reputation for curing spells. Later, from questioning negroes, I have convinced myself that such scenes as I have attempted to picture are not at all of infrequent occurrence.

As to the good results of this treatment, they are, of course, purely mental, as the disease is purely mental, and the really astounding improvement in a patient's condition after getting rid of this "spell" is an interesting evidence of the potentiality of the mind in causing as well as in curing disease. This is a lesson that a great many physicians would do well to bear in mind. The "Christian Scientists" long since grasped this fact, and the knowledge of it constitutes their sole power in the cure of disease.

HEPATIC ABSCESS.*

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IN presenting this subject to the members of this society I do so reluctantly, and venture to deduce my observations only, and to give as clear an idea of its pathological phases as my knowledge will permit; and, while I would not attempt to disclose any startling ideas of technics, it is my purpose to review a rare case of hepatic abscess which it was my pleasure to watch, and in which I rendered professional services through a more or less protracted period.

The unusual occurrence of this localized phenomenon makes it far from being a simple matter in coming to a positive diagnosis, and accordingly a clear conception of its anatomical relation to the surrounding structures would avail much in the differential diagnosis, after the pathological changes had become manifest.

Three fourths of this important organ we find located on the right side of the body, and about one fourth to the left of the median line. Covered by the peritonæum, it lies close to the diaphragm, and within its arch. It is at this point where the invasion of a diseased liver with a pus cavity rarely penetrates. It is held in place by the suspensory ligament and by the intra-abdominal pressure from below against its lower surface. It rarely extends over to the left as far as the apex of the heart. The lungs and heart glide over its upper surface and it moves slightly over the stomach during the respiratory act. Its close relation to these organs is of inestimable value in making a physical examination, and, as palpation and percussion prove to be our principal diagnostic weapons in many serious hepatic disorders, the importance of these physiological facts need only be mentioned. Upon its lower border we find the right kidney, colon, and a portion of the stomach.

In young children considerable allowance should always be made in measuring the area of diseased tissue, as this organ is always proportionately larger, and in health can be frequently recognized below the border of the ribs in the axillary line; while in the adult, in a normal state of health, this organ can rarely be felt, except in persons of spare frame and where there is somewhat of an unusual amount of flexibility of the lower ribs.

In conducting an examination of the right hypochondrium, where there is a suspicion of any serious hepatic disturbance, the patient is placed in the dorsal position and allowed to breathe freely and easily. Sometimes breathing with the mouth open, a deep respiratory act, will help materially in outlining the margins of the liver and reveal any possible tumefactions that may be present. The mapping out of an abscess in this region depends largely upon its size and situation. Very small abscesses are difficult to recognize even on the anterior surface of the liver, and if their formation is on the posterior surface their detection is almost impossible; yet, with the information which we derive from surrounding conditions, we are led to be gravely suspicious of the local disturbance. If an abscess has been forming for some time and its development has been progressive, we are then more likely to find the right lobe involved, and its edges can be plainly outlined far below the border of the ribs and often extending quite over to the umbilicus. It is in this almost extreme position during the act of deep respiration that we are enabled to derive much important knowledge for diagnostic purposes, for by gentle palpation at the edges of the liver its elevation is made very plain in harmony with the action of the diaphragm. The bulging is uniformly general all over the right hypochondrium, and will nearly always cause a slight restriction of the respiratory movements on the right side, and accordingly an accelerated respiration. On account of these pathogenic conditions we are often led to believe that we are dealing with a carcinoma, localized pleurisy, an abscess of the abdominal wall, hydatids, or a possible perihepatitis. In suppurative hepatitis, even at an early stage, it should be remembered, there are hectic fever, rigors, and recurring sweats, which do not often occur in any of the foregoing diseases. Pain is a prominent symptom, which accompanies nearly all diseases of the hepatic region, except hydatids, and the latter, together with carcinoma, rarely ever show any pyrexia. Probably there are no diseases which may cause more confusion in diagnosis than cancer of the liver, intermittent fever associated with gallstones, and suppurative hepatitis, yet, with a careful survey of this region, reenforced by the three subjective symptoms of hectic fever, rigors, and night sweats, a correct diagnosis of abscess of the liver can be accomplished with little difficulty. Many points of distinction could be mentioned, but I shall not burden your time and patience with them.

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* Read before the Iowa Union Medical Society, at Cedar Rapids, Iowa, Tuesday, July 11, 1899.

I was first called to see this patient on January 13, 1899.

H. L., aged twenty-four years; has always worked on a farm until the past eighteen months; residence in town. Upon interrogating him it was learned that about two weeks previous to this visit he had started on a short trip, and on the way had been taken with a hard chill, followed by great pain in the right side near the lower border of the ribs, as near as he could then locate it. Having but a few miles to travel, he had managed to tolerate the situation until he reached his destination. Upon leaving the train he had been seized with severe nausea and vomiting. He had been taken to a neighboring hotel in a small town, and, after an hour or two, continued his trip overland in a carriage to the home of a relative, where a physician had been summoned. His complaints had been summed up and a diagnosis of *la grippe* with severe pulmonary complications rendered. He had been treated in accordance with the facts, I suppose, although, in spite of the medication and care, the pain in the side continued, and after a period of two weeks the patient had become desperate, fearing that his condition was not improving, and had made a bold break for home.

In making the physical examination, I found the patient anæmic, and that he had lost considerable flesh during his absence. The skin was sallow, with an icteroid tint, and he had a muddy complexion, yellow infiltration of the conjunctivæ, and patches of dark pigmentation on the skin just at the lower border of the ribs, slightly to the lateral surface. The tongue was heavily furred, the pulse 95, the temperature 101° F., and the respiration fluctuating at first from 20 to 25. He had a dry, hacking, teasing cough, and expectorated only a little mucus. His countenance showed much anxiety and fear, and it was not until I had impressed upon his mind that he was entirely free from pulmonary disease that he regained his confidence. Two years before I had conducted this patient through an attack of lobar pneumonia, and he could think of nothing more serious than a repetition of it.

My attention was next directed to the hepatic region, where considerable tenderness was found in the right lobe of the liver (this organ being plainly observed by palpation just below the ribs), but it had not extended very far into the abdominal space. The abdomen was rather flat and the bowels were filled with hardened fæces. A history of irregular passages from the bowels and more or less constipation had been observed, but nothing of importance had been attached to this abnormal condition by the patient until the examination took place. He complained of not having been able to accomplish as much manual labor as usual during the past two or three months, and that he became tired out easily. At the time of the examination he was eating freely of everything, but the food did not seem to strengthen him at all. He felt dull and sleepy most of the time.

My first care for the patient was to empty the loaded bowels and relieve, so far as possible, the severer symptoms of a congested liver, and, accordingly, I gave sufficient doses of the mild chloride of mercury to effect the desired result, and applied counter-irritants to the affected side, with apparent benefit. I saw my patient every other day for two or three weeks and had an opportunity of observing that the liver was gradually filling up a large portion of the abdominal space, extending well over toward the umbilicus. The bowels became distended with gases from day to day; occasionally considerable tenderness was present, and much tympanites, and I began to fear that I was likely to have a case complicated with typhoid fever. This state of affairs existed throughout the sickness, but did not produce any serious annoyance.

The area of dullness prevailed throughout the space where the liver was found, and the same condition was observed on the lateral portion of the normal hepatic region, and from day to day extended upward until dullness was quite distinct in the lateral space occupied by the right lung. Motion was greatly impeded in the right side of the chest on account of the great pressure, and there was the most profound tympanitic resonance over about two thirds of the chest wall of the right side next to the median line. Never having seen this peculiar condition under like circumstances, it attracted my particular attention.

The temperature range in this case varied from 100.4° to 104.8° F.; pulse erratic, but seldom found beyond 120; respiration from 20 to 30. The most notable changes which attracted my attention during the course of this trouble were on the second day of February, when the patient had a very hard chill, followed by an excruciating pain in the upper part of the thorax, about two inches below the clavicle and midway between the axilla and sternum, and passing through to the scapula. Moderate means of alleviating his suffering were negative, and I was compelled to use morphine with atropine hypodermically for his comfort. This so quieted him that I was enabled to keep him easy with other medication for four days, when he was again seized with another rigor and unbearable pain in the same location, which was relieved in the same manner as before, but was not as easily kept in subjection. I then concluded that on the following day I would aspirate my patient. During the evening of that day, at about 10 P. M., a messenger called at my office and stated that the patient was coughing severely, and could not rest. I sent medicine for the relief of the urgent symptoms, and they called for me again at twelve, while I was visiting another patient, and returned again at 2 A. M. I saw the patient at about 2.30 A. M.; found the cough very trying and constant. The patient and his relatives were badly frightened, and the former showed signs of great depression. When I entered the room he was bolstered up in bed, expectorating into a cuspidor, which had been emptied the third time within as many hours. The attendant told me that shortly before midnight, when the hard coughing appeared, in one attack the cuspidor was completely filled, the expectoration coming up with such force as to fill the nasal passages and causing marked dyspnœa. The character of the expectoration was pathognomonic of the existing condition, showing that the abscess had penetrated through the bronchus, and that a clear, creamy pus was being evacuated. The relatives seemed to think that something must be done immediately to stop the cough, their impression being that the lungs had broken down, and that, unless the coughing was stopped, the patient would cough himself to an untimely end. I explained to them what had happened, but the unusual quantity of pus thrown off caused no small amount of worry to them. In order to pacify the relatives, I gave the patient a hypodermic injection, as he could not swallow on account of the pus coming into the throat so rapidly. My injection accomplished but little in modifying the cough, as I had previously anticipated. After a few hours, when short intervals between the paroxysms would admit, I gave my patient free stimulation, cleansed the mouth occasionally with diluted listerine, and made him swallow small quantities at intervals of from one to two hours. On account of the large quantities of pus coming into the throat, it was impossible to prevent a small portion of it from passing into the stomach and disturbing digestion materially, but, with the free use of listerine and occasionally flushing the stomach, the digestive function was kept in an almost normal condition. After a few days the patient's appetite became greatly increased, yet he experienced much unpleasantness during the meal hour from paroxysmal gushing of pus through the air-passages into the throat. This I attributed largely and almost wholly to the adjacent pressure from a distended stomach against the pus cavity, and it was not until this space had become quite shallow that this trouble ceased to annoy him while eating. From day to day I was enabled to follow the line of dullness and perceive the simultaneous increase of volume in the respiratory motion. This favorable state of affairs continued until the coughing ceased and pus failed to appear with any expectorated secretions. From the time of the rupture of this abscess in the bronchi until it ceased discharging, a period of thirty-one days elapsed, and during that time eighteen quarts of pus were evacuated. From this time the patient made a progressive and uneventful recovery, rapidly gaining strength and a corresponding increase in flesh. His appetite has been excellent ever since, and he has been enabled to do a fair amount of labor. At this writing he has not the physical endurance that he once possessed, and he is slightly impeded by an occasional uneasiness in the right side, which, however, is gradually subsiding. It is to be expected that many months and, perhaps, a year or two, will elapse before anything like a perfectly normal function will prevail in this region.

Occasional pain will at times be experienced in the hepatic region after apparent recovery in these cases, which is largely due to slight adhesions following the inflammatory stage. This is likely to alarm the patients, and is an uncomfortable sensation. In view of this condition, which frequently occurs, I have been in the habit of giving my patients the benefit of an alterative, and the best results I have obtained in my few cases of this disease have been with the iodide of potassium, given in from five- to seven-grain doses three times a day for several months. And I never omit to give daily doses of from one to two drachms of sodium phosphate or Carlsbad Sprudel salts, sufficient to cause free and easy stools from once to twice daily. If I find the motion too light in color, a quarter of a grain of podophyllin is given night and morning in addition to the other medication, until the evacuations are distinctly dark. You will rarely fail in bringing about these results in a few days. I also direct my patient to go through passive gymnastics with the arms uplifted, throwing the shoulders well back and taking full and deep inspiration. This exercise at an early period of convalescence should work admirable results in gently and gradually breaking up any local adhesions that might exist, when used in conjunction with the alteratives.

A great deal of contention has arisen among medical authorities as to the most conservative method of treating these patients. The question of surgical interference is often hard to decide. On the one hand, it is well known that hepatic abscess is progressive from day to day, and the patient's chances of recovery constantly grow less if we depend upon Nature to provide the healing process. On the other hand, although in a surgical procedure some risks are always assumed, even in the hands of the most skillful operators, yet, with rigid antiseptic methods at our disposal, we should not hesitate to resort to heroic methods if we have the courage to do so.

I remember that about twelve years ago a case of this kind occurred. I was called to see the unfortunate man during the night, and, on account of the severe pain, I gave him morphine hypodermically two or three times; but this, in addition to other medication, did not relieve him permanently, and, accordingly, a physician from Cedar Rapids was summoned to take the case. He gave the patient his best attention for a few days, but the latter did not respond favorably to the treatment, and another physician was called in. The patient, however, gradually grew weaker and finally died. The two physicians into whose hands this case fell are both skillful and conservative practitioners, and at that time it was doubtless their verdict to trust to Nature rather than to resort to radical surgical methods.

Loomis advises opening the abdominal wall, provided adhesions have taken place between it and the liver, and, if adhesions are not present, producing them before opening into the sac. Lyman is very conservative about what method to pursue, alleging that with the most skillful surgical interference nearly fifty per cent. of these cases prove fatal.

Osler does not favor surgical measures at all in pyæmic abscess and suppurative pylephlebitis, unless the abscess is distinctly pointing, but in an abscess associated with dysentery a reasonable hope is afforded; he would, however, defer any operation if the patient was expectorating pus.

Just how we shall determine in which direction an hepatic abscess will rupture (excluding a pointing abscess on the abdominal surface) is as much of a query as how we can render a favorable prognosis by surgical interference. If the contents of the sac open into the bowels or into one of the bronchi, we have a more reasonable hope for the patient than anything we might promise from surgical methods. To sum up the prognosis in these cases, it is but fair to say that it is unfavorable from almost any standpoint.

SOME PRACTICAL REMARKS ON CLINICAL EXAMINATION OF THE BLOOD.*

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The present writer would not be understood as approaching so extensive and recondite a subject as hæmopathology in any other spirit than that of a learner. These remarks aim at nothing more pretentious than to meet some of the early difficulties of the practising physician in clinical examination of the blood, and to point out how readily they can often be met in the physician's own office—to the vast improvement of his diagnostic ability and the immense enlargement of his scientific conception of disease.

Without a report on the general characteristics of the blood no examination of a case of any importance should be deemed complete. R. C. Cabot has well said that the state of the blood is at least as important as that of the urine. Any one who will take the trouble to examine the blood of all his patients for a short time as a routine measure will meet with constant surprises, so constant that if at all concerned for the welfare of his *clientèle* he will never fall back into the old neglectful ways.

In a clinical examination of the blood the more vital facts to be ascertained are (1) the number and character of the red corpuscles; (2) the number and character of the white; (3) the proportions of the various kinds of white; and (4) the presence of parasites.

As to the *number of the red and white corpuscles*, a variety of counting machines are in use. A dozen or more are described and figured at length in von Limbeck's *Klinische Pathologie des Blutes*. Of this book we may remark, in passing, that it is perhaps the best of the larger works covering the entire subject, and is characterized by a philosophic breadth of view. In English, Cabot's *Clinical Examination of the Blood* is much the best work I know of. The plates in this volume are invaluable, and are probably the best in print anywhere.

The blood counter most in use in this country, and the only one I have worked with to any extent, is the well-known Thoma-Zeiss instrument. Detailed descriptions are easily found. I wish to give only some practical hints as to the avoidance of error and vexation in the use of it. The drop of blood to be used should be drawn not with a round needle (a puncture), but with a small, pointed *blade* of some kind, tenotomy knife, sharp-pointed scalpel, or flat surgical needle, which will actually *incise* the capillaries and make the blood flow without pressure. Blood got by *expression* is worse than useless; the serum from the tissues will indefinitely dilute the drop and make the count gravely misleading.

Another point is that for an accurate count (and no other is worth having) at least two successively prepared chambers should be counted. If they are similar, the average may be taken; if different, a third must be counted. Numerous experiments have shown that the error with experienced workers will not be more than two or three per cent. About three months of reasonably frequent practice should be allowed before one begins to trust his enumerations.

The pipette, too, requires care. It should be protected from great variations of temperature, and after using should be washed at once with salt solution, alcohol, and ether (in the order named), and dried with a Politzer bag or a small syringe. At the Pædiatrics Laboratory we use simply the rubber attachment of a cheap atomizer (a valve at either end of the bulb), and find it answer every purpose. Blowing through the tube has many objections—not only the moisture and impurity of the breath, but the dubious cleanliness of the mouthpiece, which in a large hospital or laboratory can not always be kept as one's individual property. If a second tube is fitted to the "distal end" of the rubber bulb of the atomizer spoken of, the bulb can be turned about and used for suction also; here it serves the additional purpose of relieving the head and eyes from an uncomfortable posture when drawing the blood, and of regulating to a nicety the quantity of blood and salt solution admitted into the pipette. I can recommend this little device as a sparer of time and discomfort.

When the half hour needful for counting is not at one's immediate disposal the blood once mixed with sterile salt solution can be kept in the pipette (*properly corked*) for half a day or more without great harm, and can be carried readily from the bedside to the office. It is very important that a new counting chamber should be thoroughly tested by comparison with one of known standard readings, and not less so that the cover of the chamber should be a reasonably perfect plane. A very slight warp in the cover glass makes an enormous error. The chamber itself should never be cleansed with anything except soap and lukewarm water. Alcohol and xylol soon wash the cement entirely away.

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* Read by invitation before the Society of the Alumni of the City (Charity) Hospital, December 13, 1899.

For counting white cells much the easiest way is to buy the "white-cell mixer" at once. Enumerations of the whites can be made with it accurately in from five to fifteen minutes. About one hundred should be counted as the basis of computation. If only the red cell pipette is to be had, perhaps the easiest way (several methods are proposed) is to estimate in square millimetres the field of the medium-high, dry objective used. The "Leitz 5," for example, covers almost exactly one quarter of a square millimetre. If we then mix the blood as usual in the red pipette, and count the whites in successive fields of the No. 5 objective until we have counted about one hundred, the computation can be readily made as follows: Twelve successive fields will give us, say, ninety-six leucocytes; 12 fields $= 12 \times \frac{1}{4}$ sq. mm. $= 3$ sq. mm. So $96 \div 3 = 32$ leucocytes in one square millimetre. Divide by the depth of the chamber and multiply by the dilution of the blood for the result.

General or local cyanosis engorges the capillaries and is sure to give an unreliable count. Impending circulatory failure does the same. As a control for this the appearance of the dried and stained specimen must be looked to.

Experience shows that the color of the skin, lips, and mucous membranes as an index of the character of the blood is deceptive. It fails (according to the best observers) in from ten to fifteen per cent. of the cases. No one who wishes to do careful work will be content with conjecture when an instrument of precision is at hand.

Character of Reds and Whites.—Much more valuable than counting is the study of stained films. An easy method of making them is as follows: Take seven *square* cover glasses (the round covers are obsolete). If new, drop them into strong nitric acid for three minutes; take out with forceps and wash off the acid; immerse for a moment in ninety-five-per-cent. alcohol; polish with clean hands and a soft and perfectly clean linen cloth until clean and smooth. When held up to the light they should show no lint or dust still adherent to their surfaces. In cold weather they should be flamed in a Bunsen or alcohol flame just before using. Cleanse the patient's ear or finger tip with alcohol; prick quickly with a sharp-pointed blade; wipe off the first two drops of blood that exude; take up the third drop (before it gets larger than a pinhead) on one of the clean covers held in a forceps; lay this cover quickly on another cover; the blood will spread evenly and promptly, without pressure, if the previous steps have been taken *secundum artem.* Draw the covers quickly apart in the plane of their surfaces and dry the blood in the warm air high above a flame. When successfully done, the blood will lie in a thin and homogeneous film on the glass. Do the same with the rest of the six covers, the seventh being provided simply to replace one of the others that may get soiled or broken in working. The films may now be kept indefinitely until stained.

Easy as this sounds, it requires with some workers not a little practice; and the practice should be got by repeated examinations of normal blood in order that one may not suddenly be caught unprepared in an important emergency.

Some competent workers prefer to make spreads with the polished margin of one small slide upon the surface of another larger slide. It is probably a matter of individual experience and preference as to which is the better method.

To *fix the blood,* the best way at present described is to heat the covers slowly to 150° C. in a sterilizer. The heating should take at least ten minutes. As soon as the thermometer (and be sure it is a reliable one) reaches 150° C. take out the covers and stain.

For *staining* there are numerous formulæ. The latest formula for Ehrlich's "triacid stain" is the best I have so far worked with. None but Grübler's colors should be used in compounding it. Results should be compared with a "show specimen" until one has gained confidence in himself. Only one or two of the worst films should be tried first, in order to guard against error or accident, and to have other films for such other stains as in later study may appear desirable.

Very rarely we meet with blood that seems absolutely to resist staining. The number of these cases will lessen as technical experience grows.

In respect to the *differential proportions of the whites* the percentages are to be estimated by an actual count of the several varieties as they are observed in a systematic search of a stained film.

Of the primary diseases of the blood, chlorosis, pernicious anæmia, and leucæmia can be diagnosticated, as a rule, in from a few minutes' to an hour's study of the Ehrlich stain.

Parasitic Diseases.—As to the *Filaria sanguinis,* I have not been fortunate enough to see a case of it, either in my own dispensary or in two of the hospitals in the city during three years past; I therefore pass it by with the remark that the parasite, when present, can be found in the fresh blood if the examination is made at night with a medium high dry lens.

I conclude with some notes on the technique of blood examination for malaria.

A distinguished teacher and practitioner of medicine in this city recently said: "The finding of the malarial parasite is one of the most fruitful and beneficent medical discoveries of the last quarter century"; and these words are not too strong. It should, and easily may, be in the power of any ordinarily intelligent physician to make his own examinations for malaria. To prepare fresh blood for examination, take three covers and three slides, cleaned as above. Draw the blood (a minute fresh drop); touch the cover with it; drop each cover on a slide; see that the blood spreads without pressure. Put by in a warm place if immediate examination is not practicable. By coating the margin of the cover with vaseline the blood will often stay good for an hour or more, though, of course, the fresher the specimen the better the chance of showing the characteristic amœboid movement of the plasmodium, which is invaluable for identification.

Rules.—Try to get the specimen *just before, during,* or *just after* the paroxysm. Negative examinations at other times are indecisive, though erratic forms of the parasite are often discoverable on the "off day" in small numbers, one in two or three spreads, and are, of course, characteristic if found. In the Good Samaritan Dispensary during the four years past I have succeeded in about two thirds of the cases (rough estimate) in finding the parasite on the "off day."

Quinine in any quantity is apt to expel the tertian and quartan parasites (not always the æstivo-autumnal) from the capillaries in twenty-four hours. In the Cuban soldiers of 1898 I found actively motile germs in one young fellow who had had large doses of quinine for over thirty-six hours; in my experience in our climate this is exceptional.

Barring the threatening cases where the clinical signs are clear, I believe it bad practice to ruin one's chances of a clear diagnosis by giving quinine before the parasite has been found to be either present or absent by a fairly conducted examination. About half an hour, if needful, should be given for the examination of each of two fresh spreads. A mechanical stage adds vastly to the comfort and precision of the work. The average time in ordinary tertian cases in our locality for a skilled worker is from two to fifteen minutes. If two well-made spreads examined on two successive days by a competent man at the right time fail to show malarial parasites, the patient has some other disease than active malaria.

When fresh specimens can not be examined, dry films, *properly made* and *properly stained,* will be nearly as good; but the spreading, staining, and examining require much larger technical skill than successful work with fresh blood. Perhaps the best quick way is as follows: Spread as for the Ehrlich stain; fix in the vapor of formaldehyde for two minutes and a half; stain a trial cover in pretty strong alcoholic eosin (sixty to seventy-five per cent. alcohol) from three to ten minutes; wash off and drop the cover on a concentrated filtered solution of "rectified" (Grübler's) methylene blue for one minute; wash again, dry, and examine hastily to see how much the nuclei of the leucocytes have stained. If they are blue, the plasmodia, if present, will also be blue; if not, return the cover to the stain for a minute or two more. Unfortunately, every new blood has to have this trial examination; but the rule once ascertained, the other spreads of the same blood can be stained easily and quickly. The methylene blue must be used for a minimum of time; it discharges eosin rapidly. Broken leucocyte nuclei and anomalous color precipitates will confuse the inexperienced at first, but one will soon learn to identify the parasite by its being nearly always inside the red cells, by its irregular shape, and by its pigment. The amœboid motion is, of course, lost. One who is interested in studying the finer structure of the malarial parasite, the "chromatin," the flagella, etc., will find the Romanovsky stain almost a necessity. The best account I know of this stain in English (and that not very complete) is to be found in Thayer's *Lectures on the Malarial Fevers.*

121 East Twenty-sixth Street.

Therapeutical Notes.

A Bromoform Mixture.—*Lyon médical* for March 18th attributes the following, on the authority of the *Journal de médecine de Bordeaux* for March 4th, to Dr. Gay:

℞ Bromoform	18 grains;
Chloroform	12 "
Rum .... q. s. to make	1,800 minims.

M.

A coffeespoonful contains three quarters of a grain of bromoform and nine twentieths of a grain of chloroform. The advantage of this formula is said to be that, as bromoform dissolved in alcohol is precipitated by the addition of water, the addition of the chloroform makes the solution miscible with water in all proportions.

Amyloform as a Substitute for Iodoform.—Amyloform, said to be a compound of formaldehyde and starch, is recommended by Heddaens (*Münchener medicinische Wochenschrift,* 1899, No. 12; *Presse médicale,* December 20, 1899), who confirms Bongartz's observations to the effect that it is not poisonous or irritating and is an efficient antiseptic. It is used only in powder.

For Simple Excoriated Surfaces.—The *Canadian Journal of Medicine and Surgery* for April quotes the following from the *Medical Press and Circular* of unspecified date:

℞ Calamine	2 drachms;
Europhene	1 drachm;
Starch	1 ounce.

M. To be dusted on the affected surface.

For Warts.—The *Journal de médecine de Paris* for April 8th gives the following formula:

℞ Salicylic acid, Alcohol at 90°, } of each	15 grains;
Ether	37½ "
Collodion	75 "

M.

The surface of the wart is painted daily with this application.

Kaposi paints the wart and the adjacent tissues daily with the following:

℞ Bichloride of mercury	1 part;
Flexile collodion	30 parts.

M.

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NIGHT TERRORS AND DAY TERRORS.

While a good deal has been written on the subject of so-called "night terrors" occurring in children, there are but few observations on record describing the analogous condition of "day terrors." These night terrors consist in essence of attacks of fright occurring in children suddenly during sleep and without any apparently adequate cause. They are said to take place chiefly, if not exclusively, before puberty, to be associated with some cause of reflex neurotic disturbance, such as prolonged dyspeptic troubles, threadworms, adenoids, etc., and often in subjects with an individual or family history of rheumatism, valvular disease of the heart, and epilepsy or other neuroses. The children in whom they occur are usually excitable, quick, and often precocious. The attacks are thought to originate in the dreams of the subconscious stage of sleep.

Considerable light is thrown on the subject by a recent paper of Dr. George F. Still on Day Terrors (Pavor Diurnus) in Children, published in the *Lancet* for February 3d. Dr. Still records three cases of attacks resembling closely those known as night terrors, but occurring while the children were wide awake and in full possession of their faculties. They did not lose consciousness, but recognized people about them, and had no visual hallucinations. They imagined at times that some person whom they could not describe was coming upstairs, or that "some one was coming after them." At other times they could not explain why they were frightened. All they knew was that they were terrified at some unknown and indefinable thing.

In addition to his own three cases, Dr. Still recalls also two cases described by Henoch (*Lectures on Children's Diseases,* Translations of the New Sydenham Society, 1889, vol. i, p. 241), obviously of similar character. One important point is that in four out of the five cases thus brought together, night terrors had either preceded or were coexistent with the day terrors. Further, it is pointed out that attacks occurring at night do not necessarily originate during sleep, but may possibly have their inception when the child is awake; whereas, on the other hand, attacks occurring in the daytime may occasionally have their origin in sleep. Dr. Still therefore suggests very reasonably, as it seems to us, that the terms "sleep terrors" and "waking terrors" should be substituted for "night terrors" and "day terrors."

Dr. Graham Little, in a paper on Night Terrors published in the *British Medical Journal* for August 19, 1899, considers the majority of cases to be caused by "disorders productive of moderate but prolonged dyspnœa," and to be associated with obstruction of the fauces—*e. g.*, by adenoids—and thinks that digestive disorders do not play the important part commonly assigned to them in the causation of this condition. Now, although these attacks are said to be confined to children under puberty, it will be remembered that there are many organic diseases of the circulatory and respiratory organs in which "fear of some impending catastrophe" is a common phenomenon. This condition strikes us as being in some sense analogous to the terrors of children, and the explanation of both may possibly lie in the theory of Rey (*Archiv für Kinderheilkunde,* xxiv, 3, 4), who found adenoids in all of thirty-two cases of night terrors examined by him, and considered the *modus operandi* to be the production of carbonic-acid poisoning as a consequence of interference with respiration. As Still points out, "it is easy to imagine that, just as the motor cortex is liable to be affected by a paroxysmal neurosis—viz., epilepsy—at night (and in some cases only at night), so also the higher centres may be specially liable to paroxysmal disturbance during sleep. The far greater prevalence of night terrors than of day terrors may well be related to the extraordinary sensitiveness and activity of some of the higher centres during sleep, which is seen in the readiness with which a stimulus, which in the waking condition would produce little or no effect, will during sleep start a whole series of reactions (dreams, as we call them) in the higher centres."

We recall one case within our own knowledge in which, on a few isolated occasions, attacks of unreasoning and unreasonable terror occurred in a man, by no means of a timid disposition, lasting only a short time, and aroused by no obvious objective cause. The man used to reason with himself as to their absurdity, but subsequently found that the way in which to speedily dissipate them was to sit down and rest a few moments, taking deep, slow inspirations the while. Only three or four such attacks occurred in his life, and if we remember rightly they took place during exhaustion consequent on unusually prolonged physical effort. This would certainly lend some countenance to the carbonic-acid poisoning theory, and would bring this case in line with those conditions in which occurs that "fear of some impending danger" previously noted as a phenomenon of certain diseases whose effects would certainly include an interference with respiration.

This explanation does not, however, militate against the other reflex causes of irritation with which other observers have associated the terrors of children—such, for instance, as digestive disturbances—for in the light of our modern knowledge of self-intoxication it is easy to conceive that the toxæmia of intestinal derangement might produce a similar paroxysmal neurosis of the higher centres to that which may result from carbonic-acid poisoning. In short, many forms of toxæmia which are not overwhelming enough to paralyze, but simply sufficient to stimulate to a stage of unstable irritability, like that of a nearly exhausted galvanic cell, would seem to be adequate to account for the condition.

THE USE OF ALUM IN BAKING POWDERS.

We do not know that Congress has the power to enact laws prohibiting the adulteration of articles of food, except as such laws may apply to trade among the different States, but no harm can come from an investigation of the alleged deleterious action of alum as a constituent of baking powders by a committee of the Senate, and we believe that the *American Grocer* Publishing Company has rendered a distinct service to the community by publishing a pamphlet entitled *Scientific Testimony against the Use of Alum in Food,* a portion of which testimony was given before such a committee of the Senate last July. The witnesses were Professor Albert B. Prescott and Professor Victor C. Vaughan, of the University of Michigan. Their testimony is supplemented by extracts from the testimony of Professor Charles F. Chandler, of Columbia University, and Professor Henry Morton, of the Stevens Institute, in a trial before the supreme court of New York, and by the recorded opinions of various chemists and sanitarians of the highest standing. All these gentlemen agree that alum is an injurious addition to any product which is to be used in making bread.

Perhaps the most telling of these different statements is that of Professor Schweitzer, of the State University of Missouri. Professor Schweitzer relates that many years ago a representative of a manufacturing firm asked for his opinion regarding the use of alum in baking powders, and that he gave it as his conviction that every person who resorted to the practice should be sent to the penitentiary. The representative replied that his firm had been in the habit of using alum as a substitute for part of the cream of tartar. The occurrence led Professor Schweitzer to make a careful review of the whole evidence on which he had grounded his opinion, and he discovered no reason for changing it. Since then, he says, he has followed with painful interest the progress of food adulterations which defraud the consumer and endanger his health. The laws of Nature, he declares, are made manifest by Nature herself, and, as we find no aluminum whatever in our natural articles of food, it is evident that Nature did not intend it to enter into the composition of our food.

Many years ago the use of small amounts of alum to improve the appearance of bread made from inferior flour was demonstrated in England to be prejudicial to the health of the consumers of such bread, and its employment was prohibited by law. How much more, then, is it our duty to forbid the use of the far greater amounts that are contained in the alum baking powders. The individual States ought to pass stringent laws against the use of alum in making articles of food, and such laws should be enforced rigorously.

THE PROGRESS OF MEDICINE AND SANITATION IN THE UNITED STATES.

The Department of Social Economy for the United States Commission to the Paris Exposition of 1900 is publishing a valuable series of monographs on *American Social Economics,* edited by Professor Herbert B. Adams, of the Johns Hopkins University, and Mr. Richard Waterman, Jr. The nineteenth monograph, entitled *The Past and Present Condition of Public Hygiene and State Medicine in the United States,* is of particular interest to the medical profession. It is by Dr. Samuel W. Abbott, the secretary of the State Board of Health of Massachusetts. Dr. Abbott deals with the subjects of health organizations, the management and control of infectious diseases, quarantine, food and drug inspection, public water-supplies, sewerage and sewage disposal, school hygiene and the medical inspection of schools, municipal, rural, industrial, and railway hygiene, the disposal of the dead, vital statistics, climate, mineral springs, the relation of the general government to public health, state medicine, medical education and registration, and inquest systems. His essay, which makes a brochure of about a hundred octavo pages, is illustrated with a number of graphic maps, and it is to these maps that the limitations of our space compel us to restrict our attention at the present time.

From the first map we learn of the per capita expenditure for sanitation by State boards of health in the year 1898. It appears that Vermont, Massachusetts, and Florida spent at the rate of over two cents for each inhabitant; Mississippi, Texas, and Minnesota at the rate of from one to two cents; Maine, New Hampshire, New York, New Jersey, Delaware, Connecticut, Rhode Island, and Utah at the rate of from half a cent to a cent; Alabama, Louisiana, Tennessee, Ohio, Maryland, Indiana, Michigan, Illinois, Wisconsin, Iowa, Arkansas, North Dakota, California, Colorado, and Oklahoma at the rate of from a fifth to half a cent; Pennsylvania, Virginia, West Virginia, North Carolina, South Carolina, Kentucky, Missouri, Kansas, Nebraska, South Dakota, Nevada, and Washington at the rate of less than a fifth of a cent; and Georgia, Oregon, Idaho, Montana, Wyoming, Arizona, New Mexico, and the Indian Territory nothing.

The second and third maps show the progress made in less than forty years in supplying the people with water. In 1860 between thirty and forty per cent. of the people of New York and Maryland, from twenty to thirty per cent. of the people of Massachusetts, Connecticut, Rhode Island, Pennsylvania, New Jersey, Louisiana and California, from ten to twenty per cent. of the people of Missouri, and fewer than ten per cent. of the people of Maine, New Hampshire, Vermont, Delaware, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Alabama, Ohio, Indiana, Kentucky, Tennessee, Illinois, and Michigan were supplied with public water, and in all the rest of the country, considerably more than half in territorial extent, there was no public water-supply. In the year 1897, however, over ninety per cent. of the people in Massachusetts, from eighty to ninety per cent. in Rhode Island and New Jersey, from seventy to eighty per cent. in New York and Connecticut, from sixty to seventy per cent. in New Hampshire and Pennsylvania, from fifty to sixty per cent. in Maine, Maryland, Illinois, Minnesota, California, Nevada, Colorado, Wyoming, and Washington, from forty to fifty per cent. in Ohio, Delaware, Michigan, Minnesota, Oregon, and Montana, from thirty to forty per cent. in Vermont, Indiana, Wisconsin, Missouri, Nebraska, and Utah, from twenty to thirty per cent. in Kentucky, Louisiana, Florida, Iowa, Kansas, Arizona, Idaho, and Oklahoma, from ten to twenty per cent. in Virginia, West Virginia, South Carolina, Georgia, Alabama, Tennessee, Texas, New Mexico, North Dakota, and South Dakota, and fewer than ten per cent. in North Carolina, Mississippi, and Arkansas were supplied with public water, and the Indian Territory alone remained without a public water-supply.

In 1897 the percentage of population living in sewered towns was from sixty to seventy in Massachusetts and New Jersey, from fifty to sixty in New York, Connecticut, and Rhode Island, from forty to fifty in Pennsylvania, Maryland, and Colorado, from thirty to forty in New Hampshire, Delaware, Ohio, Michigan, Illinois, California, Utah, and Washington, from twenty to thirty in Maine, Minnesota, Missouri, Nebraska, Oregon, Nevada, and Montana, from ten to twenty in Vermont, Virginia, Georgia, Florida, Kentucky, Indiana, Iowa, Kansas, and Wyoming, and less than ten in West Virginia, North Carolina, South Carolina, Tennessee, Alabama, Mississippi, Louisiana, Arkansas, Texas, New Mexico, Arizona, North Dakota, South Dakota, Idaho, and Oklahoma.

In 1898 there was one registered physician to fewer than five hundred inhabitants in Vermont, Ohio, Indiana, Iowa, and California; one to between five hundred and seven hundred and fifty in Maine, New Hampshire, Massachusetts, Connecticut, Rhode Island, New York, Pennsylvania, Maryland, Delaware, West Virginia, Kentucky, Tennessee, Florida, Texas, Illinois, Missouri, Arkansas, Kansas, Colorado, Oregon, Montana, Idaho, Nevada, and Arizona; one to from seven hundred and fifty to a thousand in New Jersey, Virginia, Georgia, Alabama, Mississippi, Louisiana, Wisconsin, Utah, and Washington; one to from a thousand to twelve hundred and fifty in North Carolina, South Carolina, Minnesota, Nebraska, and Wyoming; and one to more than twelve hundred and fifty in North Dakota, South Dakota, and New Mexico.

As regards the license to practise medicine, Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Maryland, Delaware, Virginia, West Virginia, North Carolina, South Carolina, Tennessee, Georgia, Florida, Alabama, Mississippi, Louisiana, Minnesota, Iowa, the Indian Territory, North Dakota, Montana, Utah, Arizona, Oregon, and Washington require an examination to be passed; Indiana, Illinois, Wisconsin, Missouri, Arkansas, Oklahoma, Colorado, and New Mexico accept certain diplomas; Ohio, Kentucky, Texas, South Dakota, Nebraska, and California require only a diploma; and the other States impose practically no restriction.

SEPARATION OF THE EPIPHYSES OF THE LONG BONES.

The relative frequency with which diastasis affects the various epiphyses is a matter of some interest. In a communication published in the *Deutsche Zeitschrift für Chirurgie*, liv, summarized in the *Centralblatt für Chirurgie* for March 31st, Dr. O. Wolff reports that in a period of two years and a half the lesion was observed in the Cologne Municipal Hospital as affecting the upper epiphysis of the humerus five times, the lower epiphysis of the humerus seven times, the epicondyles six times, the lower epiphysis of the radius five times, the same together with the epiphysis of the ulna once, the epiphysis of the neck of the femur twice, the lower epiphysis of the femur once, and the lower epiphysis of the tibia seven times.

THE NEW YORK PHYSICIANS' MUTUAL AID ASSOCIATION.

As many of our readers probably know, the association now admits members from all parts of the State, and membership is not forfeited by a change of residence to any part of the world. We learn from the thirty-first annual report that it has members living in forty-seven counties, in eighteen States besides New York, and in four foreign countries. During the year 1899 it paid $29,000 to the families of deceased members. Every eligible physician in the State ought to be a member.

THE *BULLETIN OF THE JOHNS HOPKINS HOSPITAL.*

THIS most excellent publication has long been notable for the pains taken with its pictorial illustrations. In the March issue an envelope, so attached as not to interfere with the binding, holds a number of separate reproductions of photographs arranged for use in the stereoscope. This device might often be adopted to advantage.

THE *PROVIDENCE MEDICAL JOURNAL.*

THE second number of this new quarterly, dated April, 1900, has been received at this office. It is edited by Dr. George D. Hersey and published by the Providence Medical Association. It contains a goodly array of communicated articles, preceded by several short and pithy editorials.

DR. JACOBI'S SEVENTIETH BIRTHDAY.

ALTHOUGH Dr. Abraham Jacobi gives every evidence that the prospect is good for many more years of his usefulness as a physician and as a citizen, it is fitting that his seventieth birthday should be celebrated by his friends and professional brethren. We are glad to learn, therefore, that it is to be marked by a dinner given in his honor on Saturday, May 5th, at Delmonico's. That Dr. Jacobi's beneficent career and his sterling character are appreciated beyond the circle of medicine is amply attested by the fact that there are on the committee such men as Felix Adler, Samuel P. Avery, Franz Boas, A. V. Briesen, Charles Collins, Horace E. Deming, Charles S. Fairchild, Abram S. Hewitt, Henry Holt, William Dean Howells, Percival Knauth, Seth Low, Jacob Meyer, Oswald Ottendorfer, George Haven Putnam, Jacob H. Schiff, Carl Schurz, Gustav H. Schwab, Edwin R. A. Seligman, Edward M. Shepard, James Speyer, Simon Sterne, William L. Strong, Henry Villard, Hugo Wesendonck, Everett P. Wheeler, Horace White, and A. Wolff.

SUPERNUMERARY MAMMARY GLANDS.

IN the *Medical News* for April 14th is the report of a patient presented on February 28th to the British (Berlin?) Medical Society who had three supernumerary pairs of mammary glands in different stages of development. One pair consisted simply of pigmented areas, a second possessed rudimentary nipples, while the third presented both glandular tissue and nipples, from which, during lactation, milk flowed freely. We take it that such an extensive development of supernumerary mammæ is exceedingly rare.

THE ANTIQUITY OF MODERN SCIENCE.

FROM time to time glimpses come to sight of the light that really existed, far beyond what is commonly supposed, in the esoteric knowledge of the ancient world. Much of the teaching of the earlier books of the Old Testament is now seen to be in accord with some of the most advanced sanitary science. Professor Nuphtuli Herz Imber, in the *Denver Medical Times* for April, gives an insight into the medical teachings of the Talmud, from which we gather that most ailments were even in those days supposed to be due to little dangerous organisms, termed 'shedins' (destroyers), too small to be seen by the eye. These organisms were inhabitants of air, water, animals, and decomposed wood. Hogs and certain fishes were the creatures most infested by them. Leprosy was due to the presence of such organisms beneath the skin, and its origin was attributed either to eating certain fish or to wearing untanned hides. The ordinances which forbade spitting in the streets of Jerusalem, allotted four cubits of space to each dweller in a room, and prescribed the investigation of the lungs and livers of slaughtered animals seem to indicate quite an up-to-date board of health some two thousand years ago, while the Talmudic admonition concerning flies as transmitters of disease, if better known, might have caused more respectful attention to be paid to the warning of the surgeon-general in respect of flies and typhoid in our late campaign. *E pur si muove*, but always in an orbit.

PERCUSSION AND AUSCULTATION *SECUNDUM ARTES.*

MR. D. was a man under forty years of age, above the average in size, had a florid complexion, and usually enjoyed very good health, which he attributed to the steady habit of drinking about a pint of spiritus frumenti a day. Once, however, something seemed to get out of order in his system. He did not, of course, know precisely what ailed him, but, happening to read the advertisement of a certain Dr. Grass in a daily paper, he concluded that that individual might be able to help him, and accordingly presented himself at his office. After some preliminary questions Mr. D. was ordered to strip himself to the waist and stand before the doctor. The latter doubled up his fist and gave the patient a powerful blow on the right side of the chest, after which he applied his ear to the spot and kept it there for some time. He then performed the same operations on the left side, causing the patient to protest against the force of the blow. Mr. D. was finally informed that he was suffering from nervous compression of the heart and that a certain number of bottles of the empiric's infallible hoodoora would cure him in a short time.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported for the two weeks ending April 14, 1900:

DISEASES.	Week ending Apr. 7.		Week ending Apr. 14.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	11	7	15	7
Scarlet fever	164	14	158	22
Cerebro-spinal meningitis	0	14	0	9
Measles	715	31	680	22
Diphtheria	240	32	225	50
Laryngeal diphtheria (croup)	22	15	23	11
Tuberculosis	327	207	237	179
Chicken-pox	23	0	16	0
Small-pox	0	0	1	1

The Death of Sir William Overend Priestley, M. D., the well-known obstetrician, is announced from London. Sir William has been the member of Parliament for the Edinburgh and St. Andrews' Universities since 1896. He was formerly president of the Obstetrical Society of London; professor of midwifery at King's College, London; examiner in midwifery to the Royal College of Physicians of London, and to the University of Cambridge; and physician accoucheur to the late Princess Alice and the late Princess Christian, and vice-president of the Paris Medical Society. He was also an honorary fellow of the American Gynæcological Society, and of the Gynæcological Societies of Boston, Berlin, and Edinburgh.

The International Congress of Dermatology and Syphilography.—The eighteenth annual meeting will be held in Paris from August 2 to August 9, 1900. The subjects to be presented for discussion are as follows: The Parasitic Origin of Eczema: Dr. Kaposi, Dr. Unna, Dr. Jadassohn, Dr. Galloway, Dr. Brocq, Dr. Bodin, and Dr. Veillon. The Tuberculides: Dr. Boeck, Dr. Colcott Fox, Dr. Campana, Dr. G. Riehl, and Dr. J. Davier. The Pelades: Mr. Malcolm Morris, Dr. Lassar, Dr. Mibelli, Dr. Parloff, and Dr. Sabaurand. The Leukoplakias: Dr. Behrend, Dr. Pringle, and Dr. Perrin. Syphilis and Associated Affections: Dr. Neisser, Dr. Bulkley, Dr. Ducrey, and Dr. Hallopeau. The Descendants of Hereditary Syphilitics: Mr. J. Hutchinson, Dr. Tarmonsky, Dr. Tinger, and Dr. Jullien. The Causes of Generalized Blennorrhagic Infections: Dr. W. R. Taylor, Dr. Lesser, Dr. Tommasoli, Dr. Lane, and Dr. Balzer. All gentlemen who intend to become members of the congress are requested to address Dr. Thibierge, 7 rue de Surènes, Paris, or Dr. George T. Elliot, 36 East Thirty-fifth Street, New York. The membership fee is five dollars.

The Association of Military Surgeons of the United States will hold its next annual meeting in New York, on Thursday, Friday, and Saturday, May 31st and June 1st and 2d.

The Investigation of New Drugs.—The following resolutions, adopted in January, are of interest in connection with pharmacopœial revision:

Resolved, That it is the sense of the Medical Society of the State of New York that the interests of medical science require the establishment of a bureau of materia medica in order to institute disinterested investigation into the character and value of new drugs.

Resolved, That this society recommends to the Decennial Convention of 1900 for the revision of the United States Pharmacopœia the creation of such a bureau by and under its authority, with the provision that it shall report annually upon the matters coming properly within the scope of its work.

Marine-Hospital Service Health Reports.—The following cases of small-pox, yellow fever, and plague were reported to the surgeon-general during the week ending April 14, 1900:

Small-pox—United States and Insular.

Huntsville, Ala.	Apr. 4	19 cases.	
Mobile, Ala.	Apr. 1–7	11 "	
Arapahoe, Col.	Mar. 28	4 "	
El Paso County, Col	Mar. 28	1 case.	
Las Animas County, Col	Mar. 28	1 "	
Rio Grande County, Col	Mar. 28	1 "	1 death.
Weld County, Col.	Mar. 28	3 cases.	
Washington, D. C	Apr. 1–7	6 "	
Aurora, Ill.	Mar. 18–31	14 "	
Chicago, Ill.	Apr. 1–7	2 "	
Evansville, Ind.	Apr. 1–7	3 "	
Covington, Ky.	Apr. 1–7	12 "	
Lexington, Ky	Apr. 1–7	2 "	
New Orleans, La.	Apr. 1–7	50 "	23 deaths.
Detroit, Mich.	Apr. 1–7	2 "	
Grand Rapids, Mich	Apr. 1–7	1 case.	
Albert Lea, Minn	Mar. 20–28	2 cases.	
Anoka, Minn.	Mar. 20–23	4 cases.	
Anoka County, Minn	Mar. 20–28	1 case.	
Butterfield, Minn	Mar. 20–28	2 cases.	
Duluth, Minn	Mar. 20–28	1 case.	
Freeborn County, Minn	Mar. 20–28	1 "	
Kandiyohi, Minn	Mar. 20–28	5 cases.	
Minneapolis, Minn	Mar. 18–31	18 "	
Rice County, Minn	Mar. 18–31	2 "	
Watonwan County, Minn	Mar. 20–28	5 "	
St. Louis, Mo	Mar. 10–31	20 "	
Cincinnati, Ohio	Mar. 23–30	3 "	
Cleveland, Ohio	Apr. 1–7	24 "	
MeKcesport, Pa.	Apr. 3–10	2 "	
Manila, Philippine Islands	Feb. 17–24	5 "	
Greenville, S. C.	Apr. 1–7	2 "	
Roanoke, Va.	Mar. 20–31	7 "	
Spokane, Wash	Apr. 1–7	1 case.	
Tacoma, Wash	Mar. 24–31	1 "	

Small-pox—Foreign.

Buenos Ayres, Argentina	Jan. 1–31	2 cases,	2 deaths.
Prague, Austria	Mar. 10–17	3 "	
Antwerp, Belgium	Mar. 10–17	3 "	1 death.
Rio de Janeiro, Brazil	Feb. 9–23		27 deaths.
Cairo, Egypt	Feb. 25–Mar. 1		13 "
London, England	Mar. 3–17	12 "	
Lyons, France	Mar. 10–17		1 death.
Nice, France	Feb. 22–Mar. 15	9 "	4 deaths.
Paris, France	Mar. 17–24		2 "
Gibraltar	Mar. 18–25	11 "	1 death.
Athens, Greece	Mar. 10–24	19 "	9 deaths.
Bombay, India	Feb. 20–Mar. 6		537 "
Chihuahua, Mexico	Mar. 17–31		7 "
Vera Cruz, Mexico	Mar. 24–31		9 "
Odessa, Russia	Mar. 10–24	15 "	5 "
St. Petersburg, Russia	Mar. 3–10	31 "	12 "
Warsaw, Russia	Mar. 3–10		3 "
Corunna, Spain	Mar. 3–10		1 death.
Valencia, Spain	Mar. 18–24	1 case,	1 "
Straits Settlements, Singapore	Feb. 17–24		3 deaths.
Fifteen towns, Switzerland	Feb. 10–Mar. 10		2 "
Constantinople, Turkey	Mar. 19–26		1 death.

Yellow Fever.

Rio de Janeiro, Brazil	Feb. 9–23		32 deaths.
Panama, Colombia	Mar. 20–27	3 cases,	1 death.
Havana, Cuba	Mar. 24–31		1 "
Vera Cruz, Mexico	Mar. 24–31		2 deaths.

Plague—Insular and Foreign.

Honolulu, Hawaii	Mar. 25		2 deaths.
Manila, Philippine Islands	Feb. 10–24	19 cases,	15 "

The Buffalo Academy of Medicine.—At the last meeting of the Section in Ophthalmology, Otology, Rhinology, and Laryngology, on Monday evening, the 16th inst., Dr. Benjamin H. Grove was to read a paper entitled Some Notes on the Absorption of Cataract, which was to be discussed by Dr. A. A. Hubbell, Dr. Benjamin F. Rogers, and others.

Changes of Address.—Dr. J. F. McKay, to No. 275 Alexander Street, Rochester, New York; Dr. Y. G. Richmond, to No. 5611 Washington Avenue, Chicago.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 7 to April 14, 1900:*

Bell, L. P., Acting Assistant Surgeon, United States Army, is assigned to temporary duty at the General Hospital, the Presidio of San Francisco, awaiting transportation to the Philippine Islands.

Duval, Douglas F., First Lieutenant and Assistant Surgeon, United States Army, is ordered to proceed to the Philippine Islands on the transport *Grant*, and he will assume command of the enlisted men of the hospital corps ordered to sail on that ship.

Kean, Jefferson R., Major and Surgeon, United States Volunteers, upon being relieved as chief surgeon, Department of the Province of Havana and Pinar del Rio, will report in person to the commanding general, Division of Cuba, for assignment to duty.

McLean, Allen D., Acting Assistant Surgeon, United States Army, will report to the commanding officer of the Twenty-first Infantry, stationed at Muntinlupa, Province of Manila.

Reilly, J., Acting Assistant Surgeon, United States Army, is assigned to temporary duty with troops on the transport *Grant*, to sail April 1st for the Philippine Islands.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending April 14, 1900:*

Olcott, F. W., Passed Assistant Surgeon. Ordered to duty at the naval recruiting rendezvous, Philadelphia.

Society Meetings for the Coming Week:

Monday, *April 23d:* Medical Society of the County of New York; Lawrence, Massachusetts, Medical Club (private); Cambridge, Massachusetts, Society for Medical Improvement; Baltimore Medical Association.

Tuesday, *April 24th:* New York Dermatological Society (private); Metropolitan Medical Society, New York (private); Buffalo Academy of Medicine (Section in Obstetrics and Gynæcology); Rome, New York, Medical Society; Medical Society of the County of Putnam, New York (annual); Boston Society of Medical Sciences (private); Hunterdon, New Jersey, County Medical Society (Flemington); Litchfield, Connecticut, County Medical Society (semiannual); Richmond, Virginia, Academy of Medicine and Surgery.

Wednesday, *April 25th:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Auburn, New York, City Medical Association; Berkshire, Massachusetts, District Medical Society (Pittsfield—annual); Middlesex, Massachusetts, North District Medical Society (annual—Lowell); Gloucester, New Jersey, County Medical Society (quarterly); Philadelphia County Medical Society.

Thursday, *April 26th:* New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Brooklyn Pathological Society; Brooklyn Society for Neurology; Roxbury, Massachusetts, Society for Medical Improvement (private—annual); Hartford, Connecticut, Medical Association (annual); Pathological Society of Philadelphia (conversational).

Friday, *April 27th:* New York Clinical Society (private—annual); New York Society of German Physicians; Yorkville Medical Association, New York (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Saturday, *April 28th:* New York Medical and Surgical Society (private); Worcester, Massachusetts, North District Medical Society (annual—Fitchburg).

Births, Marriages, and Deaths.

Married.

Carpenter—Cæsar.—In New York, on Tuesday, April 17th, Dr. Dudley Newcombe Carpenter, United States Navy, and Miss Sylvia Cæsar.

Crisler — Simpson. — In Flora, Mississippi, on Wednesday, April 11th, Dr. R. B. Crisler and Miss Flora B. Simpson.

Rokeby—Eden.—In New York, on Tuesday, April 17th, Mr. Ralph Thomas Rokeby and Miss Maud Julia Eden, daughter of Dr. John Herman Eden.

Weld—Train.—In Boston, on Wednesday, April 11th, Dr. Charles Goddard Weld, of Newport, Rhode Island, and Miss Hannah Putnam Train.

Died.

Conklin.—In Babylon, New York, on Thursday, April 12th, Dr. George H. Conklin, in the eighty-ninth year of his age.

Davis.—In Tampico, Tennessee, on Tuesday, April 10th, Dr. W. L. Davis, of Knoxville.

Kimball.—In New York, on Thursday, April 12th, Dr. Frank D. Kimball, in the twenty-fifth year of his age.

McWilliams.—In Tupelo, Mississippi, on Tuesday, April 10th, Dr. A. J. McWilliams, in the seventy-fifth year of his age.

Schauber.—In Troy, New York, on Tuesday, April 10th, Dr. Isaac Schauber, in the twenty-fourth year of his age.

Pith of Current Literature.

Philadelphia Medical Journal, April 14, 1900.

Selections from the Lane Lectures. Senile Arterial Plethora. By Dr. T. Clifford Allbutt.

A Cause of Death from Psychic Insult, with Remarks upon Delirium Nervosum Dupuytren and Operation Psychoses. By Dr. F. Pagenstecher.—The patient, B., in a state of psychic and general health and without any previous delusion, had received a very insignificant injury. A mere scratch upon which a writing pen had rubbed caused him to believe that blood poisoning had set in, and to beg for amputation of the affected (*sic*) arm. Then followed a fainting fit and a bad night. On the next day active delirium, great mental agitation, with various delusions, and twitchings of the face were followed by great weakness. Pulse and temperature were normal, depression moderate. Twenty hours after the injury, and the affection which began with it, there was an incomplete crisis with profuse sweating; the previous symptoms remained until death, however, thirty-two hours after the injury. Death was very sudden and entirely unexpected. The author is of the opinion that the acute psychosis resulted immediately from the trauma, and that it is not the severity of the trauma, but of the psychic shock, that causes delirium nervosum. Examples in support may be given and cases in point are quoted. The conclusions of the author that death in this case was dependent on a very severe form of acute hysterical psychoses, occurring in a man predisposed to such a result from fright and excitability from an injury which he believed to be severe, is concurred in by others whom he quotes.

The Control of Hæmorrhage in Penetrating Wounds of the Chest. By Dr. Robert G. Le Conte.—In severe hæmorrhage from a lung the first object of treatment should be to get pressure on the lung. By opening the chest, air will do this as well as blood in the pleura; it will do it instantly, instead of waiting until a sufficient amount of blood has been poured out, and it will save the patient the amount of blood necessary to exert this mechanical pressure; it will permit the vessels to close by clots, and it eliminates the dangers of a pyothorax or of universal adhesions of the pleura. The danger from engorgement of the right side of the heart is slight where the patient has lost much blood. Dr. Le Conte admits that these views are his own, and that they do not meet with general indorsement.

A Case of Malarial Fever. Some Stains for the Sporozoa of Malaria. By Dr. Albert Woldert.

A Peculiar Manifestation of Uræmia. By Dr. Frederick Krauss.

Report of a Case of Abdominal Pregnancy. By Dr. Charles Dewey Center.

Medical Record, April 14, 1900.

Diffuse Septic Peritonitis. By Dr. George R. Fowler.

Observations and Suggestions Concerning Hypodermoclysis. By Dr. Robert Coleman Kemp.—Dr. Kemp suggests, as a region that seems especially advantageous for subcutaneous injections, the space between the highest part of the ilium and the lower border of the ribs—the ilio-lumbar region, as he calls it. Sterilization of the solution, needle, region to be punctured, and of the fountain syringe is impressed. The enormous increase of renal secretion with hypodermoclysis is noted, and extracts illustrative of the applicability of hypodermoclysis in poisoning, pleurisy with effusion, enterocolitis, as an eliminative in diphtheria following antitoxine injection, nephritis, with sodium salicylate as a diuretic in uræmia, etc., are given.

Mention is also made of a single attachment converting an aspirating or a hypodermic needle into a needle for hypodermoclysis.

Nitrous Oxide and Ether Anæsthesia. By Dr. H. W. Carter.—A plea for a more extended application of nitrous oxide and ether anæsthesia, the nitrous oxide being used as a preliminary to ether. The fact that it is far more frequently employed in England than in this country is referred to, and an apparatus of American make is commended for its administration. The usual arguments and illustrative cases are met with in this article.

Chronic Vertebral Rheumatism (Rheumatic Spondylitis) and its Pseudo-neuralgic Form. By Dr. H. Forestier.

Treatment of Superficial Wounds without Sutures. By Dr. John F. Whitbeck.

The Journal of the American Medical Association, April 14, 1900.

Report of a Successful Case of Excision of the Cæcum, with End-to-end Anastomosis. By Dr. Frederick Holme Wiggin.—Subject, female, aged fifty-four, with a history of recurring attacks of appendicitis covering a period of ten years. The general condition of the patient indicated great bodily depression analogous to scurvy, due to the lack of proper nourishment, and to the retention for a long time of a large quantity of fæcal matter. Upon bimanual examination a tumor attached to the uterus and broad ligament, and extending up into the right inguinal region, was found. Operation. Tumor was contained in the cæcum and appendix. The suture material used to unite the bowel was horsehair, with a No. 5 milliner's needle, and the stitch used was the one whose utility was demonstrated by Maunsell. Attention is called to the small amount of blood lost—an ounce and a half altogether, including the abdominal incision; to the early and constant use of saline enemas; to the early administration of nourishment to the patient in considerable quantity, and to the character of the tumor, which was composed of muscular and dense fibrous (cicatricial) tissue, which was also the seat of focal round-cell infiltration.. A small lymph node included in one of the sections gave evidence of chronic inflammation, but there was no indication of invasion with cells from a neoplasm.

Remarks on Serum Therapy. By Dr. Edward K. Dunham.

Use of Antipneumococcus Serum. By Dr. Alexander Lambert.—The writer gives the results of his own experience and of that of others, and, while an advocate of the use of antipneumococcus serum, is temperate in his claims and moderate in his conclusions. "The pneumonia serum at present does not seem to shorten the duration of the disease, nor cut short the pneumonic process in the lungs, nor bring about the desired 'crisis.' But it does seem in certain cases to prevent a general pneumococcus septicæmia, and thus in these cases it may save life."

Use of Diphtheria Antitoxine in the Treatment and Prevention of Diphtheria. By Dr. William H. Park.

Remarks on the Bacterial Therapy of Yellow Fever. By Dr. Charles H. Fitzpatrick.

Antirabic Serum in Therapy. By Dr. R. J. Wilson.

Dosage in Chloroform Anæsthesia. By Dr. A. S. von Mansfelde.

Shoulder-humero-scapula Articulation. By Dr. Thomas H. Manley.

Boston Medical and Surgical Journal, April 12, 1900.

Folie à Deux. By Dr. Arthur C. Jelly.

The Use of the Angeiotribe. By Dr. J. Riddle Goffe.—The writer is of the opinion that, as the angeiotribe is simply a strong and heavy artery or tissue clamp, there is no reason why its use should be confined to gynæcological surgery, or why it should not be extended to all surgical operations in which the control of hæmorrhage from large blood-vessels is involved.

The Problem of Boston's Insane. By Dr. Philip Coombs Knapp.

The Work of the Trustees of the Boston Insane Hospital, and their Plans for its Future Development. By Dr. Henry C. Baldwin.

The Medical News, April 14, 1900.

Two Cases of Recurrent Tubal Pregnancy. By Dr. Philander A. Harris.

Recent Advances in the Treatment of Insomnia. By Dr. R. W. Wilcox.—These have been in the recognition that insomnia is a symptom; in realizing that certain employed hypnotics may not only be dangerous, but may even yield fatal results; and, finally, in the production of a hypnotic—chloretone—which most nearly approximates Nature, by inducing sleep by that "cell retraction" which Nature demands.

Purulent Meningitis. Report of Six Cases. By Dr. L. Napoleon Boston.

The Legislation Needed in Regard to Apparent Death. By Dr. Henry J. Garrigues.—The writer moves that a clause be inserted in the laws providing that the occurrence of death shall be ascertained by a physician and not left, as it is now, to laymen to decide. The subject of premature burial is gone into, and numerous unfortunate accidents are quoted.

Ligation of the First Portion of the Right Subclavian for Aneurysm of the Third Portion. By Dr. A. E. Halstead.

Pædiatrics, April 1, 1900.

Injuries of the Nerves due to Fracture. By Dr. Charles Green Cumston.

Ophthalmia Neonatorum. By Dr. J. A. Day.

Night-Terrors. By Dr. Francis Huber.—The author thinks that in all cases there is an underlying neurotic or neuropathic state. Tonic treatment should be employed with weakly and anæmic children; the sleeping room should be spacious and well ventilated; disturbing articles of diet should be interdicted; the bowels should be regulated; when there are adenoids or enlarged tonsils, they should be removed; bromides, chloral, etc., may be of service in neuropathic cases; and a dim light, together with the presence of some person in an adjoining room, may increase the child's confidence.

A Case of Mitral Regurgitation and Pulmonary Obstruction. By Dr. August A. Eshner.

Archives of Pædiatrics, April, 1900.

Hypertrophic Pyloric Stenosis in Infancy. By Dr. Eric Pritchard.

A Note upon Kernig's Sign in Infants. By Dr. Frederick A. Packard.—The author does not question the value of Kernig's sign of meningitis (the patient's inability to extend the leg completely on the thigh in the sitting posture) in adult life or in somewhat advanced childhood, but he relates four cases, all in children two years old or younger, in which the sign could not be elicited. In one of them it could not have been expected, for during the whole time that the infant was under observation there was such rigid flexion that the whole body could be lifted from the bed by placing the hands under the heels, the legs being held constantly at about a right angle with the thighs, while the thighs were flexed on the abdomen to about the same degree.

A Case of Congenital Goître and Diaphragmatic Hernia. By Dr. Isaac A. Abt.

The Treatment of Whooping-cough without Drugs. By Dr. N. R. Norton.—At the request of Dr. Achilles Rose, the rectal administration of carbonic-acid gas has been tried in the New York Foundling Hospital in one hundred and fifty cases. Of this number, one hundred and forty-three seemed to be decidedly benefited. In the seven others no effect was observed. Three other patients were treated by intubation, and the late Dr. O'Dwyer's statements to the effect that it would do away with the sole cause of acute suffering in uncomplicated whooping-cough, namely, spasm of the glottis, were shown to be well grounded. [It may be suggested that carbonic acid is a drug, even though administered by the rectum.]

Drug Values as Observed in the Management of Seven Hundred and Fifty-two Cases of Whooping-cough. By Dr. Charles Gilmore Kerley.—Alum, fluid extract of horse-chestnut leaves, and dilute nitric acid were used in twenty cases each, and proved either useless or objectionable. Cocaine hydrochloride was employed in twenty-eight cases. It mitigated the severity of the paroxysms to some extent, but not sufficiently to warrant its continued use. Quinine was given in sixty cases. Great benefit was produced by giving large amounts, but their administration was attended with difficulties. Belladonna was prescribed in sixty cases, but did no good whatever. Equal quantities of sodium, ammonium, and potassium bromides were employed in sixty cases, and the results, from all points of view, were better than those from any of the other drugs thus far mentioned. From twelve to sixteen grains in twenty-four hours were given to children a year old. Antipyrine, given in sixty cases, proved still more serviceable, and in combination with the bromides it gave satisfaction in a large number of cases.

American Journal of the Medical Sciences, April, 1900.

A Contribution to the Diagnosis of Diverticula in the Lower Part of the Œsophagus. By Dr. Franz A. R. Jung.

The Clinical Aspect of Plague. By Dr. Frank G. Clemon.

A Remarkable Case of Probable Thoracic Aneurysm Presenting Intermittently through the Sternum. By Dr. Richard C. Cabot.

An Experiment in the Transmission of Syphilis to Calves. By Dr. Mazyck P. Ravenel.—The author's attempt to inoculate two calves with syphilis simply adds to the long list of failures.

Gumma of the Iris and Ciliary Body; Recovery with Normal Vision. By Dr. Charles A. Oliver.

The Value of Electrolytic Dilatation of the Eustachian Tubes in Chronic Tubal Catarrh and Chronic Catarrhal Otitis Media. By Dr. Arthur B. Duel.

A Critical Summary of Recent Literature on the Localization, Diagnosis, Prognosis, and Treatment of Gonorrhœa in Women. (Concluded.) By Dr. John G. Clark.—This masterly article does not admit of condensation within the space at our command. It should be read in its entirety.

The Lancet, March 31, 1900.

Some Cirrhoses of the Liver. By Dr. W. B. Cheadle.—(See abstract of *British Medical Journal* for March 31st in last week's *Journal.*)

The Typhoid Bacillus and Typhoid Fever. By Dr. P. Horton-Smith.—This article is the second of the Goulstonian Lectures on this subject.

The Treatment of Rheumatism, its Prophylaxis and Cardiac Complications. By Sir R. D. Powell.—This article is a reply to the one by Dr. Ewart upon the same subject (see abstract of the *British Medical Journal* for March 17th in the *Journal* for March 31, 1900). After stating his belief in the bacterial origin of rheumatism, the writer calls our attention to the great increase of fibrin in the blood of patients suffering from this disease; it is only equaled in pneumonia. Other points noted as to the blood are the marked anæmia, the leucocytosis, and the lessened alkalinity. "The arthritis of acute rheumatism is as ephemeral as the rose spot in typhoid fever, to which it is closely analogous." Where the arthritis persists in one or more joints, a mixed disease is present (gonorrhœa, tubercle, etc.). Stress is laid upon the great value of absolute rest in bed and continuance of treatment. The disease runs a course of about five weeks, which duration is not influenced by any mode of treatment. A milk diet, with plenty of water to drink, is recommended. The great value of the salicylates is admitted, but they occasionally produce unfavorable results, such as renal hæmorrhage. Where the heart is involved, opium is often of great service.

On the Treatment of the Rheumatic Diseases of the Heart in the Early Periods of their Manifestation. By Dr. A. E. Sansom.—After touching on the causation and evolution of the various morbid processes and stating his belief in their bacterial origin, the writer claims that the salicin treatment has rendered rheumatic heart disease less prevalent than formerly, statistics to the contrary notwithstanding. The addition of the alkaline carbonates to the salicylates has not been of much service. Attention is called to the great value of the ice-bag in cases of pericarditis and the "swollen heart of rheumatism." In such cases it is rarely of advantage to stop the administration of the salicylates. The continuous galvanic current applied along the course of the vagi is often of great service in cases of recurring enlargement of the heart with critical symptoms. The anode is applied over the nape of the neck and the cathode over the areas of the vagi, the current from eight cells being used for six minutes three times daily. Digitalis has been found to be of but little value in the treatment of the swollen and dilated heart of rheumatism. The best results are obtained by the use of diffusible stimulants, strychnine, and the ice-bag. A very guarded opinion should be given as to the presence of true valvular disease in rheumatic subjects. In many cases a murmur may be due simply to enfeeblement of the heart muscle, no organic lesion of the valves existing.

On the Abortive Treatment of Suppuration of the Eyeball. By Dr. Simeon Snell.—Such cases receive the same surgical treatment as an ordinary abscess. The eye is opened, curetted, irrigated with sublimate solution, and packed with gauze. The operation was successfully performed in seven cases.

A Case of Lymphatic Leucæmia. By Dr. M. H. Spencer.—The writer reports a case of lymphatic leucæmia in a man aged thirty-eight. There was enlargement of the spleen and liver, slight enlargement of the glands in the axillæ and groins, and blotchy retinal and subconjunctival hæmorrhages. The blood examination showed a marked numerical increase of the leucocytes (*number not stated*), sixty-three per cent. being lymphocytes. There were also many nucleated red corpuscles (*variety not stated*); these are usually absent in this form of leucæmia, though always present in the blood in the spleno-myelogenous form. The patient grew steadily weaker, and died within two months of seeking medical advice. Arsenic was used from the first, but without effect.

Note on the Superficial and Deep Reflexes. By Dr. J. M. MacCormac.—The writer gives a brief note on the condition of the reflexes in various mental diseases. In the second stage of general paralysis of the insane, in hypochondria, neurasthenia, and secondary dementia all the reflexes are exaggerated. In the first stage of general paralysis of the insane, and in alcoholic paralysis, the cutaneous reflexes are weakened and the deep reflexes exaggerated. In the third stage of general paralysis and in hysteria all the reflexes are weakened. In acute mania the reflexes are normal.

The British Medical Journal, April 7, 1900.

Practical Observations on Cancer of the Breast. By Sir William Banks.—In the third of the Lettsomian Lectures the writer discusses the various parasitic and infective views of cancer. After speaking of the work of Russell, Plimmer, and Buchanan, as well as that of various Continental observers, he states his belief that the bodies described as parasites are bodies *sui generis*—special organisms—and are not degenerations of cell protoplasm or of non-parasitic cell inclusions. He describes the general appearance of the bodies and the technical methods by which they may be demonstrated. His conclusions regarding them are as follows: 1. There is a definite structure to be found at the edges of carcinomata and sarcomata, which is never found in healthy tissue. It is regarded as a blastomyces—a development stage of certain fungi. The parasites are usually inside the epithelial cells and probably spread by sporing. Their mode of entrance into the body is not known. 2. From these parasites cultivations in certain media can be made which, when injected into animals, produce growths, mostly of a fatal character, containing these parasites. 3. There is as yet no indisputable proof of the infectivity of cancer, but its possibility must not be denied.

Operative procedures in mammary cancer are next taken up, and stress is laid upon the necessity of thorough excision, with especial reference to extirpation of the axillary glands. The writer does not believe that removal of the sternal portion or of the whole of the pectoralis major muscle (Halstead's operation) is necessary for the complete extirpation of the glands in the axilla. He has never seen cancer recur in the interval between the greater and lesser pectoral muscles, and recurrences never originate primarily in the former; so that its removal is unnecessary. After briefly describing his own method of operation, the writer closes by giving tables of statistics made up from three hundred and sixteen cases of mammary cancer operated upon by him. These are divided into eight series, the last four comprising recent operations, imperfect cases, and those that could not be traced. The first four series comprise one hundred and seventy-five patients, and of these a hundred and eight have remained free from local recurrence. Of these one hundred and eight cases, seventy-five have lived over three years, as follows: Forty cases lived between three and six years after operation; twenty-eight cases lived between seven and fourteen years; five cases lived between sixteen and twenty-one years. In conclusion, he says: "Let no woman be reckoned cured of cancer of the breast till she is dead."

Some Cirrhoses of the Liver. By Dr. W. B. Cheadle.—In the second of the Lumleian Lectures the writer calls atention to the frequent occurrence of serious degeneration of the cardiac muscle in cases of cirrhosis of the liver. Of the fifty-three fatal cases mentioned, death took place suddenly from syncope in six. There is concurrent interstitial fibrosis of other organs, the kidneys and spleen suffering next in order to the liver. Cirrhotic patients have a special liability to erysipelas and tuberculosis. No rigid classification of the cases is possible, as the various causes may be associated in any one case. The prognosis varies according to the form, but it is usually unfavorable. It is the least favorable in atrophic cirrhosis due to alcoholic excess. Ascites usually indicates that the disease has reached its final stage. Much depends on the condition of general nutrition. In the hypertrophic form the prognosis is less gloomy; the large liver may give promise of recovery. The writer has seen eleven cases of recovery; in all of these the liver was enlarged. The possibility of these cases being of syphilitic origin must always be considered. The cases that recover are, as a rule, younger than those that end fatally, are in good physical condition, and have been either exceptionally hard drinkers, acute drinkers, or they are syphilitic.

The Typhoid Bacillus and Typhoid Fever. By Dr. P. Horton-Smith.—This is the third of the Goulstonian Lectures on this subject.

The Action of Various Drugs and Diets on the Excretion of Nitrogen in Gout. By Dr. W. Bain.—The writer reports the results of the examination of the urine from a case of chronic gout, in which various drugs and diets were administered, and in each instance the amount excreted of urea, uric and phosphoric acids, alloxur bases, and ammonia was estimated. Among the drugs given were sodium salicylate, guaiac, potassium iodide, and colchicum. Sodium salicylate and colchicum caused only a small increase in the amount of uric acid excreted. The excretion of uric acid was markedly increased by guaiac. More uric acid was excreted on the vegetable diet than on the meat diet.

The Gelatinous Form of Sodium Biurate and its Bearing on the Treatment of Gout. By Dr. A. P. Luff.—The writer's observations show that the employment of sodium salts in gout is undesirable, because they convert the soluble gelatinous biurate into the insoluble crystalline form. Potassium and lithium salts delay such conversion, and should therefore be used. Piperazine and lysidine are of but little value. The conversion previously spoken of is promoted by high alkalinity of the blood, and the writer has found that the blood of gouty subjects is abnormally alkaline.

An Operation Performed for Complete Atresia Vaginæ. By Dr. J. M. Cotterill.—The writer reports the case of a young married woman of twenty-eight, suffering from complete atresia of the vagina. By means of an H-shaped incision a new vagina was made, two large, flask-shaped flaps being brought around from the buttocks to form its walls. The operation was a perfect success.

The Medical Chronicle, March, 1900.

On the Early Diagnosis and Treatment of Aortic Aneurysm. By Professor Moritz Schmitz, M. D.—In fifty-four cases in which during the past eleven years the author has diagnosed aortic aneurysm, thirty-eight had paralysis of the left recurrent laryngeal nerve, five of the right nerve, and only one of both nerves. In all these cases the patients first consulted the author on account of hoarseness. Tracheal buzzing was present in nineteen out of thirty-one cases examined in the past five years. The author says that it is "best felt when the cricoid cartilage is pushed upward with the index and middle finger of the right hand, the head of the patient being bent a little backward. A pulsation downward is felt which ought not to be confused with the general pulsatory vibration of the larynx that occurs not infrequently in excited patients." The Röntgen rays should always be employed when possible. In order to diagnosticate aneurysm of the aorta by means of these rays with certainty Rosenberg would require evidence of a round tumor pulsating in all directions, but the author says that there are certainly aneurysms which show pulsation only in localized spots, though in most cases the ray shadow shows a tumor pulsating in all directions. Of causes, syphilis, simple arteriosclerosis, and overstrain or traumatism are considered. The last factor is shown by the proportionally greater occurrence of the disease in men than in women, which the curious confirmatory statement of Emmerich is noted that in Bavaria it is more common in women because there they perform the more heavy bodily work. For treatment, large doses—from forty-five to seventy-five grains daily—of potassium iodide, with mercurial inunctions when syphilis is present, are recommended. Also the low diet cure. Wright's method of administering thirty grains of calcium chloride daily to increase the coagulability of the blood is referred to, as is also the inhalation of carbonic-acid gas for producing the same effect. Reference is also made to the injection of gelatin, the diminution of fluids, and electrolysis. Eight cases are reported, with three radiographs.

A New Method of Inguinal Colotomy. By Mr. W. P. Montgomery, F. R. C. S.—The author's method is as follows: The incision, two and a half inches long, is made a little lower than usual, its upper end only just touching the line from the umbilicus to the anterior superior spine. The muscles are split, and the peritonæum divided for an inch and a quarter. Then the loop is drawn up and twisted, if it is lying normally, so that the prominent appendices are on the outer or left side. A strong silk suture on a handled needle is entered half an inch directly outside the upper limit of the skin incision. It is passed, with a downward inclination, through the whole thickness of the abdominal wall; then through the mesentery; then, with an upward inclination, through the abdominal wall on the opposite side and out at a point exactly corresponding to that of entrance. The needle is withdrawn and the suture left. Three fine sutures, placed on either side and below, unite the peritonæum and muscle of the abdominal wall with the peritoneal and muscular coats of the gut. These are tied, and then the mesenteric suture is drawn tight and tied over a small strip of gauze. The rectal end of the loop is thus pinched up just below the upper angle of the incision. A suture, passed through the skin and muscle, closes the abdominal wound below the loop. The obstruction produced is absolute, and the second stage of the operation should be performed in twenty-four or thirty-six hours. The mesenteric suture is removed in ten days; after this a catheter can be passed, if necessary, down to the rectum, and this segment of the bowel cleared out from above. It is important to recognize that this modification can not be applied: 1. In acute cases where the distention of the gut is in any way marked. 2. In cases of cancer high up in the rectum where the sigmoid mesentery is involved and shortened. 3. Possibly in some cases where this mesentery is congenitally short. The author has applied the method to nine cases, and has examined, post mortem, three of these which died respectively, eighteen months, seventeen months, and five months after operation. All the cases had decided control over defecation except in the presence of occasional diarrhœa. The bowels were usually moved night and morning.

Le Progrès médical, March 31, 1900.

Two Rare Varieties of Phlegmonous Angina in Children.—M. Albert Katz reports a case of an abscess in the tip of the uvula in a nursling, and of a lingual periamygdalitis in a child of eight years after an attack of measles. In the latter case, the abscess evoked a laryngeal œdema, which disappeared instantly after incision. The author calls attention to the extreme rarity of phlegmonous infiltrations in these locations in children.

Tuberculosis of the Iris and of the Ciliary Body. By Dr. Alphonse Péchin.

La Presse médicale, March 28, 1900.

Lazaret Barges in the Suez Canal. By M. J. Lochelongue.

Absorptive Power of the Pleura.—M. J. Castaigne concludes from an experimental and clinical study that diagnostically the pleura will absorb exudates almost as easily as the normal pleura, when it is infected with the streptococcus; when the pneumococcus or the tubercle bacillus is the infecting agent, its absorptive power is much less marked. He found this power of the pleura increased by the use of the cautery over the affected area and by the salicylates given internally, while the injection of soluble substances into the pleura did not yield satisfactory results in augmenting the capacity of the pleura to absorb pathological transudations.

Purulent Interlobular Pleurisy; Streptococcus Infection.—M. Pagliano and M. Lop report such a case in which the patient recovered after the injection of twelve ounces of Marmorek's antistreptococcus serum.

La Presse médicale, March 31, 1900.

Technics of Pylorectomy.—M. H. Hartmann and M. B. Cunéo state that cancer of the pylorus has little tendency to extend along the duodenum, but it spreads mainly along the smaller curvature of the stomach. It also encroaches upon the lymphatic ganglia, seeking mainly those that lie along the smaller gastric curvature. Considering these facts, the authors advise beginning the operation of pylorectomy by removing the omentum to examine the posterior surface of the stomach to assure one's self that extirpation is possible. The lesser omentum can be torn through in its middle nonvascular part without producing the least hæmorrhage. The greater omentum must be opened at the level of the future gastric incision and sufficiently near the stomach to enter the organ without injuring the transverse mesocolon. The stomach is drawn up into the wound and curved elastic forceps are placed upon the organ as near as possible to the cardia. By this manœuvre the coronary artery is exposed and is at once tied. The organ and the ligament to the right are cut through. A portion of the greater curvature is left, while almost the entire lesser curvature is thus removed. A dip of the sound into the pyloro-pancreatic space exposes the gastro-duodenal artery at the base of the angle formed by the first portion of the duodenum and the pancreas, immediately beneath the peritonæum. With its accompanying vein it is ligated. The pylorus is then freed but cutting the portion of greater omentum which is still attached to it. The operation is completed by removing, with the pylorus, the retropyloric lymphatic glands. A gastro-duodenal implantation or a gastro-enterostomy is the final step in the operation. The greater omentum, it is noted, must be incised some distance from the stomach in order to remove the subpyloric glands, which may even be adherent to the transverse mesocolon.

Abortive Treatment of Gonorrhœa. (Review of Thesis.)—M. Daum says that Guiard has modified the Janet method so that, if his treatment is begun on the first day, he obtains eighty-seven cures out of one hundred; but if postponed to the fifth day, the percentage is but eleven. He uses a solution of hot permanganate of potassium, 1 to 10,000, and washes out the entire urethra, not being certain that the posterior urethra is not already affected. No pain and no serious reaction follow. The solution is allowed to run into the bladder. The patient assumes the horizontal position after the injection, and the entire urethral canal is anæsthetized with a five-per-cent. solution of cocaine, in order to assist the reflex contractions of the sphincter and to facilitate the deep penetration of the liquid. The patient must always urinate after the lavage, which should be practised twice daily. The solution may be made as strong as 1 to 4,000 in tolerant individuals. In favorable cases, the discharge is reduced to a mere moisture at the meatus after five or six injections. The usual precautions as to the drinking of beer and coitus are important.

Gazette hebdomadaire de médecine et de chirurgie, March 29, 1900.

Cases of Human Actinomycosis in the Last Two Years. By M. A. Poncet and M. Léon Berard.

Gazette hebdomadaire de médecine et de chirurgie, April 1, 1900.

Diagnosis of Pulmonary Tuberculosis in Children. (Review of Thesis.)—M. Bertheraud emphasizes the hereditary antecedents, the appearance of the patient, the presence of multiple enlarged glands, articular, cutaneous and osseous lesions. Hyperidrosis, enteritis, enlarged liver and spleen, tachycardia, and cyanosis are suspicious signs. The physical signs in the lungs vary as the disease is an acute phthisis or an acute miliary tuberculosis, acute pneumonic or broncho-pneumonic phthisis, or an ulcerative phthisis. The author believes, in doubtful cases, in injecting tuberculin for diagnostic purposes. The finding of the tubercle bacillus is positive evidence. Radiography by the Röntgen rays may be satisfactorily practised in children. Frequently, a combination of all diagnostic methods must be employed before a conclusion can be reached.

Centralblatt für innere Medicin, March 31, 1900.

A Contribution to the Doctrine of the Depotentization of Poisons. By Dr. Ernst von Czyhlarz and Dr. Julius Donath.—The authors ligated the thigh in twelve guinea-pigs, tying the ligature so tight that nothing could pass from the distal part of the limb into the general circulation, and immediately injected a surely fatal dose of strychnine. At periods varying from one to four hours later they removed the ligatures. None of the animals showed the least sign of strychnine poisoning, and they all escaped gangrene. In another guinea-pig the ligature was removed in half an hour, and the subject of the experiment died with the characteristic symptoms, but not so speedily as the check animal. They argue, therefore, that strychnine is deprived of its poisonous properties by prolonged contact with the tissues and juices of the body.

Centralblatt für Gynäkologie, March 31, 1900.

The Treatment of the Stump of the Umbilical Cord. By Dr. F. Ahlfeld.—In this article the author combats Martin's assertion that a new method is needed (see the *New York Medical Journal* for April 14th). His own method is to make the stump short, bathe it and the neighboring skin with strong alcohol, and apply a layer of sterile wadding, which needs to be changed only when it has become soiled.

Pregnancy and Parturition after Hysterocolpocleisis. By Dr. Menge.

Prager medicinische Wochenschrift, March 29, 1900.

Fatal Case of Actinomycosis of the Middle Ear.—Dr. Joseph C. Beek concludes from an autopsy that actinomycosis of the middle ear may arise from blood infection from a primary focus elsewhere in the body, or that it may originate from a neighboring actinomycotic process in the mouth, pharynx, tonsil, or from carious teeth; that the fungus may enter the middle ear through the Eustachian tube or through the external auditory canal.

On Vertigo. By Dr. Singer.—(Continued article.)

Wiener medizinische Blätter, March 29, 1900.

Welander's Mercurial Bag in the Treatment of Syphilis.—Dr. J. Gschwend has tried this method in forty-six cases, but is not enthusiastic in its favor. Recurrences are frequent, one relapse having occurred while the patient was under treatment. Yet in cases in which some other serious illness prevents ordinary mercurial treatment, he believes that it should be employed on account of its mildness.

" Catching Cold " as a Cause of Disease. (Conclusion.)—Dr. Alexander Partos concludes that a " cold," as such, is being gradually limited in its application, and that it is a provoker of disease only by inducing changes in the organism which render it susceptible to further infection.

Wiener medizinische Blätter, April 5, 1900.

Surgical Treatment of Basedow's Disease.—Dr. J. Schulz reviews historically the symptom-complex of Basedow's disease. (To be continued.)

Peripheral Facial Paralysis with Simultaneous Paralysis of the Abducens.—Dr. Ladislaus Haskovec reports a case of this kind. He says the lesion in such instances must be sought in the pons Varolii, where the nuclei of the facial and abducens nerves lie close together, or in the base of the brain. In the case cited there was no evidence of syphilis, tuberculosis, or of any neoplasm. He is inclined to share Oppenheim's opinion that a paralysis of the sixth nerve frequently accompanies that of the facial, and may be due to rheumatism or to an infectious process. He is inclined to attribute the ætiology in his case to rheumatism. The author goes minutely into the causative factors of facial paralysis.

Die medicinische Woche, April 2, 1900.

The Use of Proprietary Nutritive Preparations.—Dr. Karl Bornstein regards the employment of such preparations as somatose, nutrose, tropen, sanatogen, plasmon, and soson as invaluable in practice, owing to the high percentage of albumin they contain. In addition to the regular food, he administers them in all cases in which the organism is debilitated and weakened.

Deutsche Medizinal-Zeitung, March 29, 1900.

The Effect of Smoking on the Community.—Dr. Max Breitung says that most of the ailments attributed to smoking are due to the simultaneous excessive use of alcohol. Light and medium cigars are rarely harmful. The regular use of from twenty to thirty cigarettes daily can not be without an evil effect upon the smoker. Cigarettes and cigars should not be sold to minors. Slight deafness and dimness of vision may be attributed to smoking, while the " tobacco heart " and chronic inflammation of the respiratory passages are due to excessive cigarette smoking. Moderate smoking of light and medium cigars and the moderate use of alcohol are advised.

Deutsche Medizinal-Zeitung, April 2, 1900.

Bathing Treatment in Chronic Kidney Affections.—Dr. Groedel, of Bad Nauheim, says that the bathing treatment in chronic nephritis is contraindicated: 1. In cases of chronic parenchymatous nephritis, and in cases of secondary contracted kidney in which there is from time to time an increase in the albuminuria indicating an exacerbation of the parenchymatous affection. 2. In cases of contracted kidney with marked circulatory disturbances, congestion, dyspnœa, etc. 3. In cases of contracted kidney accompanied by a high degree of arterio-sclerosis, and, finally, in cases in which there is an apoplectic tendency and in which there has been an attack of pulmonary œdema. Only those cases of contracted kidney are benefited by the treatment in which the circulatory disturbances are mild.

Wiener klinische Rundschau, April 1, 1900.

Histological Changes in Old Nerve Stumps after Amputation. By Dr. A. Elzholz.

The Combination of Psychoses with Organic Nervous Disease.—Dr. Emil Redlich narrates a case of circular insanity in which there was a simultaneous neuromuscular atrophy, the particular form being the peroneal type of progressive muscular atrophy. (Continued article.)

Deutsche Aerzte-Zeitung, March 15, 1900.

A Contribution to the Modus Operandi of "Aspirin." By Dr. E. Grawitz.—The author urges the use of aspirin (acetylsalicylic acid) in acute articular rheumatism, chronic articular rheumatism, gonorrhœal arthritis, the nervous manifestations of influenza, neuralgia, pleurisy with effusion, ascites, and acute gout, in all of which he has found it very efficient and comparatively free from the toxic effects often witnessed when sodium salicylate, antipyrine, or especially acetanilide, phenacetine, or lactophenine is given. In three of his cases of acute articular rheumatism there was albuminuria, with casts, renal epithelia, and red blood-corpuscles in the urine. Those patients had been taking other salicyl preparations, and in a few days after aspirin was substituted for them the urine was wholly free from albumin. He really has little to say of the *modus operandi*, suggesting only that in pleural effusion and ascites it is that of an energetic sudorific.

On the Feeding of Nurslings. By Dr. B. Bendix.

Rhotacism. By Dr. A. Liebmann.

On the Formation of Inguinal Herniæ. (Concluded.) By Dr. Graser.

Rivista critica di clinica medica, March 24, 1900.

An Experimental Research Concerning the Transmission of Tuberculosis from Parent to Offspring. By Dr. Angelo Maffucci.—The writer presents the report of a series of experiments upon animals which he undertook with the intention of determining whether the poison of tuberculosis was transmitted from parent to offspring by the semen, the ovum, or the placenta. After giving a detailed account of a number of ingenious experiments on rabbits, guinea-pigs, fowls, and other animals he comes to the following conclusions: 1. That the toxine of tuberculosis is more often transmitted from the parent to the offspring than the bacillus of this disease. 2. That this poison may reach the embryo through the ovum, through the semen, or through the placenta. 3. That the children of two tuberculous parents suffer most from the effects of the tuberculous infection. 4. The infection of the embryo manifests itself in the shape of defective development, abortion, premature labor, cachexia, and an increase in the mortality after birth. 5. That the embryonal tissues not only resist against the development of the bacillus of tuberculosis in the fœtus, but may even destroy the germ by generating a germicidal substance. 6. That chickens hatched out of infected eggs retain so great a resisting power against the bacillus from the embryonal state that they are able to destroy the germ. On the other hand, if full-grown fowls are injected with tubercle bacilli they become tuberculous, although born of healthy parents. 7. That the offspring of tuberculous parents are not more susceptible to infection with tubercle bacilli than those of healthy ancestors, and that the greater frequency of tuberculosis among the children of tuberculous parents depends upon contagion from the intimate contact of parents and children, and upon possible germs that have remained from fœtal life, and not upon a hereditary predisposition. 8. That hereditary tuberculosis may be improved by proper hygiene. 9. That the prophylaxis and treatment of hereditary tuberculosis should consist of preventing the infection of the children from a close contact with the parents, and by placing them in the most favorable condition to resist the infection.

Riforma medica, March 15, 16, and 17, 1900.

Concerning the Mechanism of the Action of Antidiphtheritic Serum against the Toxines of Diphtheria in the Animal Organism. By Dr. Nicola Pane.—In order to explain the action of Behring's serum against the toxine of diphtheria, Ehrlich created the purely chemical antitoxic theory. According to this theory the active part of the serum, the antitoxine, comes into contact with the toxine of the disease in the blood of the animal, neutralizes the poisonous substance, and combines with it to form an innocuous product. This theory was chiefly supported by the fact which Ehrlich discovered, namely, that the agglutinating effect which the addition of certain vegetable toxalbumins exercises upon the red blood-cells of a healthy animal is neutralized when the serum of an animal specially immunized against this toxalbumin is added to the vessel containing the blood and the vegetable poison. This experiment is not a direct proof, of course, but it was accepted as analogous to the action of antidiphtheritic serum.

A direct test of this theory is the following experiment: Ten times the dose of toxine required to kill a guinea-pig weighing two hundred and fifty to two hundred and eighty grammes is mixed with a small quantity of antitoxine, and this mixture injected into a guinea-pig of the same size. By varying the amount of antitoxine and injecting the resulting mixtures into other guinea-pigs we may find the dose of antitoxine which will exactly neutralize the given quantity of toxine. The question now arises, Did this neutralization take place in the glass vessel or in the body of the animal? If the former hypothesis is true, the action of the antitoxine is a purely chemical one; if the latter, a biological one. The whole matter is of considerable practical importance, for if the chemical theory is true, then we may hope to save the lives of patients who are suffering from severe general poisoning with the toxine of diphtheria; while, if the biological theory is correct, we can only cure cases where the poisoning has not progressed to that stage when severe systemic intoxication has taken place. The latter is really the experience of all observers in practice.

The writer has worked for a number of years on the question of the mode of action of the antipneumococcus serum, and has arrived at the conclusion that this serum acts as an immunizing agent in the organism of the patient. He then began to study the same problem as regards diphtheria.

A number of difficulties had to be overcome before he could conduct his experiments with accuracy. The toxine of diphtheria is obtained from a culture of the bacilli in peptonized broth, but this broth does not possess very strong toxic powers. Various expedients have been devised to increase its toxicity, but until now without success. Recently the writer found a method by which he could obtain a broth one eightieth to one eleventh cubic centimetres of which killed a guinea-pig weighing three hundred grammes. But this culture lost its toxic properties after a time, and could not be used in experiments where toxicity must be regulated with precision. He therefore tried to solidify the broth culture, and to preserve it in the solid state. He succeeded in doing this by precipitating the serum albumin with alcohol, drying the precipitate at a temperature not exceeding 30° C., and grinding it in an aseptic mortar. If kept in dark bottles, hermetically sealed, it preserves its toxic properties for six months without any but the slightest diminution of efficiency. One thousandth of a gramme of this dry toxine, in the strength which he usually prepares, kills a three-hundred-gramme guinea-pig. In very small doses, say 0.0001 gramme, the toxine is not fatal but produces an extensive œdema in the animals injected. The length of time which a given dose of toxine takes to kill a guinea-pig of given weight varies with the amount of vital resistance in the animal, and also with the depth in the skin into which it is injected. In order to find the minimum dose that would neutralize a given amount of antitoxine, he used dilutions in normal saline solution.

He found, after a series of experiments on animals, that a given dose of antitoxine could protect an animal from a dose of toxine which was considerably larger than that which this dose of antitoxine could neutralize completely. He found, in addition, that a mixture of toxine and antitoxine that would prove innocuous when injected subcutaneously into a guinea-pig would prove fatal when injected intravenously into a rabbit. The fatal dose by intravenous injection in rabbits of about fifteen hundred grammes is equal to that which kills a guinea-pig of about three hundred grammes by subcutaneous injection. He found, further, that by injecting small doses of toxine into the veins of rabbits at long intervals, he was able to immunize them to such a degree that a dose fifty times larger than the ordinary fatal dose may be injected without being followed by morbid disturbances. But the increase in dosage must be very slow, and the immunizing injections given at long intervals, or the animals will give signs of poisoning, and may succumb to the infection. If, on the other hand, the initial dose is injected subcutaneously, we may inject another dose in the same manner as soon as the disturbances due to the first have subsided, and the dose can be rapidly increased without any fear of a fatal result. It appears then that there is a difference between the immunization which is secured by injecting the toxine into the blood current and that which results from repeated injections into the subcutaneous tissues. This explains why the antitoxine injected into the subcutaneous tissues succeeds in neutralizing a certain amount of toxine while if injected intravenously it fails to do so.

After giving a detailed account of his experiments, the author concludes that the mechanism of the action of antidiphtheritic serum is not a purely chemical process, or a simple neutralization of the poison of diphtheria, as Ehrlich and his pupils would have it. Their theory is based principally upon the mode of action of other serums, and they take antidiphtheritic serum to be analogous. The writer is convinced that the antitoxic theory of diphtheria should be regarded in the biologic sense, and not in the purely chemical. In other words, that the antitoxine immunizes the animals by exciting specific defensive functions in the cells of the organism. This immunity is therefore not essentially different from that produced by injecting small and repeated doses of toxine, except that the latter is created gradually and lasts longer.

Riforma medica, March 24, 1900.

Congestion of the Liver in Mercurial Poisoning. By Dr. Angelo Lisanti.—In persons whose occupation requires contact with mercury or its salts, as well as in syphilitics who have taken mercury in some form for a considerable time, this metal is found in the blood, the nerve centres, the liver, the heart, the muscles, and the bones. After a variable length of time the organism eliminates the poison by means of all the secretions—*e. g.*, the saliva, the sweat, the urine, etc. The organ that is probably most markedly affected is the liver. Gorup-Besanez has found mercury in the liver a year after the drug has been stopped. There is no doubt, however, that chronic mercurial poisoning exercises a decided toxic influence upon the nervous system. The ætiology of congestion of the liver is dependent upon two factors, which may be associated in variable proportions—the direct toxic irritation of the hepatic cell, and the active dilatation of the vessels of the liver, due to vasomotor nerve action. Thus is explained the influence upon the congestion of the liver of alcohol, tea, coffee, spices, and of the poisons of various diseases—*e. g.*, malaria. These poisons are brought to the liver either by the portal vein or by the general circulation, and accumulate in this organ on account of its great vascularity. If it is admitted that mercury in small and repeated doses reaches the liver and produces a toxic irritation of the hepatic cells, and if the occurrence of a vasodilatation by direct or reflex action is admitted, who can doubt the existence of congestion of the liver in mercurial poisoning?

The author has observed a large number of patients who were taking mercury for a long time, and concluded that mercurialism is often accompanied by a congestion of the liver which is characteristic both as to its intensity and its duration. Whether it may become a predisposing factor of a true hepatitis, diffuse or nodular, the writer can not positively say. It is certain, however, that this congestion is a transitory lesion, which disappears when the cause is removed.

The following symptoms were observed in these cases of subacute hepatic congestion due to chronic mercurial poisoning: The liver was sensitive to pressure; its surface was perfectly smooth, the lower border straight but rounded, denoting a uniform enlargement of the organ in volume. On percussion the liver was found to be enlarged, extending one or two fingerbreadths beyond the margin of the ribs, while the upper border was usually in the normal position. A very characteristic fact about these congested livers is that their volume varies from day to day, so that, for example, the lower margin, carefully outlined on one occasion, will be found higher or lower on another. These variations in volume are accompanied by changes in the amount of the urine secreted, and in the amount of urea eliminated. Subjectively, there is a sense of fullness, of tension in the hypochondrium, or sudden pains, which radiate toward the left shoulder, and which are intensified by the respiration, or by movements of the patient in bed. After the first few days a slight yellow tinge appears in the conjunctivæ, and this is usually followed by a slight jaundice. In addition, there are general malaise, nausea, vomiting, epistaxis, etc. The urine is usually scanty, dark red, and contains biliary coloring matters, an excess of urea, and sometimes albumin and casts.

The principal objection to the assertion that mercurial poisoning produces a congestion of the liver, is the following: Is it certain that this condition is due to the mercury, or may it be due to the syphilis which necessitated the use of the drug? The answer to this is that congestion of the liver is found in the primary stage of syphilis if mercury has been taken, and disappears after the drug is stopped, reappearing again when mercurial treatment is resumed.

The writer also noted that congestion more frequently occurs in persons who are otherwise intolerant of mercury—*i. e.*, who get stomatitis easily. He believes that, as stomatitis may be prevented by appropriate measures, so may congestion of the liver be prevented by attention to and vigilance over the functions of the intestinal tract.

The prognosis is good in all cases, and this is in contrast with that of syphilitic enlargement of the liver. The liver usually regains its normal size in two or three weeks. The diagnosis is based upon the clinical picture described above. It is very important to differentiate congestion of the liver due to mercurial poisoning from the enlargement of the liver of the tertiary syphilitic stage. While in the former suspension of the drug is indicated, in the latter the use of iodide of potassium with mercury is the specific treatment. Other conditions from which congestion due to mercury must be differentiated by exclusion are: Hyperæmia due to affections of the heart, lungs, pleura, pericardium, mediastinum; tumors, cachexia; from cirrhosis, biliary catarrh, fatty liver, amyloid liver, abscess, leucæmia, pseudoleucæmia, echinococcus, and cancer.

Vratch, March 11, 1900, O. S. (March 23, N. S.).

Materials for the History of the Epidemic of Bubonic Plague in the Village of Kolobovka. By Dr. N. I. Schmidt.—The writer reports in detail the epidemic of bubonic plague which occurred in one of the villages of the Astrakhan Government from July 16 to August 9 (O. S.), 1899. Twenty-four persons were infected, and of these twenty-three died. The village has thirty-six hundred inhabitants, but the great majority spend the summer in field labor in the surrounding steppes, living in temporary huts, so that, when the epidemic broke out, there were only six hundred persons in the settlement; but there was constant communication between the village and the steppe, and the workers in the field received their supply of bread, flour, etc., from the village, which is situated on one of the branches of the Volga, about twenty-five versts from that river. When the epidemic broke out the steppe was surrounded by a chain of troops, and the only avenue of exit was through the town of Zarev, where a quarantine station had been established. The magnitude of the distances and the sparsity of the population in the steppe helped to reduce the number of cases and to check the epidemic after twenty-four weeks. It was noted that the peasants who came from the steppe to the village for food, and who only went as far as the thresholds of the houses where the disease was present, did not get infected, while those who visited their sick relatives fell victims to the plague. It is interesting to note the probable source of infection in this epidemic. Two possible avenues have been thought of in searching for the origin of the epidemic. The first victim in Kolobovka had a brother, a sailor in the Russian navy, who was serving on board a torpedo boat that cruised in the waters of the Far East. He had sent her several letters before the outbreak of the disease, but no presents of any kind. Another and more probable source of infection is the fact that the Astrakhan region is inhabited by numerous Tartars and Kirgizes, many of whom make pilgrimages to Mecca. Last year some of these pilgrims returned to Astrakhan and were quarantined before they were set free. The villagers of Kolobovka are in the habit of visiting markets in the neighboring towns, where they come in contact with these Mohammedans. (To be continued.)

The Use of Copper Salts for Coloring Green Peas, and a Simple Method of Detecting their Presence. By Dr. A. V. Nikitine.—Green peas are colored for the market principally with copper sulphate, Paris green, or other copper salts, or by placing a copper coin in the vessel in which they are boiled before canning. In Strassburg they have even used the galvanic current for this purpose. The color is due to the formation of albuminate of copper in the peas. The quantity used varies between 0.018 and 0.044 gramme of metallic copper to the kilogramme of peas. A number of cases of poisoning by peas containing a quantity of copper are on record, but of course in very small quantities there is no effect on the system. The author thinks the use of copper in coloring peas should be prohibited by law, no matter how small the quantity used, as otherwise there is no way of controlling the manufacturers except by quantitative analyses.

The method of testing which he has devised is very simple. He boiled green peas in a solution of copper sulphate until they had absorbed all the copper in the solution. He then boiled fresh peas in water for the same length of time. He next took a few of the colored peas and a few of the uncolored, and boiled them for three minutes in a ten-per-cent. solution of sulphuric acid. Each sample was then poured out on a white saucer. The pulp of the colored peas as well as their skins always retained the green color after this test in a degree which was proportionate to the quantity of copper present, while the peas that had not been colored turned a brownish or grayish black. He was able to detect by this method so small a quantity as 0.025 gramme of copper in a kilogramme of peas.

Light as a Therapeutic Agent. By Dr. A. V. Minine.—The author reports several cases in which he employed a sixteen-candle-power incandescent light in the treatment of joint affections—*e. g.*, acute articular rheumatism, acute synovitis, etc.—and also in hæmatomata, in torticollis, and in neuralgias. He uses a combination of massage and illumination of the part. Absorption of large hæmatomata was effected in three sittings. Small effusions of blood were absorbed after fifteen or twenty minutes' treatment. In a case of acute traumatic synovitis of the elbow, the effusion disappeared in seven sittings. Dr. Ivanoff has devised a special lamp which is a combination massage roller and electric lamp.

Surgery at the Watering Places of the Caucasus. By Dr. V. I. Liboff.

Curettage of the Uterus in Dispensary Practice. By Dr. M. T. Polouyektoff.—The writer reports five cases in which the patients were curetted at the dispensary, and concludes that in cases where the operation is urgently indicated the physician is justified in performing curettage in ambulatory patients.

Miscellaneous.

The Urinary Complications of Grippe.—M. Desnos (*Presse médicale*, March 10th) says that these complications are divisible into three groups: 1. Those in subjects who have never had any urinary trouble or any precedent or preexisting infection. Of this nature was the case of a student of Saint Cyr, who, being attacked during the vacation with *grippe* at his home, was suddenly seized with an acute prostatitis, the enlargement being to the size of a mandarin orange. No abscess ensued, and at the end of a fortnight all symptoms had disappeared, but the prostate remained enlarged for six months, giving rise to fears of tuberculosis. It subsequently diminished without the evolution of any tuberculous symptoms. At that time the patient denied gonorrhœa and had never had sexual intercourse. He subsequently contracted gonorrhœa, followed by acute prostatitis, which, however, was promptly cured without evoking any signs of tuberculosis. The patient is now married and the father of a family, and in excellent health. M. Desnos infers that the prostatitis was purely of grippal origin. 2. In those subjects who have an old-standing urethritis, this is often roused into activity, and the inflammation, extending to the prostate, determines a prostatitis which, however, only occasionally suppurates. 3. In those who formerly have had urethritis, this is often reexcited, but without participation of the prostate.

Absence of the Pulmonary Artery.—M. Civatte (*Gazette hebdomadaire de médecine et de chirurgie*, March 15th) recently showed to one of the French societies an anatomical cardiac anomaly found on autopsy of a cyanotic man who died at the age of nineteen from pulmonary tuberculosis. The specimen showed interventricular communication, with total absence of the pulmonary artery and persistence of the arterial bulb.

The Restlessness of Old Age.—Dr. Clement Dukes (*British Medical Journal*, December 2, 1899; *Medical Council*, March, 1900) ascribes the incessant restlessness of some old people to defective elimination, causing heightened blood pressure and excitation of the nerve centres. Sedatives and carminatives aggravate the trouble. The most satisfactory drugs are those lowering arterial tension, as glonoin in one one-hundredth-of-a-grain doses, or erythrol tetranitrate in half- or one-grain doses, whose effects are more enduring. With a strong, hard pulse, drop doses of tincture of aconite or two-drop doses of aconite with fluid extract of veratrum viride at half-hour intervals are satisfactory. Elimination is to be secured by five-grain tablets of fluid extract of cascara sagrada, and calomel if necessary.

Exophthalmic Goitre Cured by Bowel Flushings.—Dr. Charles L. Minor (*Medical Council*, March), in a paper read at the Chicago meeting of the Mississippi Valley Medical Association, cited two cases of exophthalmic disease cured, after all other treatment had failed, by repeated bowel flushings. The patient is placed on the right side with the hips higher than the shoulders. With a fountain syringe from one to four quarts of water at from 100° to 105° F. are gradually passed. The difficulty of retaining more than a small portion, perhaps only a quart, is soon overcome as tolerance is established. It is done nightly at first, the intervals increasing as the patient improves. The author's explanation is that a large part of the water is absorbed into the portal circulation and washes out the liver, stimulating its antitoxic functions, increasing bile supply, and thus disinfecting the bowel and lessening putrefaction and consequent toxic absorption. Free diuresis is also established. Dietetically, starches, hot breads, sugar, pastry, and all fermentative foods are stopped. Squash, spinach, green vegetables, and underdone red meat or chicken are ordered. Medically, some organic iron mixture and antifermentatives—*e. g.*, salol, resorcin, β-naphthol, subgallate of bismuth, and guaiacol carbonate, with occasional doses of calomel—are recommended.

Hemiplegia during Scarlatina.—M. Ferrier (*Presse médicale*, March 24th) recently presented to a French society two soldiers affected with hemiplegia in the course of scarlet fever. He considered the hemiplegia certainly not functional, but organic. As to the nature of the lesions, he considered it to be a cortical softening consequent on vascular thrombosis. There were but few similar recorded cases. M. Rendu had seen a similar event during pneumonia, and M. Achard a right hemiplegia with aphasia as a sequel of scarlatina. According to M. Galliard, these results are not uncommon in typhoid fever.

The Pathogenesis of Diphtheria Bacilli.—Dr. F. F. Westbrook (*St. Paul Medical Journal*, April) says: "When an individual has a sore throat, even in the absence of all other clinical symptoms of diphtheria, it is fair to presume for public-health purposes that if *Bacillus diphtheriæ* is present it is virulent. But where the bacilli are present either in people in whom no symptoms have ever been present, or when clinical symptoms though present at first have abated and the health has been normal for some time, what proof can be obtained of the pathogenic character of the germs present?

"The isolation of the bacilli in pure culture under these conditions and their inoculation into guinea-pigs is the only available method, and is the one adopted generally in all laboratories. This is not ideal, nor is the establishment of the virulence of such microbes for animals positive proof that they may be harmful to man. As a matter of fact, many of the bacilli isolated from healthy people are pathogenic for guinea-pigs. Conversely, it does not prove that because a diphtheria bacillus (which has no pathogenesis for an animal) is obtained from the throat of a convalescent, it would be equally harmless to some other human being."

The Use of Gold Wire in Radical Operations for Hernia.—Dr. De Francisco (*Centralblatt für Chirurgie*, No. 7, 1900; *St. Paul Medical Journal*, April) says that Professor Tansini has recently used fine gold wire in these operations, allowing the wire to remain buried; he objects to silk on account of the liability, as he says, of the knot to discharge months after.

He prefers gold because he can obtain a very fine wire of great tensile strength and one which is easily sterilized and may remain in the wound indefinitely. The gold must be of good quality, and is cheap to use because the cut-off pieces can be remelted. The sutures are fastened by twisting. Tansini has operated in ten successful cases by this method, the hernial sac being also tied with gold.

Itching of the Auditory Meatus.—Dr. Alex. W. Stirling thinks that (*Laryngoscope*, March) a cause of irritation and even furuncle of the external ear may be found in an irritation arising in reality near the pharyngeal mouth of the Eustachian tube, and transferred to the ear. He has observed that the inflamed appearance of the meatus may be caused to entirely disappear by medication and strict orders that the ear is not to be scratched so long as the itching continues; also, that itching of the meatus may be caused by applications near the Eustachian orifice, and may be relieved by sedatives to the same region. He suspects that the order of events may not infrequently be, first, an inflammatory condition of the pharynx giving rise to intense itching of the ear; secondly, scratching of the ear with removal of the protecting epithelium; and thirdly, inflammation of the skin with local pain or itching. It follows that treatment, to have a permanently good effect, must attack the pharynx as well as the ear.

Letters to the Editor.

THE SHELDON MURDER CASE.

AUBURN, N. Y., *April 5, 1900.*

To the Editor of the New York Medical Journal:

SIR: The experts for the State in the Sheldon case are quite content to leave to others some of the points at issue between themselves and Dr. Phelps. Whether would-be suicides commonly shoot themselves with the pistol muzzle at contact, or at four to six and a half inches removed; whether a particle of lead can or can not leave the space between the barrel and chambers, turn an air spring, and alight one inch and three quarters ahead of its starting point and on the tip of an ear, which under the conditions assumed is already covered by the pistol barrel; whether Mrs. Sheldon's hair was damp or dry on the fatal day, April 30, 1896 (Dr. Phelps avers that it was a hot day in July, so that her hair "would be dampened by perspiration," but this is one more error)—all these matters may be pondered by such enthusiasts as care to peruse Dr. Phelps's article and our own.

But there is a point or two on which he needs to be set right, and he accuses us of one or two misrepresentations which we must clear up, before ceasing further to disturb a patient medical public with the Sheldon murder trial.

In his letter of March 24th and throughout his article (*New York Medical Journal*, November 4 and 18, 1899) he assumes that because the pistol with which he experimented coincided very closely with the Sheldon arm, therefore the performances of the two as regards spread and penetration of powder grains, burning of the skin or hair, etc., must be practically identical. This is erroneous. Just as two yachts built on the same lines and measurements may differ notably in speed, so two revolvers made by the same machinery and on the same day may give varying results when tested as to the particulars above enumerated. And this was actually the case with the two in question. The results obtained by Dr. Phelps from his weapon and those obtained by us with the Sheldon pistol were quite dissimilar as to distances at which hair may be burned, as to the amount of hair burned, and as to the number of powder grains indelibly imbedded in the skin. And we repeat that where such differences exist the results obtained by experiments with the identical weapon and ammunition with which the murder was committed should have preference.

The courts hold exceedingly strict views on this matter of relevancy of testimony founded on analogy. In a recent murder trial the prosecution sought to introduce testimony as to the behavior of four revolvers claimed to be identical in measurements with the one with which it was claimed a woman had been shot. It was testified by experts that these weapons were all made in the same mold, and bored and rifled by the same machine, yet infinitesimal differences were demonstrated, and all testimony as to experiments made with them was excluded as irrelevant. The court refused to admit experiments made even with the identical pistol with which it was claimed the crime had been committed, into which was fitted a new set of chambers, the original cylinder having been lost.

It surely behooves scientific writers and experts to keep pace with the evidently just and proper requirements of the courts.

Turning now to other matters, we read in Dr. Phelps's letter the following paragraph: "The statement that Dr. Phelps admits that it is probably inevitable at ranges of a fraction of an inch to three feet that a certain number of powder grains—the number varying with the range—remain even after thorough ablution—as quoted with the omission of the qualifying clause—misrepresents the opinion he expressed, etc." "The probability of the fixation of *one or more grains* (italics ours) within the limits of range mentioned may be conceded, but exceptions to this rule were noted under conditions specified, even when the bullet entrance was at the site of Mrs. Sheldon's wound."

Dr. Phelps has made several deliverances on this matter of imbedded powder grains, and before commenting on the above paragraph we will quote them, with all clauses that can possibly be claimed as qualifying.

On page 741 of this *Journal* for November 18, 1899, he speaks as follows: "The instances in which an appreciable proportion of the grains does not wash out are exceptional. At ranges of five or six inches, in which they are *exceedingly numerous* (italics ours), and are concentrated within an area of half an inch to two inches and a half, an estimated one third to one half disappeared in each one of twenty and more observations."

On page 743, same issue, he states: "At ranges of one quarter of an inch to three feet and even more, in the use of a pistol of this calibre, a *certain number* (italics ours) are likely to remain immovable even after thorough ablution. If the site of injury is unprotected by hair, and at range of a fraction of an inch extending to several inches, it is probably inevitable, but if the hair is thick or closely and smoothly combed upon the head, even though it be moderately thin, no grains may penetrate to the scalp with sufficient force to become fixed in its structure."

And again, same page: "If the range is from one to three feet, the probability that isolated grains, though perhaps not more than two or three in number, will remain immovably fixed in some part of the face is scarcely less than that of the fixation of *a greater number when the range is shorter*" (italics ours).

These paragraphs seem to say quite plainly that at the range within which Mrs. Sheldon could have shot herself, viz., six inches and a half, a certain number, one half to two thirds, of the exceedingly numerous imbedded grains inevitably defy ablution and remain fixed in the skin.

We pointed out in our article that as only three powder *stains* were found on Mrs. Sheldon's ear and temple, and these were washed off and not found at the second autopsy, Dr. Phelps's own admissions forbade the supposition that the shot was fired within six inches and a half. For, if it was fired there, a vast number—our experiments with the Sheldon pistol showed a practically innumerable quantity—of powder grains must have remained indelibly buried in the skin of the ear and temple, whatever happened to the scalp above covered by hair.

Now, to return to the paragraph first quoted, it will be observed that Dr. Phelps in this latest pronouncement whittles the number of imbedded grains that defy washing down to "one or more," at ranges of a fraction of an inch to three feet. What are we to understand by this astonishing statement? Does not Dr. Phelps see that he is repudiating his earlier words, and this after his attention had been called to the support they gave the State's view, and their destructive effect upon his own theory?

But Dr. Phelps declares "it is untrue that he formed or formulated any theory as to the exact range at which the fatal shot was fired." His own words at the close of his article were: "It is merely a presumption that the range was approximately four inches." We are willing to adopt this phraseology and say that Dr. Phelps raises a presumption that the range was four inches. Under either name it has been made untenable by his own admissions above quoted.

Again, we read: "The further statement that the experiments made by Dr. Phelps lead him to precisely the same conclusions reached by us—witnesses for the State—is obviously untrue." We used the word *conclusion*, not *conclusions*, and it referred only to the shot not having been fired at contact, in which it is obviously true that the doctor agrees with us.

We also observe the remark: "The assumption that the reviewer was a 'hostile witness' or a partisan of the defense is not justified." The matter of hostility we leave to others who may care to read his article carefully, as we have done. But that he was a partisan of the defense we never for a moment supposed. After his emphatic rejection of the contact-shot theory, on which their case stood or fell, the defense must regard him as anything but a "partisan" of theirs.

In concluding what we hope is our last communication regarding this *cause célèbre*, we call renewed attention to the fact that Dr. Phelps does not rescue himself from the dilemma in which his words have placed him. His own admissions, made apparently without his perceiving their importance or drift, must, if logically interpreted, lead to the conclusion that Mrs. Sheldon could not have shot herself, which is our only theory of the case.

William S. Cheesman, M. D.,
A. H. Hamilton, Ph. G.

Book Notices.

Leçons de clinique médicale faites à l'Hôpital général de Montpellier. Par le Dr. J. Vires, Professeur agrégé a la Faculté de médecine de Montpellier, etc. Avec 6 planches hors texte. Montpellier: Coulet et fils, 1900. Pp. vii–245.

Professor Vires has united in this volume several of the lectures delivered during the year 1898–'99. The subjects treated of are Basedow's disease, facial paralysis, paralysis agitans, syphilitic myelopathies, myxœdema, gastric crises of tabes, and pathological antagonism. The lectures are primarily intended for students, and give good clinical sketches of the diseases mentioned.

Diseases of the Nose and Throat. By J. Price-Brown, M. B., L. R. C. P. E., Member of the College of Physicians and Surgeons of Ontario, etc. Illustrated with One Hundred and Fifty-nine Engravings, including Six Full-page Color Plates and Nine Color Cuts in the Text, many of them Original. Philadelphia, New York, and Chicago: The F. A. Davis Company, 1900. Pp. xx–3 to 471. [Price, $3.50.]

This work is the result of twenty years' experience in general practice followed by ten years' special attention to rhinology and laryngology. It is quite refreshing to note the frankness of the author's statement to this effect in his preface and equally satisfying to see throughout the volume evidences of this fact. That true specialism must be built up on a foundation of general experience is a truism, but some of our modern authors seem to have forgotten the fact, if we may judge from their hasty and, we believe, premature entrance into the field of book-writing. Price-Brown has designed his work for students and those practitioners who, residing apart from any large medical centre, are yet compelled to treat many patients who can not afford to resort to the large cities. This being the case, academic discussion is omitted and each affection is concisely defined, clearly described, and distinguished, and its bearing, where one exists, on general systemic conditions set forth. Pathological topics are illustrated by many specimens from the writer's own practice, and, in fact, it may be said that the illustrations are far superior to those of the average work of this class. We can not close this notice without expressing our appreciation of the noble tribute paid to the memory of the lamented Joseph O'Dwyer.

The Nervous System of the Child. Its Growth and Health in Education. By Francis Warner, M. D. (Lond.), F. R. C. P., F. R. C. S. (Eng.), Physician to and Lecturer at the London Hospital, etc. New York: The Macmillan Company, 1900. Pp. xvii–233. [Price, $1.]

This little book, with a somewhat misleading title, gives useful information in regard to children in their learning years. Attention is called to the best ways of observing children, to their physical care, and to their mental and moral hygiene. It is especially adapted to the use of teachers and parents, but might also be read with advantage by physicians.

The Yearbook of the Nose, Throat, and Ear. The Nose and Throat. Edited by G. P. Head, M. D., Professor of Laryngology and Rhinology in the Post-graduate Medical School of Chicago. The Ear. Edited by Albert H. Andrews, M. D., Professor of Otology in the Post-graduate Medical School of Chicago, etc. Chicago: Chicago Medical Book Company, 1900. Pp. 3 to 274. [Price, $1.50.]

This volume takes the place for specialists in these branches of the Sajous *Universal Annual of the Medical Sciences.* While the latter in its present form still reviews progress in these special fields, the topics treated of are scattered through the series of volumes and are not compactly discussed, as in the work now considered. The authors have carefully gleaned the literature of 1899 as published in a hundred and seventy special and general journals, and have arranged it in a most concise and attractive form. The volume is well printed and the judicious use of italics, together with the excellent index, makes the work of reference easy. We trust that the present is but the first of a series which we hope to see long continued.

BOOKS, ETC., RECEIVED.

Elements of Clinical Bacteriology. For Physicians and Students. By Dr. Ernst Levy, Professor in the University of Strasburg i. E., and Dr. Felix Klemperer, Privat-Docent in the University of Strasburg i. E. Second Enlarged and Revised Edition. Authorized Translation by Augustus A. Eshner, M. D., Professor of Clinical Medicine in the Philadelphia Polyclinic, etc. Philadelphia: W. B. Saunders, 1900. Pp. 7 to 441. [Price, $2.50.]

Essentials of Surgery, together with a Full Description of the Handkerchief and Roller Bandage. Arranged in the Form of Questions and Answers Prepared Especially for Students of Medicine. By Edward Martin, A. M., M. D., Clinical Professor of Genito-urinary Diseases in the University of Pennsylvania. Illustrated. Seventh Edition, revised and enlarged. With an Appendix containing Full Directions and Prescriptions for the Preparation of the Various Materials used in Antiseptic Surgery. Also Several Hundred Receipts covering the Medical Treatment of Surgical Affections. Philadelphia: W. B. Saunders, 1900. Pp. xv–341. [Price, $1.]

The International Medical Annual and Practitioner's Index: a Work of Reference for Medical Practitioners. Eighteenth Year. New York: E. B. Treat, 1900. Pp. xii–748. [Price, $3.]

Plea for a Simpler Life and Fads of an Old Physician. By George S. Keith, M. D., LL. D., F. R. C. P. E. London: Adam and Charles Black, 1900. Pp. vi–173.

The Gynæcological Complications of Neurasthenia from a Neurological Standpoint. By John Punton, M. D., of Kansas City. [Reprinted from the *Western Medical Review.*]

Transactions of the College of Physicians of Philadelphia. Third Series. Volume the Twenty-first.

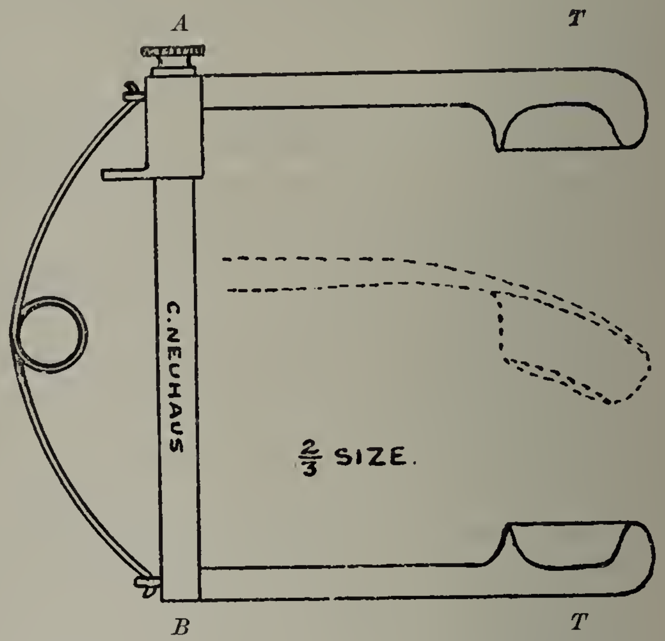
New Inventions, etc.

A MOUTH GAG.

By Dr. Hughlett Hardcastle,
Baltimore.

The accompanying drawing represents a mouth gag which was devised about twenty-five years ago by Dr. Russel Murdock, of Baltimore. Having found the instrument very useful, but needing a spring to cause it to open automatically when the patient opens his mouth, and thus prevent it from falling out, I had the spring put on, as shown in the illustration. It works so admirably that I send a description of it to you for publication, so that some of my fellow practitioners may know of it and have a chance to try it. It is manufactured by Charles Neuhaus & Company, of Baltimore.

By compressing at points *A* and *B*, the arm *A T* will move toward *B T*. The parts *T* and *T* are fitted over the incisor teeth of the patient, and, the pressure being relaxed, they press firmly against the teeth. When the patient opens his mouth the bars *A T* and *B T* separate immediately, and the parts *T T*, keeping in contact with the teeth, not only prevent the mouth gag from falling out, but also prevent the patient from closing his mouth again. To remove the gag, compress at points *A* and *B*.



Miscellany.

The American Surgical Association.—The next annual meeting will be held in Washington, on Tuesday, Wednesday, and Thursday, May 1st, 2d, and 3d, under the presidency of Dr. Robert F. Weir, of New York. The provisional programme includes the following papers: The president's address—Perforating Ulcer of the Duodenum; Gastric Ulcer—Non-perforating—Hæmorrhage, by Dr. William L. Rodman, of Philadelphia; Perforating Ulcer of the Stomach, by Dr. M. T. Finney, of Baltimore; Benign Obstruction of the Pylorus, by Dr. Frederick Kammerer; Malignant Disease of the Stomach and Pylorus, by Dr. William J. Mayo, of Rochester, Minnesota; Gastric Dilatation—Gastroptosis, by Dr. B. F. Curtis, of New York; Hourglass Contraction of the Stomach, by Dr. F. S. Watson, of Boston; The Diagnosis of Cancer of the Stomach, by Dr. John C. Hemmeter, of Baltimore; Traumatism of the Stomach, including Foreign Bodies, by Dr. Rudolph Matas, of New Orleans; Stricture of the Œsophagus following Typhoid Fever—Gastrostomy, by Dr. Frederic S. Dennis, of New York; The Methods of Closing Abdominal Incisions, by Dr. M. H. Richardson, of Boston; Strangulated Hernia through a Traumatic Rupture of the Diaphragm—Laparotomy—Recovery, by Dr. E. W. Walker, of Cincinnati; A Case of Subpubic Hernia of the Bladder through the Pelvic Floor, by Dr. F. B. Harrington, of Boston; A Case of Acute Tuberculosis of the Mesenteric Glands of the Ileocæcal Coil—Removal—Permanent Recovery, by Dr. M. H. Richardson, of Boston; Successful Removal of Acutely Inflamed Tuberculous Mesenteric Glands, by Dr. J. W. Elliot, of Boston; Congenital Cystic Tumor of the Pelvis, by Dr. De Forest Willard, of Philadelphia; Extirpation of a very Large

Aneursym of the Renal Artery, by Dr. W. W. Keen, of Philadelphia; Carcinoma of the Rectum, by Dr. John B. Deaver, of Philadelphia; and The Spontaneous Disappearance of Carcinoma of the Lip—Union following the Pathological Fracture of the Femur due to Secondary Carcinoma, by Dr. Leonard Freeman, of Denver.

The American Climatological Association.—The seventeenth annual meeting will be held in Washington, on Tuesday, Wednesday, and Thursday, May 1st, 2d, and 3d, under the presidency of Dr. Abraham Jacobi, of New York. In addition to the president's address, the programme includes the following papers: The Modern Physician's Duty to his Tuberculous Patients, by Dr. Frederick I. Knight, of Boston; The Construction and Management of Small Cottage Sanatoria for Consumptives, by Dr. Arnold C. Klebs, of Chicago; A Report of Certain Cases of Tuberculosis which were apparently due to the Nature of the Soil, by Dr. Richard Cole Newton, of Montclair, New Jersey; The Educational and Legislative Control of Tuberculosis, by Dr. Charles Denison, of Denver; Some Phases of the Tuberculosis Problem in Colorado, by Dr. Sherman G. Bonney, of Denver; Some Personal Observations on the Effect of Intrapleural Injection of Nitrogen Gas in Tuberculosis, by Dr. H. P. Loomis, of New York; Bacteriotherapeutics, with Special Reference to Tuberculosis, by Dr. E. R. Baldwin, of Saranac Lake, New York; The Subsequent History of Patients apparently Cured by Antitubercle Serum, by Dr. J. Edward Stubbert, of Liberty, New York; Stomach Conditions in Early Tuberculosis, by Dr. Boardman Reed, of Philadelphia; The Phlebitis of Advanced Phthisis, with a Report of Cases of Phthisis following Abscesses of the Hand, by Dr. R. G. Curtin, of Philadelphia; A Report of a Case of Splenomyelogenic Leucæmia with Tuberculosis, with Remarks on Blood Examination in Tuberculosis, by Dr. H. L. Elsner, of Syracuse, New York; The Hydriatic Treatment of Tuberculosis, by Dr. J. H. Kellogg, of Battle Creek, Michigan; Petroleum Oil in the Treatment of Phthisis, by Dr. W. D. Robinson, of Philadelphia; The Inadequacy of the Physical Signs as indicating the Gravity of a Pneumonia, by Dr. Andrew H. Smith; The Blood Changes in High Altitudes, by Dr. S. E. Solly, of Colorado Springs; The Bath in Gout, by Dr. Charles C. Ransom; A Case of Mural Endocarditis, by Dr. Harold Williams, of Boston, and Exercises suitable for Children suffering from Heart Disease, by Dr. J. Madison Taylor.

The Relation between Human and Bovine Tuberculosis.—Dr. Edward Moore, M. R. C. V. S. (*St. Louis Medical Gazette*, April), taking exception to the positive statement of an author in a previous issue as to the danger of using milk from tuberculous cows, denies that the danger has been shown to exist; it is only suspected and lacks proof, he says, and adds: "If tubercle bacilli from the bovine can infect man, then it matters not whether they come from the cow's udder, throat, glands, lungs, or digestive tract. None of these writers points out danger to the cattle attendants who breathe the air laden with the bacilli, yet all well-informed physicians know that infection occurs most frequently by inhalation. The most recent scientific investigations show that original lesions of tuberculosis in the digestive tract are very rare, and as only a very few of the thousands of tuberculous cows have been found to yield milk containing tubercle bacilli it must be clear to him who ponders these facts that milk can play only a very inferior part in the dissemination of tuberculosis from cow to man, even if it could be proved that such transmission is possible. . . . It is idiotic to suffer a chill while drinking a little milk that contains a few bacilli, perhaps, and be perfectly calm while inhaling thousands of them in a barn where a hundred tuberculous animals are giving off millions of them."

"French Temperance Methods."—The *Journal of the American Medical Association* for April 7th, in an editorial comment on this subject, says the theory on which French temperance societies "appear to work is that abstinence is a positive, not a negative, virtue; in other words, they put the line of temperance rectitude down to about what would here be called moderate drinking, and consider any extra self-denial in this regard as worthy of special praise and reward. We read, therefore, of bestowal of temperance medals on abstainers, and the greater the temptation the more meritorious the resistance. Thus we hear of a special reward to a teetotal saloonkeeper who, when his customers insisted on treating him, drank water for white wine and colored sirups for 'Amer Picon.' This looks to American eyes like rewarding the devil for not eating the apple himself but only tempting Eve, though it may have its utility in France. In this country we fear a bartender with a temperance badge would hardly be taken as a temperance object lesson, but would be thought a good joke on the temperance people."

The Normal Capacity of the Human Bladder.—Dr. Gerrish (*Science*, March 16th), at the recent meeting of the Association of American Anatomists, said that this question could be answered by physiological tests only. The normal capacity was not shown by the amount of fluid which the viscus could possibly contain without rupture or even by that which it occasionally held without appreciable harm; but it could be determined by ascertaining the average amount of urine secreted in twenty-four hours, and the average number of micturitions in the same time. By this method the capacity was found to be not much in excess of two hundred and fifty grammes (eight ounces), or one half of that usually stated.

Death of Dr. Robert Cory.—The *British Medical Journal* for March 31st records the death of Dr. Robert Cory, of London. Dr. Cory was lecturer on forensic medicine and physician in charge of the Vaccination Department at St. Thomas's Hospital. He was also lecturer on vaccination to the University of Cambridge and teacher of vaccination at the stations of the Local Government Board.

Some years ago Dr. Cory, to test the possibility or otherwise of the transference of syphilis by arm-to-arm vaccination, caused himself to be vaccinated three times with vaccine virus from a syphilitic child, great care being taken to introduce only lymph free from blood cells. On the third occasion, unfortunately, he settled the disputed point to the serious damage of his health. His courageous self-sacrifice was recognized by the Local Government Board as a public service and helped materially toward the abolition of arm-to-arm vaccination.

A Deceased Physician's Aged Parents in Distress.—Dr. S. J. Wilson, of Wacousta, Clinton County, Michigan, asks us to set the following facts before our readers: A few years ago Mr. Charles W. Ingraham, of

Binghamton, N. Y., studied medicine in New York, graduated, and returned to Binghamton to practise. His parents had borrowed $2,000 to meet his college expenses and start him in practice. A few weeks ago Dr. Ingraham died, leaving the $2,000 unpaid. Now the old people are about to be turned out of their home, as their farm is to be taken to pay the debt, which was secured by a mortgage on the property. Dr. Wilson suggests that some members of the profession may like to contribute toward the relief of the old people.

An Examination for Appointment on the Marine-Hospital Service.—A board of officers will be convened at the Service Building, 378 Washington Street, New York, on Wednesday, May 23, 1900, for the purpose of examining candidates for admission to the grade of assistant surgeon in the United States Marine-Hospital Service. Candidates must be between twenty-one and thirty years of age, graduates of a reputable medical college, and must furnish testimonials from responsible persons as to character. The following is the usual order of the examination: 1. Physical. 2. Written. 3. Oral. 4. Clinical. In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify them for service in any climate. The examinations are chiefly in writing, and begin with a short autobiography of the candidate. The remainder of the written exercise consists in examination on the various branches of medicine, surgery, and hygiene. The oral examination includes subjects of preliminary education, history, literature, and natural sciences. The clinical examination is conducted at a hospital, and when practicable candidates are required to perform surgical operations on a cadaver. Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order as vacancies occur. Upon appointment the young officers are as a rule first assigned to duty at one of the large marine hospitals, such as the one at Boston, New York, New Orleans, Chicago, or San Francisco. After five years' service, assistant surgeons are entitled to examinations for promotion to the grade of passed assistant surgeon. Promotion to the grade of surgeon is made according to seniority, and after due examination as vacancies occur in that grade. Assistant surgeons receive sixteen hundred dollars, passed assistant surgeons two thousand dollars, and surgeons twenty-five hundred dollars a year. When quarters are not provided commutation at the rate of thirty, forty, or fifty dollars a month, according to grade, is allowed. All grades above that of assistant surgeon receive longevity pay, ten per centum in addition to the regular salary for every five years' service up to forty per centum after twenty years' service. The tenure of office is permanent. Officers traveling under orders are allowed actual expenses. For further information, or for invitation to appear before the board of examiners, address the Supervising Surgeon-General, United States Marine-Hospital Service, Washington, D. C.

Ladysmith and Typhoid Fever.—Considering what appears to have been the normal condition of Ladysmith in respect of typhoid fever, it would seem that there was no extraordinary increase during the siege. The *Archives de médecine et de pharmacie militaires* for March, citing the *British Army Medical Department Report* for the year 1897, states that Ladysmith has been occupied as a military post from May, 1897, the camp being situated two miles west of the town. It is entirely void of trees and vegetation, exposed to veritable dust storms during the windy, and filled with mud in the rainy, seasons. The tents are frequently blown down by the wind. The health of the troops is bad; they are severely affected with typhoid fever, continued fevers, and dysentery. These diseases are attributed to the use of water from the Klip River, which is polluted and often muddy. The water is, however, filtered and boiled before use. Such being the state of affairs prior to the siege, as evidenced by the British official reports, the mortality from typhoid during the war can scarcely be considered disproportionate.

The Legalization of Midwives' Practice in New York.—The committee on legislation of the Medical Society of the State of New York has issued the following circular: "A bill has passed both houses of the legislature of this State, authorizing the creation of a board of examiners in midwifery in this city, composed of the assistant sanitary superintendents of the board of health. As representing the medical profession of the State, we have protested against the enactment of this measure, for the reasons, first, that the practice of midwifery, being a part of the practice of medicine, should be restricted to registered practitioners of medicine; the legalizing of this practice by others will tend to perpetuate a system which we hope in time to succeed in having abolished; and, second, if by any train of circumstances it should be considered advisable to legalize this practice by other than registered physicians, we believe any act of legislature with this object in view should apply to the whole State, and not be restricted to one city or county. We believe, if midwives are to be examined and licensed, the work of examining them should be placed in the hands of the State board of medical examiners. We request you to write to the mayor of the city of New York, urging him to disapprove of this measure, and also to Governor Roosevelt, asking him to withhold his signature should the mayor give the measure his approval. There is need of immediate action in this matter, and we therefore ask you to act without delay."

The New York Academy of Medicine.—At the last stated meeting, on Thursday, April 19th, the order for the evening was as follows: The Physiology of Internal Secretions, by Professor W. H. Howell, of Johns Hopkins University, and the Physiological Effects of Extracts of Ductless Glands, by Dr. Richard H. Cunningham.

At the next meeting of the Section in Laryngology and Rhinology, on Wednesday evening, the 25th inst., Dr. D. H. Goodwillie will read a paper entitled The External Surgery of the Nose, which will be illustrated by means of wax models, photographs, specimens, etc. Dr. Emil Mayer will present the following cases: Abscess of the frontal sinus—operation and recovery; and two cases of abscess of the antrum of Highmore—drainage through the nose and the canine fossa. Dr. Wendell C. Phillips will exhibit a new galvano-cautery device for controlling the Edison current without the use of a motor.

At the next meeting of the Section in Obstetrics and Gynæcology, on Thursday evening, the 26th inst., the following papers will be presented for discussion: The Prevention of Dystocia due to Fœtal and Pelvic

Disproportion, by Dr. Edward A. Ayers; The Indications for Premature Delivery, with Special Reference to Eclampsia—the True Toxæmia of Pregnancy, by Dr. S. Marx; Uterine Abnormities and Tumors Complicating Pregnancy, with Indications for Treatment, by Dr. Brooks H. Wells; and When is it Proper to Interfere in Apparently Difficult or Delayed Delivery, especially in Primiparæ? by Dr. Malcolm McLean.

Malaria, Mosquitoes, and Petroleum.—The *British Medical Journal* for March 31st quotes the following remarks from Mr. C. W. McIntosh addressed to Mr. Alfred L. Jones, chairman of the Liverpool School of Tropical Medicine and a well-known West African merchant: "I could never understand until I read the *Report of the Malaria Expedition to West Africa* why it was that, during my fourteen months' residence in the petroleum field in Apolonia, West Africa, not one of the five white men under me, who had never been in Africa before, working from morning till night among stagnant swamps, ever got a touch of the old familiar fever. But I understand it now. Every drop of water upon and below the surface in that district is impregnated with petroleum, and, in the case of still pools full of decomposed vegetable matter, a film of the oil floats on the surface. This accounts for the remarkable fact that mosquitoes are non-existent in the locality. . . . During my expedition to Chad Lake some years ago, whither I was sent to enter into a commercial treaty with the Sultan of Borneo [*sic*], we Europeans attached to the expedition found that after crossing the summit of the watershed dividing the Chad basin from the Niger and its tributaries, we were no longer annoyed by mosquitoes. Now it is a curious coincidence that all the water in that vast region, the Chad basin, is what we termed for want of a better word 'brackish,' and very disagreeable to drink until one becomes, of necessity, used to it. It contains in solution the alkali well known in the southern Soudan as 'lubi,' which forms a considerable staple trade among the Mohammedan population of the Soudan, Fulanis, Haussas, and, in fact, all who, from time immemorial, have had no access to salt. It is collected periodically from the surface of the sun-baked ground after the annual subsidence of the waters during the dry season. The source of the alkali itself no doubt is in deposits below the surface. I have been wondering if the fact that the water of that region contains this alkali in solution accounts for mosquitoes not being present, for certainly they are not, although the natives suffer from the usual diseases of the country—for example, yaws (frambœsia), smallpox, and a sort of leprosy, but not elephantiasis. We did not find during our three months' residence in the populous town of Kuka a single instance of 'fever' among the Turks, Algerians, Moors, Arabs, and others, from more northerly temperate climates. If this scientific theory is correct, and the mosquito is alone to blame for the prevalence of malarial fever, it occurs to me to be another most curious example of the poison and its antidote existing, so to speak, side by side, although, of course, neither the alkali from Lake Chad basin nor the crude petroleum from the Gold Coast could be within commercial bounds available for use over the vast infected territories of West Africa; but for the purposes set forth in *Instructions for the Prevention of Malarial Fever* I should say that kerosene from America, a by-product of crude petroleum as it exists on the Gold Coast, would prove most useful. Crude petroleum, if dropped into water, remains floating as an intact bleb, whereas a drop of kerosene disperses itself over a large surface of water." Mr. McIntosh's observations in Apolonia, says the *Journal*, are direct evidence in favor of the view that petroleum products may be of use to exterminate the larvæ of *Anopheles*, while his experience both there and in the Lake Chad region gives strong indirect support to the theory that the mosquito is the true disseminator of malarial infection.

The Utility and the Ethics of Experiments on Animals.—The *British Medical Journal* for March 31st contains a review of Mr. Stephen Paget's Experiments on Animals which is so clear, so logical, so comprehensive, so incisive, and withal so dispassionate a review of the matters at issue between the thoughtful representatives on each side of the vivisection controversy, that we make no apology for reproducing it at length for the benefit of such of our readers as have not access to that journal. After a brief account of Mr. Paget's book, the *Journal* states that it has also received a "review" of this book from the Hon. Stephen Coleridge, and probably on the same occasion another appeal on the subject addressed to the medical profession; and it proceeds at some length to consider what the opponents of animal experimentation have to say concerning Mr. Paget's argument. The review concludes as follows:

"Finally, Mr. Coleridge makes what seems to us the only important point in his pamphlet—namely, 'Mr. Paget's colossal omission of the whole moral aspect of torture.' To this point we will return presently, when we consider the arguments of the other tract in deprecation of experiments upon living animals to which we have referred.

"Now, as regards the alleged inutility of Bernard's glycogen researches and of the search for antidotes for typhoid, diphtheria, rabies, plague, and cholera, while we believe, on the contrary, that very important results have been obtained, we are not careful to assert that in some halfscore years successes have been so definitely and widely matured as to withstand hostile advocacy. A larger view than this must be taken of the matter.

"In any science but the present, in physics or in chemistry, for instance, the experimental method is now followed, and after some two thousand years of darkness and error, proves to be the true method of attaining to natural knowledge. It is sufficient to say that to one who reads the history of natural knowledge with an open mind, the experimental method appears as not only the best, but almost the only method by which this kind of knowledge is to be achieved. In the sciences which we have taken as illustrative, the experimental method has from the time of Galileo, let us say, proved itself indeed to be the only clew to truth; the advance of physical and chemical science has become identified with this method, and the centuries in which natural knowledge stood still—which in physiology we may roughly assume to be from the time of Galen to that of Harvey (some fourteen hundred years)—were marked by disuse and even contempt of this method.

"Mr. Coleridge's gibes that discoveries of the nature of living processes have led to no alleviation of disease are gibes which have been directed not at physiology only, but also at scientific students of medicine generally, for many centuries. Yet any one who is acquainted with the history of physiological discovery in the hands of Harvey himself and of his immediate predecessors is well aware that this dawn of knowledge of the nature of life advanced precisely in so far as the experimental method was rigidly pursued, and that deviations from this method were responsible for most of the false opinions which still embarrassed that advance both in the seventeenth and eighteenth centuries. In the fields of other sciences Mr. Coleridge probably would recognize this, and he can not but recognize that if physiology is to progress, such must be the method of its progress.

"It is not, perhaps, too much to say that in no instance has an anatomist of the dead discovered a function of the living body; if a few such instances are on record they escape our memory, and at most are a negligible quantity. Observation does not suffice; experiment is inexorably necessary, if we are to learn from the large and consistent teachings of history, and it is difficult to see what other teaching we are to look for. Whoso may doubt that this was Harvey's method and the only method by which he advanced our knowledge of life can not have read Harvey's treatise *De Motu Cordis* or his *Epistles to Riolanus*.

"Now, Mr. Coleridge can not deny that by the experimental method we are attaining to a knowledge of living function, nor is he surely so skeptical as to assert that a knowledge of life is likely to be unprofitable to the physician; his contention must be that, this method being on ethical grounds illegitimate, we must remain ignorant. This is a perfectly fair issue, and it is comprehensible that serious persons may differ upon it. It is therefore with more interest that we leave Mr. Coleridge's pleadings—forensic efforts of a kind which have won for his gifted family not the least of its honorable distinctions—and turn to his passionate denunciation of the experimental method, in physiology alone, on moral grounds. It is on the same grounds that an appeal is made to the medical profession in the tract issued by the Friends' Antivivisection Association.

"Mr. Joseph Fry and his cosignataries see, what Mr. Coleridge does not see, or as an advocate avoids, that the point between the physiological investigator and themselves is not whether such and such discoveries are scientifically illuminating, and so likely to be beneficial or not—let it be granted, indeed, that they will alleviate human suffering and prevent human sorrows—but whether it be lawful or unlawful to obtain such knowledge in the only possible way. The Society of Friends is consistent in not shrinking from this issue, as the Friend does not shrink also from saying that, whatsoever the ends to be gained in the sphere of justice or of ideas, under no circumstances is war justifiable. To other mortal men it appears that our lot is cast in a world of conflict, and that in it life is not a thing absolutely inviolable but, whether of animal or man, to be economized. To physicians who are familiar with the unutterable pain and afflictions of mankind, it seems that the life of animals, when animal life is in the balance against the lives of men, is not to be conserved absolutely, but with economy and care to be spent.

"Mr. Coleridge, in his forensic way, says that 'On such a basis of naked utilitarianism the torture of hospital patients, not for their own benefit, but for the sake of science, might with equal logic be defended.' Mr. Coleridge does not really think this—it is only his way; he does not really think that if a man, a boy, and a pig are pining in a boat that either the pig or the boy might with equal logic be killed to feed the man. He knows that, although human life may be sacrificed for the common good where certain tremendous issues are involved, yet, short of these, something like an absolute sanctity ought to protect man from man. Some ardent philanthropists have been tyrannicides, but the verdict of the world is against them; we all admit that the experimental method has its limits in human society. But can any reasonable disputant say that animals are or ought to be in the same sacred position? Mr. Coleridge, we presume, does not hesitate day by day to kill animals for his eating, because he likes flesh better than vegetables; wherein he seems to go rather a long way. He probably enslaves animals also, and otherwise looks on them as given for the use of man. Not that this alone justifies experiment upon them, but surely it puts an end to the plea that to experiment on animals is on all fours with experiment on hospital patients?

"Mr. Coleridge objects to Mr. Paget that 'he simply assumes that if torture (of animals) be useful to man, it is justifiable.' Well, passing by the dyslogistic word 'torture,' Mr. Paget does assume it, and so do most thoughtful men; moreover, an instructed public opinion is deciding this matter every day more and more distinctly in Mr. Paget's favor. Pain and death are implicit in the world as it is made; all that man can do is to minimize them to the uttermost. The position of the physiologist is that by some small sacrifice of animal life—small, that is, in comparison with the sacrifice of animal life in other directions, as for food or in war, and infinitely small in respect of the issues involved—the laws of life can be discovered, and as in the other natural sciences, by the experimental method only; also that by a knowledge of these laws only, if at all, can life be managed, and disease prevented or cured. If the public were to agree with Mr. Coleridge and his friends, these inquiries would cease, our search into the laws of life would be fruitless, and medicine, public and private, would return into the degradation into which, for lack of experimental methods, it fell in the time, let us say, of Louis XIV, or of the Great Plague of London. The serious tract of the Friends recognizes this alternative, and faces it without flinching; and as with the tract was a courteous appeal to the medical profession to wrestle with them in this high argument, and to state its individual views in the stamped envelopes inclosed, the present writer ventured accordingly to state the following ethical problem, and to request a plain answer of 'Yes' or 'No.' The problem, abstracted in non-essentials so as to conceal an actual occurrence within the writer's own experience, was stated as follows:

"A father had a dearly beloved and only child, a grown-up daughter, who fell ill of diphtheria. His physicians told him that without the use of the diphtheria antitoxine she must die. The father asked if the discovery of this antidote was made by experiment on animals, and their answer was to this effect. Again he asked if the supply of the remedy is maintained by operations on animals. The answer was necessarily in the affirmative. The father replied that to use the remedy was against his conscience, and that his child's life was in the hands of God. On the premises of Mr. Coleridge and his friends the father was right; his daughter died. The father now believes that, as every expert knows, by the use of the remedy the life of his child might have been saved, and in his remorse is a broken-hearted man. The question put to Mr. Fry and his cosignataries is, 'Was the father right or was he wrong?' a question which admits of a simple 'Yes' or 'No.' To this question, invited by the Friends' Society and forwarded to them many weeks ago, no answer has been received."

Original Communications.

A CONTRIBUTION TO THE HISTOPATHOLOGY OF EPIDERMOLYSIS BULLOSA (HEREDITARIA).

By GEORGE T. ELLIOT, M. D.,
PROFESSOR OF DERMATOLOGY, CORNELL UNIVERSITY MEDICAL COLLEGE.

(*Concluded from page 588.*)

*Histopathology.**—The stratum corneum and granulosum were normal. In its major part the stratum spinosum was unchanged, but in its deeper portions—one to two cell rows—just above the stratum basale, and particularly in the interpapillary prolongations of the rete, degenerative cellular changes became apparent. The stratum basale was the especial seat of the abnormal conditions observed. In varying degrees, it was attacked in its entirety, for only here and there were small groups of cells as yet unchanged. All stages of degeneration, from very slight and beginning cellular disturbance to complete destruction of the cell, could be followed and traced with the greatest ease in this layer. In consequence, when the conditions had been recognized, a striking picture was apparent, being constituted by a more or less broad cellular zone, which had reacted and responded in such a way to the staining media used that it stood out sharply demarcated and defined from the healthy portions. This was especially seen and shown in the interpapillary prolongations, of which a fourth, a third, and even more were affected, and in their appearance presented a most striking contrast to that portion of the rete of which they formed a part and which was entirely normal. The line of separation between the healthy and degenerated portions was not always sharp. As a rule, it began brusquely, but in many places partially affected cells were seen in contact with those already entirely destroyed.

The cellular changes referred to were found to implicate the entire cell—the nucleus as well as the protoplasm of the cell body. They were shown best by Unna's granoplasm stains, as I have already stated, but after recognition they could also be seen to some extent when sections were stained with hæmatoxylon or wasserblau-saffranin. With these latter the affected area was either stained very faintly or not at all, in the latter case being represented by a grayish, faintly granular zone occupying the normal site of the stratum basale and of those other rete cells attacked. With the polychrome stain the primary changes observed in the *nucleus* were that it took the stain with less intensity than in the healthy cell, it became paler in color, and from this slight change it underwent most varying transformations until it disappeared altogether, contour, chromatin network, etc., everything having melted away under the influence of the existing process. The transformations of the nucleus and cell body represented in Fig. 1 were taken from cells at various stages, in which it was seen that from faintly staining the nucleus became clear, with one or two nucleoli; or these were absent, but the nuclear chromatin was heaped up on one side or the other; or the contour of the nucleus was intensely stained and broad and inclosed or surrounded a perfectly clear portion. Again, only dark and deeply stained clumps of most irregular shape were met with in an apparent vacuole situated in the protoplasm of the cell body—the outline of the nucleus still existing, but no other feature of its structure remaining. Ultimately contour and everything disappeared, though here and there in some cells particles or small clumps of deeply stained chromatin remained, apparently representing the preexisting nucleus.

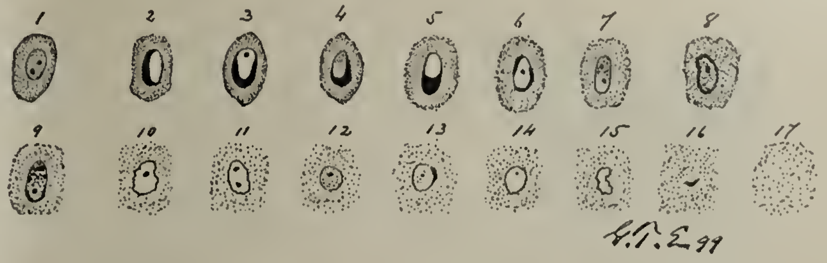


Fig. 1.—Changes found in various cells constituting the stratum basale—changes affecting the nucleus as well as the cell body. Reichert immersion $\frac{1}{12}$. Necessarily the granoplasm is accentuated for the purpose of demonstration.

The protoplasm constituting the body of the cell had likewise undergone degenerative changes. They occurred for the most part synchronously with those in the nucleus, but, still, variations in degree were met with here and there, one or the other having succumbed more quickly—that is, the nucleus might have already disappeared, while the cell body was still intact or hardly affected, or the intensity of the process seemed to be expended especially on the cell body, the nucleus being only slightly implicated. The observations made were that the granoplasm at first lost its tingibility to some extent, fewer granules seemed to take the stain, and those that did were further apart than in the normal cell, as though a rarefication of the chromatin granules were taking place. Further changes were only of degree, the deficiency in staining property affecting more and more the granoplasm of the cells, until pictures such as were found in the interpapillary prolongations of the rete were produced. In these the progressive loss of tingibility or molecular death of the protoplasm could be easily traced, and the various stages could be followed from the beginning up to the point when the cell became unrecognizable as such, being represented by a granular unstained area without contour or definite limitation, with perhaps a few stained granules scattered here and there, or with a darkly stained chromatin clump, the remains of a nucleus, lying in an apparently haphazard manner in the existing *débris.* The unstained area referred to often occupied the space that normally would be the seat of several cells, and diagrammatically the condition is shown in Fig. 2, drawn under Reichert immersion $\frac{1}{12}$. In this place cells can be seen representing all stages of degeneration, as well as those in which the granoplasm was normally stained, and the conditions existing in the sections can easily be appreciated, it being borne in mind, however, that black and white drawings necessitate more details to delineate the degenerated portions than really exist.

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* The exquisite photomicrographs accompanying my paper are due to the kindness of Dr. Fordyce.

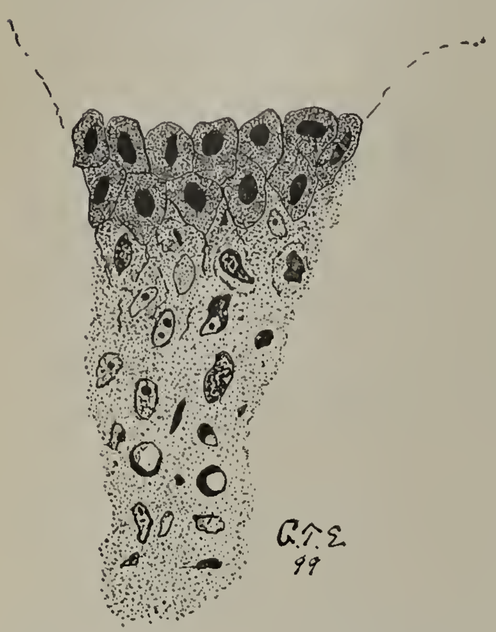

Fig. 2.—Portion of an interpapillary prolongation. Above are normal cells of the rete. Reichert immersion $\frac{1}{12}$.

Besides this plate, I would also present Fig. 3, representing an interpapillary prolongation drawn under Reichert 4, in which the contrast between the degenerated and the healthy areas is very accurately, though diagrammatically, shown. Fig. 4 demonstrates a series of papillæ and interpapillary prolongations, and also is intended to represent the cellular hyperplasia around the subpapillary plexus of blood-vessels.

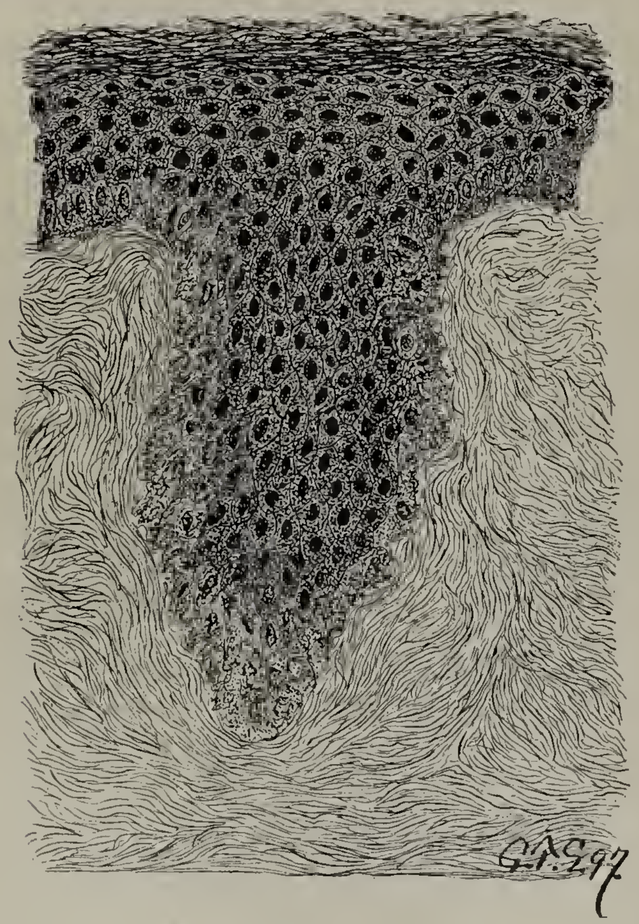

Fig. 3.—An interpapillary prolongation. Degeneration of stratum basale and contiguous cells.

In addition to the pieces of skin which were excised from areas objectively entirely normal, others were removed which had been subjected to mechanical irritation by myself. Thus, a small portion of the surface having been rubbed with the blunt end of a pencil for thirty seconds, it was cut out fifteen to thirty minutes later, placed in alcohol, and then treated in the same way as were the portions obtained from the unirritated skin. In sections from these, the cellular degeneration already described was found present and recognizable to a greater or lesser degree. Owing, however, to the serous transudation occurring in response to the irritation applied, it was not so distinct and definite, but the cells still retaining their contour had become drawn out in the direction of their long axes—they were spindle-shaped. In places the basic portion of the rete had apparently melted away and disappeared, a cavity of some extent being formed, containing a little granular *débris,* and undoubtedly before excision some amount of fluid. The entire rete, moreover, appeared loosened and lifted up, as though the wave of transuded fluid had simply swept away an epidermis not securely fastened to the subjacent tissues, but only superimposed upon them (Fig. 5). This condition was also suggested most particularly in sections made of an artificial bulla excised twelve hours after rubbing. In these (Fig. 6) the outer wall of the tense lesion can be seen to be composed of the rete and the stratum corneum, etc., but the base is constituted by the corium alone, the naked papillæ jutting into the cavity and forming an irregular bed for the fluid which had caused the formation of the bulla. This condition is still better shown in Fig. 6.*

The contents of these cavities varied accordingly as they were obtained from pieces excised shortly after irritation or from fully developed bullæ of some duration. In the former, no fibrin was obtained by Weigert's method, but there were only pale granular *débris* and some free normal or partly degenerated epithelial cells and no leucocytes. In a bulla twelve hours old, fibrin threads were present, forming a network, and also granular *débris* and a few multinuclear leucocytes. In a bulla from the inguinal region, not produced artificially and excised a few hours after formation, fibrin was markedly found, but *none* was detected in sections made from the skin apparently normal prior to excision. No appreciable disturbance in the corium was seen in the sections from the normal skin, except in regard to the blood-vessels. Those situated in the papillary and subpapillary portions of the cutis seemed to me to be hyperplastic (Fig. 4), their coats thickened, the cellular elements outlining their course greatly increased in number, not embryonic in type, but fully developed. No cell nests surrounding them were seen anywhere.

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* Figs. 5, 6, and 7 are photomicrographs, which I owe to the kindness of Dr. Fordyce, and for which I return my sincerest thanks, since they show conditions which really existed, and which preclude the influence of the personal equation, etc.

No polynuclear or mononuclear leucocytes, but all bore the characteristics of connective-tissue cells. Mast cells were present, but not in greater number than in normal skin. With the eosin and methylene-blue method a few eosinophile cells were found, but always in the lumen of the blood-vessel. No mitoses were seen either in the rete or in the cutis propria. Certain other features found in the sections I omit owing to their not being germane to the subject. They were entirely secondary conditions found in lesions which occurred of themselves—were not produced by myself—which had existed for some hours, and they were of such a nature as might be present in any lesion becoming secondarily inflammatory in character.

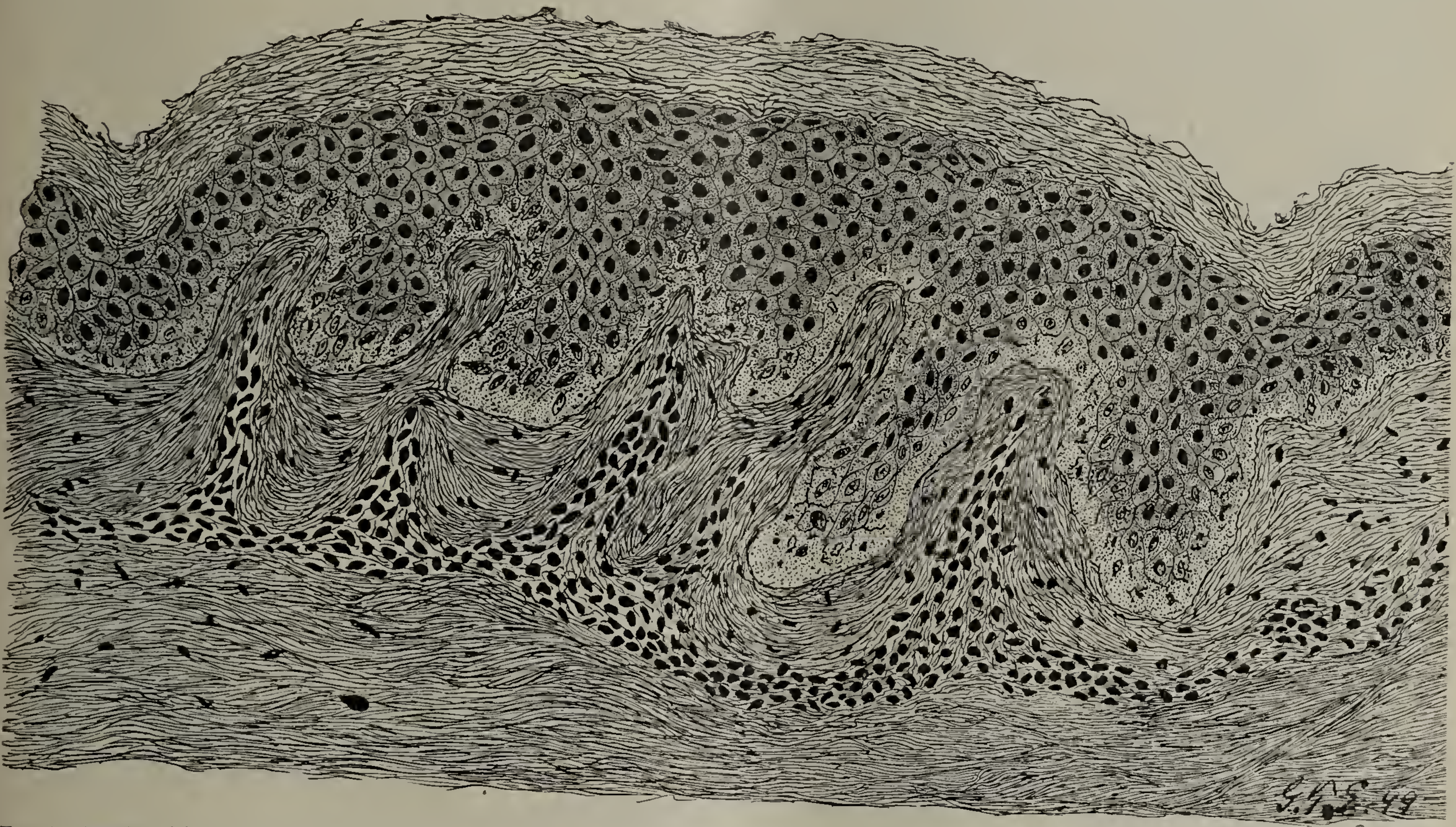

FIG. 4.—A series of interpapillary prolongations showing the degeneration of basic layer of rete. The line of contact with the corium is accentuated to bring out the contrast more distinctly.

The morbid changes, which have just been given in detail, refer, I would repeat, especially to those portions of the patient's skin which were to all appearances absolutely normal before excision and which had not been subjected to any more irritation than the skin of a living individual would be from the rubbing of the clothes through ordinary physical movements. These changes allow me, I believe, to state that a degenerative process occurred in certain portions of the epidermis, resulting in molecular death of the nucleus and of the protoplasm of the cell body. This was evidenced by the cells attacked gradually ceasing to respond to staining fluids to which in health they did respond, and becoming transformed into an aggregation of faintly staining granular *débris*, and finally into a colorless, formless mass, possessing neither outline nor contour nor resemblance in any part to either nucleus or cell body. The degenerative changes attacked primarily the cells constituting the basic layer of the rete, though contiguous portions of the stratum spinosum were very commonly implicated; but the interpapillary prolongations of the rete showed the maximum intensity of the process—a third, a half, and even all of the cells constituting them being in part or totally destroyed.

Easy, however, as it was to recognize and establish the existence of the degenerated state of the cells, so much more was it difficult to define accurately the nature of those changes. Fibrinoid degeneration could be excluded, colliquative death of the cells was certainly not present, and I can only attribute the cellular metamorphoses to coagulation necrosis, a form of cellular degeneration with which the changes found agreed more closely than with any other.

I can not conceive that the presence of the features described was accidental or of no significance, since they were found in sections excised from all parts of the body and at all seasons of the year. They could not be due to the methods of hardening, staining, etc., inasmuch as similar degenerative features were and have not been seen in specimens treated in the same way and obtained from normal skin. In some sections, however, of certain chronic inflammatory processes similar changes have been found by me in circumscribed areas, but yet only in connection with objective symptoms of cutaneous disease. When, on the other hand, we consider the ubiquity and constancy of the degenerative changes in this patient, when we consider that in the experimental, as well as in the lesions arising independently, the line of separation between the rete and the corium was always coincident with the line of cellular degeneration, it certainly would seem justifiable to connect the two together and to regard the molecular necrosis taking place as an important and determining cause of the bullous formations occurring in epidermolysis bullosa. In other words, owing to the cellular degeneration existing, the normal coherence between rete and corium is diminished to such an extent that the former is easily lifted or swept off by the wave of serous transudation pouring out from the blood-vessels in response to some irritation greater than they are subjected to under ordinary conditions.

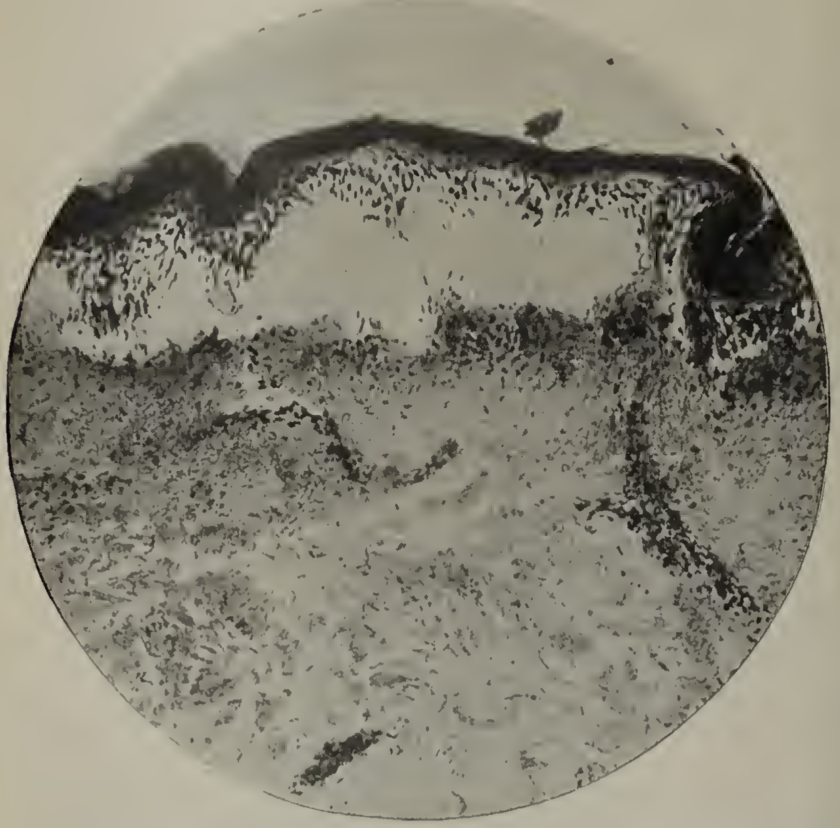

FIG. 5.—Section of skin removed twenty minutes after rubbing skin for thirty seconds.

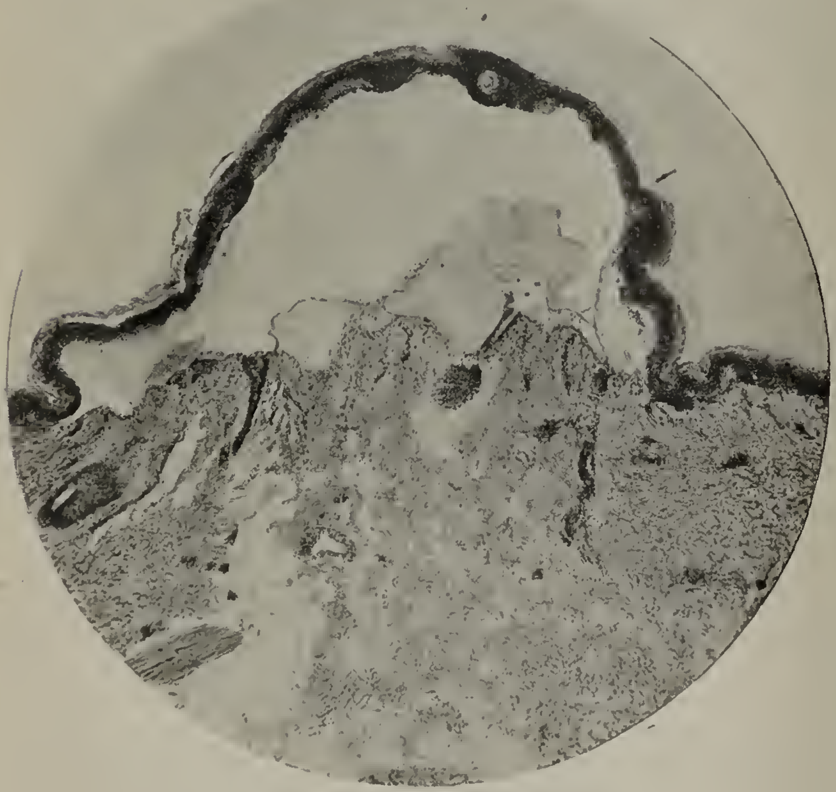

FIG. 6.—Section of bulla twelve hours old.

The histopathological changes which I have described, explanatory as they may possibly be of the formation of the anatomical lesions characterizing the process of epidermolysis, do not, however, explain absolutely the existence or the *raison d'être* of the cutaneous disease itself. Its ultimate cause will have to be determined by future and extended investigations, if it ever can be, but my observations and study of three cases suggest to me that epidermolysis bullosa is not a disease in the strict sense of the term, but a cutaneous condition. The individual is born with a congenital irritability of the vascular supply of the skin which responds to every irritation to which it is subjected, no matter how slight it may be, such as friction of the clothes, pressure or rubbing of every kind—occurrences which would have no effect on another person, except possibly transitory hyperæmia. In consequence of this constant response to irritation, the basal portion of the rete is kept bathed in more or less serous transudation and the degenerative changes described result. A greater irritation being applied, a greater pouring out of fluid takes place from the blood-vessels, and then the loosely fastened rete is swept off from the area irritated and the bulla is thus formed. That this should occur more readily in summer than in winter can be easily understood when the greater vascularity of the skin in summer is borne in mind.

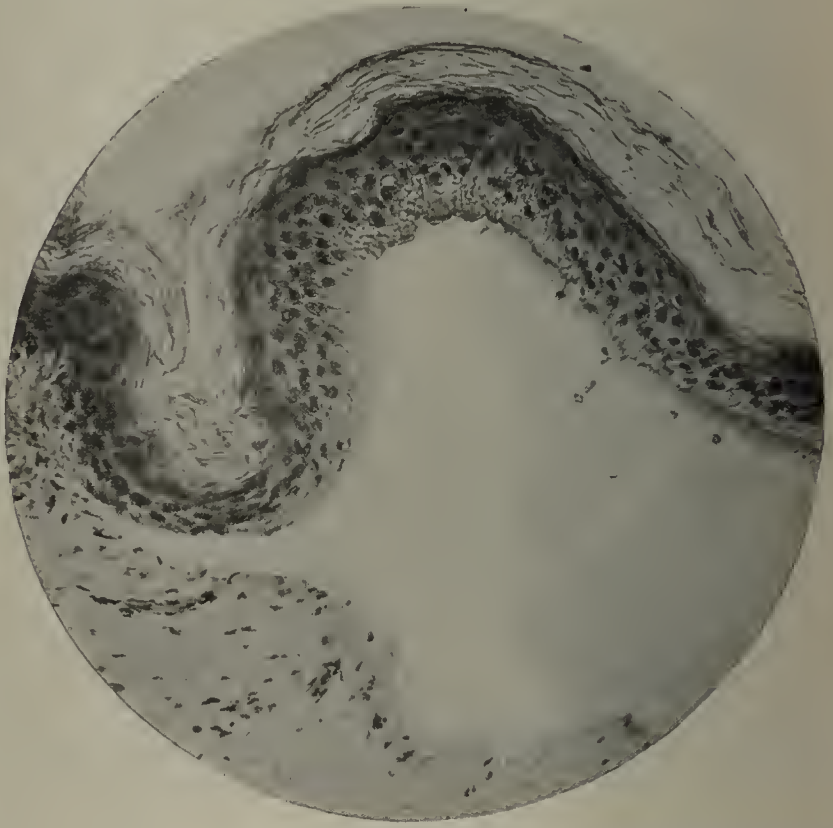

FIG. 7.—Portion of same bulla as Fig. 6, but higher amplification. The degeneration of stratum basale can be seen.

The histopathological study of epidermolysis bullosa previously made by me led me to conclusions differing in certain particulars from those here recorded. Those conclusions were, however, based upon observations derived from a bulla which had been existent for at least an hour, and I was led from the beginning inflammatory changes seen about the blood-vessels to regard the process as primarily a dermatitis "in an individual with an acquired or hereditarily exaggerated irritability of the cutaneous vascular system." I feel obliged, however, to retract now the opinion that the process is primarily a dermatitis, since I must regard the inflammatory changes as only secondary in view of the histological features found in the apparently normal skin of this patient. I still believe, nevertheless, that the prime feature in the existence of the process is "an acquired or hereditarily exaggerated irritability of the cutaneous vascular system." Whether, in addition, there may be a congenital instability of the cells constituting the stratum basale, so that they readily and easily undergo degeneration, is a question I do not feel prepared to take up at present.

36 East Thirty-fifth Street.

NITROUS OXIDE; ETHER; CHLOROFORM.*

By S. ORMOND GOLDAN, M.D.

Ether.—Chapters might be written on how not to give ether. The unpleasant symptoms occurring during and after narcosis are considered as a matter of course; to lessen or prevent them is an effort rarely made.

Ether, as usually given, is poured into a mask or cone and forced upon the patient's face; naturally, he struggles (who would not?). This struggling is considered as a part of the phenomena of etherization, and rarely attributed, as it correctly should be in most cases, to the ignorance of the administrator. If those who consider etherization of so little import would hold a saturated inhaler to their own faces, I do not doubt they would have more consideration for their patients thereafter. Ether, properly administered, will only exceptionally produce the intense excitement and struggling in which it becomes necessary to restrain the patient.

How, then, should ether be administered? If nitrous oxide is at hand, by all means its administration should precede the inhalation of ether (see section under Nitrous Oxide and Ether). When this is not possible a closed inhaler is, in most cases, a prerequisite for ideal etherization.

The requirements of an ether inhaler are:

1. Simplicity: It should be so constructed that a knowledge of the principles governing its use can be easily acquired.

2. Cleanliness: No two parts should be soldered together (thereby avoiding lodgment of septic material); each part should be separable and easily cleaned.

3. So constructed that when occasion demands it may be used as an open or partly open inhaler.

4. It should be inexpensive, that the rubber parts can be frequently replaced.

5. So fashioned that it reduces the anæsthetic to the smallest quantity consistent with perfect anæsthesia.

6. No sponges (for obvious reasons), but gauze should be used, freshly replenished for each case.

7. It should have large air-passages, so that respiration will not be impeded.

8. No complicated ether and air replenishing contrivances; they are quite unnecessary.

9. A rubber bag of fullest respiratory capacity.

Clover's and Ormsby's inhalers are most largely used of the closed variety. However, little care is ever observed in cleansing them. I do not think either Mr. Clover or Dr. Ormsby ever intended that the inhalers devised by them should be used in successive cases without first having been cleansed; it is hardly surprising that they become "odorous," to use the term applied to them by a surgeon to a city hospital. A few words regarding open ether inhalers may not be amiss. Those who advocate their use say that air should be fully saturated with ether during its inhalation. They do not, however, state that this method also saturates the patient. It is just in the use of these inhalers that pulmonary and renal complications occur. It may also be said that those who use the open inhalers do not, as a rule, use the closed pattern; any one who uses both inhalers in a sufficient number of cases to become thoroughly familiar with them uses, as a matter of preference, the closed variety; at least, this has been my experience.

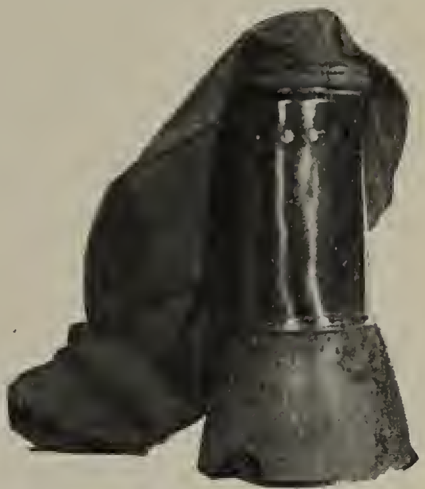

Fig. 1.—The inhaler adjusted for use.

There is no invariable rule in methods of anæsthetization, and, while a closed inhaler is preferable in most cases of etherization, it is not so in all. Some patients should not, and others can not, be etherized with closed inhalers, and for this purpose, and to overcome the objections to most of them, I devised the simplified open and closed ether inhaler here illustrated. This is composed of six separable parts, and consists of a central cylinder and a shorter one telescoping into its distal end; these are made of light-weight metal, nickeled. Both cylinders are flanged; to the larger one is attached a non-pneumatic, consistent rubber face piece, to fit either children's or adults' faces. To the flanged end of the smaller cylinder is attached a rubber bag. Two metal baskets accompany each inhaler, one inserted into the opening of the smaller cylinder to prevent the bag being drawn into the inhaler during inspiration; gauze, freshly replenished for each case, is used in the other basket, which is inserted into the longer cylinder.

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* Read before the Medical Society of the County of New York, February, 1899. A supplement to the author's article published in the *New York Medical Journal* for July 29 and August 5, 1899.

I have had recently introduced into the inhaler a series of air openings, for use in connection with nitrous oxide as administered with the American apparatus, and also for those who prefer admitting air through openings and valves during anæsthesia, rather than remove the entire inhaler from the patient's face, which I prefer. These openings consist of a series, perforating each cylinder; by turning the smaller cylinder to the right or left, from one to five openings can be had; if more than this number are required, withdrawing the smaller cylinder till the inner series of openings appear will make ten in all; if still more air is desired, the small cylinder, with bag attached, is entirely withdrawn, making an open inhaler. The rubber bag of fullest respiratory capacity is specially made, and of very fine texture rubber. This subserves two important purposes: First, as an essential part of the inhaler; and, second, as an ideal index of respiration. In using a closed inhaler, the patient is anæsthetized with ether and carbonic-acid gas, produced during his own respiration. Carbon dioxide is a narcotic, and similar to nitrous oxide in its effects; it increases the action and rapidity of ether, and lessens the quantity of that agent and the danger of supersaturation, at the same time producing a better type of anæsthesia than with open inhalers, in which ether alone is used.

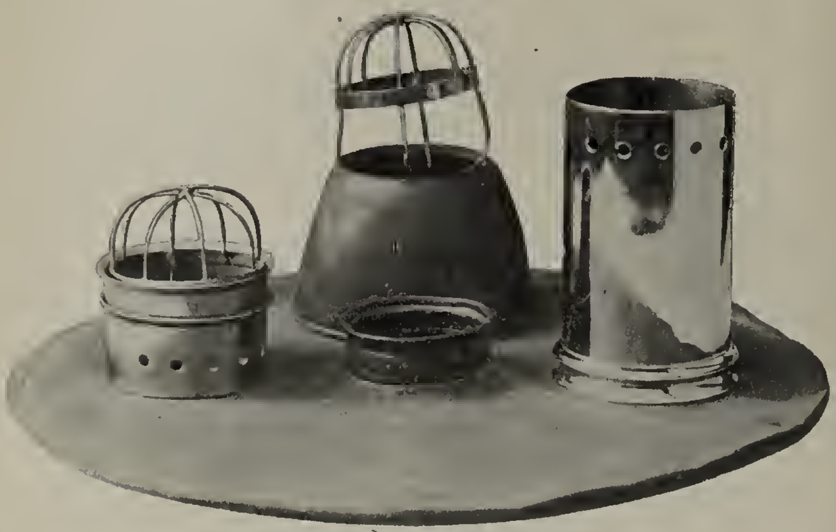

FIG. 2.—The inhaler separated for cleansing.

About one ounce of ether is poured into the inhaler, the patient encouraged to breathe deeply; at the same time he should be told the sensations he will experience. His head should be slightly extended on a direct line with the body, and turned fully to the side. This subserves a double purpose: It makes almost a direct line from the nares to the larynx, and so affords a free ingress of air; and permits mucus and saliva to flow out of the mouth or into the œsophagus instead of the trachea. It also permits the tongue to fall to one side instead of upon the epiglottis, and so obviates the closure of the superior aperture of the larynx. If these simple precautions are observed, rare will be the instances in which mouth gags and tongue forceps become necessary. The head, correctly placed at the commencement of the narcosis, will remain so throughout the entire operation. *Never*, under *any* circumstances, should a saturated ether inhaler be forced upon a patient's face—give the patient a chance. Ether is extremely irritating to the upper air-passages; as they become accustomed to the vapor, the inhaler may be brought nearer to cover the nose and mouth. If the patient coughs or holds his breath, the vapor is too strong. The inhaler should be removed and gradually brought closer again; impress upon the patient the fact that he is perfectly safe, and encourage him to breathe deeply. Given this way, rarely will it become necessary to restrain the patient, as a result of a tendency to struggle. Ether administered in this manner will eliminate many of its unpleasant features, but sometimes at the expense of time.

After anæsthesia is complete, the inhaler should often be removed, permitting the patient to breathe pure air. There is no rule as to the length of time the patient's face should be uncovered. It varies for each case, and is arrived at only by experience. This avoids supersaturation, always more or less a concomitant with the towel and paper cone (which is usually kept on the patient's face throughout the narcosis), and also open inhalers. Upon these practical points largely depends the production of ideal etherization.

CHLOROFORMIZATION.—In the administration of chloroform all inhaling devices which do not permit of an actual free ingress of air must be avoided; a mask which is saturated with the anæsthetic acts as a closed inhaler, for chloroform, being four times as heavy as air, sinks to the patient's face, and as a consequence he inhales a pure chloroform vapor.

The simplicity of the Esmarch's inhaler has much to commend it. Its two chief objections are its closeness to the patient's face and that flannel is usually used instead of gauze. By a rearrangement of the parts of the ether inhaler devised by me, a very efficient chloroform inhaler can be made (Fig. 3). This consists in attaching the face piece to the flanged end of the smaller cylinder; a few layers of fine-meshed gauze, through which air can easily move, are cut circularly and made to cover the closed part of the wire basket, which is pushed through from the proximal end of the cylinder. It will be seen that this makes a dome-shaped surface, upon which the anæsthetic is to be dropped; it also obviates the use of vaseline upon the

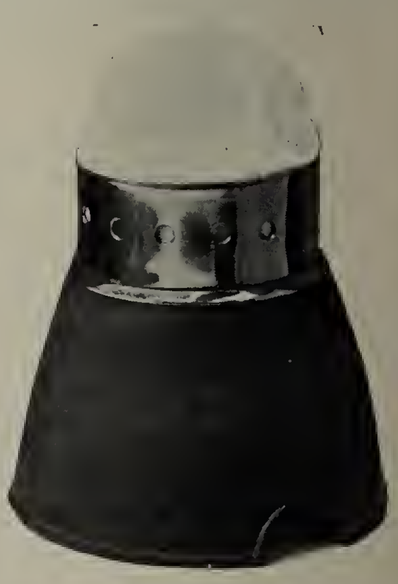

FIG. 3.

patient's face, and permits a free mixture of air. Krohne's modification of Junker's apparatus as a regulating inhaler has the advantage over all others of scientific accuracy combined with safety. While not as simple as the inhalers mentioned, it is far safer, particularly in unskilled hands. By the use of this inhaler the patient is gradually anæsthetized with an increasing quantity of the anæsthetic, up to a certain point, which is brought to him mixed in the proper proportions with atmospheric air, the quantity of the anæsthetic being regulated by the compression of the bulb, which is timed to the patient's inspiration. This apparatus restricts the quantity of the anæsthetic used to a very small amount. Accidents can, of course, occur with this apparatus as with any other. The parts must be properly adjusted, or liquid chloroform may be projected instead of vapor. The apparatus should always be tested before using.

For tracheal chloroformization the following apparatus, devised by me, has advantages over others made for this purpose. This consists of a silver tracheal tube of half an inch internal diameter. To this is accurately adjusted an S-shaped tube, which may be turned to the centre and to the right or left side; to this is attached a wide-calibred rubber tube of variable length, to the end of which is attached a metal funnel, covered with gauze, rendered taut by a metal band.

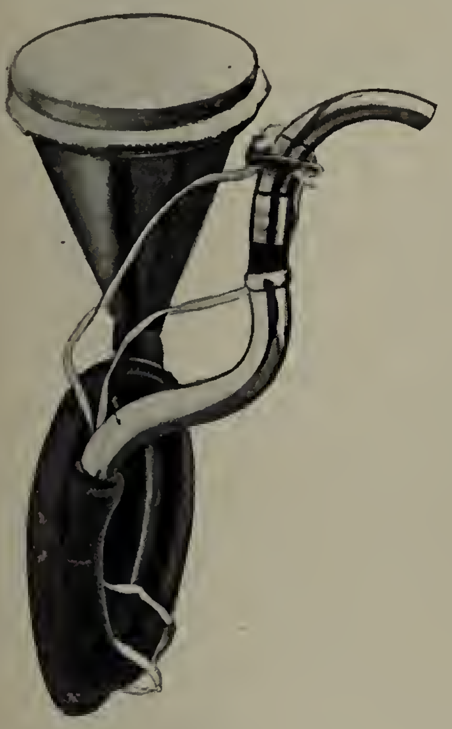
Fig. 4.

The advantages of this apparatus over others similar is that the tube is attached to the funnel directly at its narrowest end, and not at right angles to it. There is a gradual diminution in size of the air-passage from the funnel to the tracheal tube, and the rubber tubing is of such consistence that it does not easily bend and so obstruct respiration. Gauze instead of flannel is used, having the advantage of being replaced for each inhalation, at the same time permitting a free admixture of atmospheric air. The most efficient drop bottle is made of glass, having a ground-glass stopper, grooved on each side. By turning this to right or left, the anæsthetic can be made to flow, drop by drop, with any rapidity desired.

It has been frequently demonstrated that death as a result of chloroformization occurred in the majority of cases during the commencement of the narcosis, before the operation was begun, and the question naturally presents itself, Was it the result of the anæsthetic or of the method employed? It is safe to say in the greater number of early fatalities that overdosage has been the cause of the fatal issue. When it is remembered that but twenty-four minims of chloroform, inhaled by means of a regulating apparatus, produce complete surgical anæsthesia, it is not difficult to understand how overdosage by too great a concentration of the vapor can occur. Chloroform, if not administered with a regulating apparatus, should be given drop by drop, at first *very slowly;* it is particularly important that the upper air-passages should become accustomed to the vapor gradually. It should be so distributed over the inhaler or mask that no part becomes soaked. It must be remembered that chloroform vapor falls, and if the mask becomes saturated it is just as bad as excluding all air. In fact, it does exclude air to a very great extent, and so the patient breathes a strong vapor, which is always the most dangerous factor with this potent agent. It is said that chloroform should never constitute more than four per cent. of the air inhaled. The only means of assuring this dilution is to administer the anæsthetic drop by drop. The practice of pouring from one drachm to an ounce of chloroform upon a mask and encouraging the patient to breathe deeply is never, under any circumstances, in my estimation, justifiable, and he who does it has certainly much to learn. I do not doubt that many a death resulting from chloroform has been caused by this method of administration. It should further be remembered that a small quantity of the anæsthetic, of this anæsthetic, as abnormal reflex action can cause collapse. The greatest endeavor should be made to gain the patient's confidence, as fright plus chloroform (as usually administered) is undoubtedly a factor in early chloroform syncope. The operation should never be begun until the patient is fully under the influence of this anæsthetic, as abnormal reflex action can cause collapse. The practice of operating in the minor surgical cases in the so-called primary stage of anæsthesia with chloroform is unjustifiable; with ether, unnecessary. There are few minor operations which can not be perfectly performed with nitrous oxide, the administrator possessing a fair degree of skill in the use of this gas. The *patient should never be encouraged to breathe deeply* (being directly the reverse with ether); his respiration should never be brought to his notice. The great essential is normal, regular breathing. Once the patient is anæsthetized he should not be allowed to return to the lighter degrees of narcotism; in order to avoid this, and limit the amount of the anæsthetic to the smallest quantity, it requires the administrator's whole attention. Chloroform should never be given uninterruptedly; after anæsthesia is produced, inhalation of fresh air should be permitted frequently. It often happens, as a result of the inattention of the administrator, or, rather, too great attention to the operation, that the patient partly regains consciousness, much to the operator's disgust; then the mask is soaked and held against the patient's face. I think it hardly surprising that the patient dies from the so-called "no apparent cause"; that he does not die is due more to chance than to skill upon the part of the administrator. After anæsthesia is complete, the effort should be made to have the patient inhale only the quantity necessary to replace that exhaled in the course of ordinary respiration. If the dropping of the anæsthetic is timed, a great saving in quantity will result; and even during long operations the amount used will be one of drops and not drachms or ounces.

Waller, in recent experiments, came to conclusions practically the same as Snow, in which he (Waller) says: "Chloroform should never constitute more than two per cent. of the air inhaled—it should average 1.5 per cent., never less than one per cent.

"1. Chloroform is not an uncertain drug.

"2. The notorious uncertainty and danger in chloroform administration is an uncertainty as to the quantity administered.

"3. The uncertainty in the quantity administered can be most easily avoided by following the principle of Junker's method.

"4. The great danger of the open method is an overdose. Unless a man is fully and really (that is numerically) cognizant of these four principles, then of necessity he is a dangerous administrator."

The phenomena of anæsthetization, described in degrees or stages, are practically the same with ether and chloroform, being usually much less developed with the latter agent than with the former. Much depends upon the manner in which either anæsthetic is administered.

During the commencement of anæsthesia there is a feeling of stimulation, warmth, and tingling sensations over the body; ringing in the ear, coughing, and swallowing movements, due to the anæsthetic vapor if too strong. The face becomes flushed; perspiration profuse; increased salivation and lacrymation occur; the pulse is usually greatly increased in rapidity. Respiration is rapid and forcible; the pupil gradually dilates; auditory sensations and consciousness, though blunted, are not abolished. When speaking loudly to the patients they often will respond; the eyeball moves if the lid is opened; ciliary, conjunctival, and corneal reflexes are still responsive to stimuli. Some patients, usually alcoholics and muscular subjects, become greatly excited and require being restrained. The occurrence of laughing, singing, praying, etc., though occasionally developed, is not by any means frequent, as some observers assert. Dreams often occur during or about this time.

During the second degree of narcosis, consciousness and auditory sensations are usually abolished. The higher the state of intellectual development the longer auditory sensations and consciousness persist. This fact can often be made use of practically when anæsthetizing patients. It is not generally known that the effort of a patient to push the inhaler from the face and to struggle is partly voluntary. They are capable of understanding; if spoken to loudly and told to put down their hands, and assured they are safe, they will do as told.

During anæsthesia auditory sensations and consciousness keep pace with each other and often persist during the second degree of narcotism. Few patients, however, are subsequently able to remember having been spoken to and having acted in an intelligent manner. All the more extraordinary is it when patients retain consciousness and hearing as they do occasionally during the third (surgical) degree of anæsthesia—a consciousness not of imperfect remembrance of events during the commencement of anæsthesia, but details of what transpired after the anæsthesia was complete. Sensation to pain is lost; respiration and pulse are full and rapid; the face is swollen and red, especially in plethoric patients; the eyeballs are usually immovable or turned upward, the pupils are dilated, and a roseolous rash occasionally appears; inarticulate sounds often occur; tonic and clonic spasms of the muscles are frequently developed, particularly of the lower jaw, abdomen, and extremities. Whether one or the other of these sets of symptoms occurs often depends upon the posture of the patient. If supine, the tonic spasm is most frequent. Positions in which the limbs are dependent, as in the lithotomy posture, with thighs and legs flexed, frequently develop a clonic spasm of the foot or leg. The reflexes are gradually abolished.

During the third degree of narcosis, respiration is full, rapid, rhythmical, and often snoring; pulse tense, full, rapid—though slower than at the commencement, it is more rapid than normal; pupil usually contracted, sometimes moderately dilated; the reflexes are abolished. Muscular relaxation is complete. Muscular rigidity, particularly of the abdominal muscles, often persists after narcosis is complete. It is then necessary to push the anæsthetic to the production of stertor. At this time the respirations and heart actions are greatly increased, the face and mucous membranes cyanosed, and blood black. It must be said, however, that this degree of narcosis should not be persisted in for any length of time. The anæsthetic should be removed, and the patient allowed to breathe fresh air until stertor ceases. The abdominal muscles, once relaxed, will remain so, unless the patient is permitted to return to a lesser depth of anæsthesia.

Patients vary as to the quantity of the anæsthetic and time consumed in inducing anæsthesia. This depends upon the method of anæsthetization and the type of patient. In general, it may be said males require more of an anæsthetic than females; muscular and stout subjects more than thin; plethoric more than anæmic; nervous more than sanguine; those poor in intellectual development more than the highly developed; the healthy more than those suffering from prolonged illness; the non-septic more than the septic, though it occasionally occurs that some septic individuals require a surprisingly large quantity of ether; those addicted to the use of drugs, as alcohol, morphine, etc., more than those not so addicted.

During the entire narcosis the administrator should give his undivided attention to the patient, noting the condition of the reflexes, respiration, pulse, pupil, eyelids, and color of the skin and mucous membranes.

As anæsthesia is induced, the various reflexes are gradually abolished; they usually, though not always, disappear in a regular order. No single reflex should be depended upon as a test of anæsthesia, as in some subjects they are early abolished and the patient only partly anæsthetized.

The Ciliary Reflex.—This is tested by gently brushing over the ciliary border of the eyelid with the tip of the finger. A contraction of the orbicularis palpebrarum (closing of the lid) results. As anæsthesia advances, this resistance is less marked, until it entirely disappears.

The Corneal and Conjunctival Reflexes.—These are really the same, only differing as to whether the conjunctiva is touched over the cornea or sclerotic. It is never necessary to touch the cornea, as the delicate conjunctiva at this place is very easily injured. To test the conjunctival reflex the upper lid should be raised and touched gently with the tip of the finger upon its lower border. Or it may be touched over the sclerotic. All these devices result in a closure of the eyelid if anæsthesia is not advanced. Occasionally, the conjunctiva retains its sensitiveness after anæsthesia is far advanced; again, in some subjects, particularly children, the reflexes are often early abolished. This should be remembered to avoid a too early commencement of the operation.

The Deglutition Reflex.—As a result of the anæsthetic vapor, increased salivation occurs, and the saliva, if in the back of the pharynx, is swallowed. These swallowing movements are easily seen in the neck by watching the rise and fall of the larynx. When anæsthesia is complete, the larynx is immovable, and mucus will enter the larynx or flow out of the mouth. If the patient's head is turned to the side, the larger part will flow into the œsophagus.

The Pharyngeal and Laryngeal Reflexes.—As a result of the anæsthetic vapor upon the delicate mucous membrane of the larynx and pharynx there is produced coughing. This also occurs if foreign bodies enter the larynx while the reflexes are present. Anæsthesia is complete after their abolition. Care is necessary that foreign material does not enter the larynx, trachea, etc. This is particularly important in operations about the mouth, etc., from which foreign-body pneumonia is often developed and improperly attributed to the anæsthetic.

The Vomiting Reflex.—This is shown generally after the patient is anæsthetized and allowed to return to the lighter stages of anæsthesia. Expiratory effort usually precedes it, and it is particularly distressing to the operator during delicate manipulations.

The *anal reflex,* of value in rectal operations, depends upon the tone of the sphincter ani. It is one of the last to be abolished, and usually requires profound anæsthesia. When absent, no resistance is offered to the finger or instrument upon entering the rectum; when present, the muscle is in a state of contraction the instant an irritant is applied, and the patient will endeavor to move the whole body away from the source of the irritation.

The *vaginal reflex* is similar, but the sphincter vaginæ is involved. When manipulations are made before anæsthesia is complete, there will result a contraction of the sphincter vaginæ and the patient will attempt to move the body or extend the legs.

The Uterine Reflex.—This is one of the very last to be abolished. When the cervix is dilated there results an extension of the leg upon the thigh; while developed in Sims's position, it is more prominent when the patient is supine, with thighs and legs flexed.

The Pulse.—My practice is to keep a finger on the pulse throughout the narcosis. The pulse may be felt on any convenient artery, my own preference being the temporal. The possibility of anomalous conditions should always be kept in mind. I have seen patients in whom no pulse in the wrists was perceptible, yet they had an efficient one at the temporal. The pulse is accelerated during the beginning of the narcosis; as anæsthesia becomes deepest it becomes full, tense, and slightly slower; when anæsthesia is complete, the pulse is always more rapid than normal. Pulse variations occur, independent of the anæsthetic, the causes of which are vomiting, hæmorrhage, sudden change of posture, manipulations of the intestines, dilatation of the sphincter, manipulations in Douglas's *cul-de-sac*, dissections of large nerve trunks, removal of any obstruction to respiration, removal of abdominal tumors and abdominal distention, ligation of large arteries, etc. It may be said that these conditions may also influence the respiration, and should be kept in mind.

The Pupil.—At the commencement of anæsthesia the pupil dilates; when anæsthesia progresses, it contracts; when anæsthesia is complete, it is markedly contracted or moderately dilated. During very profound anæsthesia it gradually dilates. Its sudden dilatation may indicate dangerous or incomplete anæsthesia. The pupil, while a convenient and usually satisfactory guide as to anæsthesia, can not always be depended upon. I have seen it markedly dilated throughout perfect anæsthesia, and, *vice versa,* contracted pupils with very profound narcosis. It should be responsive to light, suddenly admitted, though cases occur where, in order to deepen the anæsthetic sufficiently, the pupil reflex is abolished and the iris hardly perceptible; associated with it are, however, a good color, pulse, and respiration. This has been observed so often by me that I consider the pupil a good but by no means an infallible guide of anæsthesia, and always consider other symptoms in conjunction with it.

To differentiate incomplete and profound anæsthesia, where the pupil is dilated, a fresh supply of ether should be poured into the inhaler, which is applied to the patient's face. If anæsthesia is incomplete, there will result expiratory efforts, swallowing movements, inhibition of inspiration, tonic contraction of the muscles of the lower jaw, grating of the teeth, and inarticulate sounds, all of which indicate incomplete anæsthesia. Absence of these symptoms indicates profound narcosis, and, if associated with a bad color, irregular respiration, and pulse, the anæsthetic should be removed and not again applied until these functions are properly performed. The eyelids, during complete anæsthesia, are usually closed and relaxed, and there is no movement at closure when an effort is made to open them. The color of the skin and mucous membranes, as observed about the face, lips, and ears during anæsthesia, should at least be the same as at the beginning of narcosis; cyanosis or lividity indicates imperfect aeration of the blood. Many cases anæsthetized with gas and ether develop throughout the etherization a very ruddy color of the face, which is much better during the anæsthesia than before or subsequent to it. An undue darkness of the blood is often observed by the operator before any change in the color of the skin and lips takes place.

The respiration is best observed by not only watching the movements of the thorax, for little air may be entering the lungs, but by feeling the exhaled air against the administrator's ear or dorsal surface of the fingers; when etherizing, the thin rubber bag into which the patient breathes serves as an excellent respiratory index.

At the commencement of anæsthesia, the respiration is markedly accelerated as the anæsthetic state is approached; the breathing becomes fuller and slower, until it assumes the deep rhythmical character, though always more rapid than the normal. It is this deep and regular character of the respiration which is one of the very best indications of complete narcosis. During prolonged narcosis, the respiration often becomes more shallow and rapid; so long as the color and pulse are good and the respiration is regular, even if of double the normal rate, the patient is doing well. It is the shallow, irregular, gasping, and often high-pitched respiration that should call for the removal of the anæsthetic.

(*To be concluded.*)

The Buffalo Academy of Medicine.—At the last meeting of the Section in Obstetrics, on Tuesday evening, the 24th inst., Dr. John B. Deaver, of Philadelphia, read a paper on the Limitations of Gynæcology.

A REPLY TO AN ATTEMPTED DEFENSE OF ANTITOXINE.

By J. EDWARD HERMAN, M. D.,
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My attention has been called to a paper in a recent number of the *International Medical Magazine* in which Dr. A. Robin, pathologist and bacteriologist to the Delaware State Board of Health, criticises at great length an article contributed by me to the *Medical Record* on The Failure of Antitoxine in the Treatment of Diphtheria. He affects great surprise that my paper should have appeared in a journal of such high standing. No doubt he will suffer from further astonishment to learn that the paper was reprinted word for word without my knowledge in the June (1899) number of the *Dominion Medical Monthly* of Canada as a specially selected article. That my paper was read before a "society in one of our principal and most enlightened cities" causes my Delaware friend still greater amazement. "Such a paper, under such circumstances," he concludes, "can not be allowed to pass unnoticed." If the many kind, commendatory letters from physicians in the United States, Canada, and Europe are a criterion, the writer can assure the doctor that the paper has not been neglected.

Dr. Robin starts out threatening to produce convincing arguments in favor of antitoxine, which, of course, he entirely fails to do, as that is impossible.

He opens with this insinuating remark: "Statistics, when they are garbled to disprove or prove preconceived ideas, are of no value." Yet in all the thirteen pages occupied by his article he can not indicate one instance in which my facts and figures depart one iota from the truth.

Abandoning his attempt to controvert the statistical proof of the clinical failure of antitoxine, he says: "In view of the fact that figures can so easily be made to lie, and statistics can unfortunately be so arranged as to disprove the value of antitoxine, we must now turn to the more precise and scientific data obtained from laboratory experiments."

His statement, "The clinical experience with antitoxine considered by itself might leave room for doubts as to its value," is certainly remarkable enough to merit reproduction.

Then he does a most unaccountable thing. After denying the fact stated by me that with the advent of the bacteriological diagnosis of diphtheria, which was introduced about the time antitoxine came into use, a much larger number of patients was brought to the hospitals than before the time when the presence of the Klebs-Loeffler bacillus was considered an indication that diphtheria existed, he prints a table which proves the very point which he denies. My contention is made good by the following figures taken from his own table:

Admissions to all the Hospitals of Berlin.

Before Antitoxine Times.		After Antitoxine Times.	
Year.	Admissions.	Year.	Admissions.
1886	1,738	1894	2,890
1887	1,636	1895	3,061
1888	1,446	1896	2,138
1889	1,623	1897	1,947
Total	6,443	Total	10,036

The statistics upon which the above tabulation is based are official. The figures are not garbled and they do not lie. And they tell us that while in the four non-antitoxine years 6,443 patients entered the Berlin hospitals, in the first four antitoxine years the number at once jumped up to 10,036. The same fact can be made clear in another way. Thus, the number of admissions to the Berlin Charité Hospital in 1895 was 306. In former years, before antitoxine was used, only about a hundred and sixty cases were entered each year. In face of the great increase in the number of cases treated in this hospital in 1895 it is well to know that in this year, with an increase in population of over a quarter of a million there were 862 fewer cases of diphtheria reported in the whole city of Berlin than in the year 1886, when serum treatment had not yet been instituted.

In Baginsky's hospital, the Kaiser and Kaiserin Children's, the number of diphtheria cases admitted in the first quarter of 1894 amounted to 86. In this quarter there was only sufficient antitoxine on hand to treat a few isolated cases during the last weeks. But in the fourth quarter, when almost every case received antitoxine, the number of cases treated was 239!

Since antitoxine has been in use the diphtheria epidemic has been waning, and a larger proportion of mild cases has been received by the hospitals.

Rose, a highly esteemed physician in charge of a large Berlin diphtheria hospital, expresses himself in this wise: "Since 1893 there has been a decline in the number and severity of cases. The proclaimed virtues of antitoxine cause relief to be sought in the early days of the disease. Before, the hospital was often only a dying chamber. Now it is full, and often the entire troop of children sit up in their beds and do not give the impression of being sick. To judge by the admissions to this hospital, the epidemic of 1896 was unusually light."

Sonnenberg conducts another Berlin diphtheria hospital. From July 1 to December 1, 1896, during which time his institution could not obtain antitoxine, "the result was as good as when serum was used." The slightly lower mortality under serum treatment was due to the fact that more tracheotomy and septic cases were included in the period during which it was not possible to get antitoxine. In this connection reference may be made to the experience in the Municipal Hospital of Philadelphia in 1896, where the diphtheria death-rate was 22.2 per cent. in August and 41.6 per cent in September—antitoxine being used in both months. Had there occurred an interruption in the supply of antitoxine in September, when the mortality was nearly twice as high as it was in the preceding month, this would have been cited as an illustration of the therapeutic power of antitoxine. Speaking of his hospital, Sonnenberg said: "The result in the pause was so good without serum that it must be concluded that the mildness of the epidemic must be admitted." Among the patients treated in the interval were eight children from one to two years of age, of whom five recovered after tracheotomy without the use of antitoxine serum. On the other hand, the mortality for the month of December, 1899, of antitoxine-treated intubation cases in the New York Willard Parker Hospital was eighty-five per cent.

The doctor presents a table of statistics from the St. Ladislaus Hospital, of Budapest, which corroborates what it has been my endeavor to make clear in the above paragraphs. The table shows that in the antitoxine year 1895 just double the number of patients were admitted as in the year 1893, when serum treatment was not yet used. Of course, in 1895, with many cases of bacterial laboratory diphtheria included, we must expect to have a lower mortality rate.

Rauchfuss, of Russia, is quoted as saying: "The mortality has been reduced fully one half." The truth is, the mortality in St. Petersburg has been fearful, as shown in this table, notwithstanding "the general employment of antitoxine":

Diphtheria Mortality in St. Petersburg.

Year.	Deaths.
1892	333
1893	378
1896	1,118
1897	1,905

To show "what true (?) scientists think of antitoxine," Robin quotes the words of Behring to the effect that "of each hundred patients who receive the ordinary dose of antitoxine during the first forty-eight hours, not even five would die of diphtheria." Indeed! Then my critic will again have to impugn my figures and suggest that they lie and are garbled, for they tell a different story:

Results of Antitoxine Treatment.

	First day mortality	Second day mortality
New York City Health Department	6.7 per cent.	11.0 per cent.
American Pædiatric Report	4.9 "	7.4 "
London Asylums' Hospitals, 1896.	5.2 "	15.0 "

Before producing his trump card, "scientific evidence," Dr. Robin takes issue with my statement that sanitary improvement has been a great factor in stamping out diphtheria. He knows better, and, to make good his argument, delivers himself of the following wonderful sociological observation: "Any one practising in a large city knows only too well that our present century can not boast of any extraordinary amelioration of the sanitary conditions of our working class." While the reader who does not reside in the country is recovering his equanimity, may it be suggested that perhaps Washington Irving was mistaken after all, and Rip Van Winkle never really awoke and is still asleep in Delaware?

If my statement that the diagnostic value of the Klebs-Loeffler bacillus has not been indisputably established really astonishes the doctor as much as he pretends, then he must have confined his reading to only one side of the question. He accuses me of "wiping out by a single stroke of the pen what Loeffler and many others have succeeded in demonstrating." Nonsense! Dubbing me a "modern Don Quixote" and a "doubting Thomas" may be considered a pardonable pleasantry, but hardly an argument. In my last article in the *Medical Record,* January 20, 1900, will be found sufficient evidence that the Klebs-Loeffler bacillus bears no ætiological relation to diphtheria to convince any man open to conviction. The following additional facts may prove of interest in this connection:

It is stated in the *Deutsche medicinische Wochenschrift,* 1895, No. 22, that in Aaser's hospital twenty per cent. of the children showed the presence of the Klebs-Loeffler bacillus. The remainder were transferred to another ward, where antitoxine was given for the purpose of immunization. Three of the latter were attacked with diphtheria, while those having the Klebs-Loeffler bacilli in their throats suffered no ill effects from their presence.

Huebner was not able to find the Klebs-Loeffler bacillus once in an examination of 113 cases of clinical diphtheria during life and only once after death. Delephine carefully examined 14 cases of typical diphtheria, and was not able to find the Klebs-Loeffler bacillus. Von Ranke found a mixed infection in ninety-three per cent. of 163 cases of diphtheria. Kanthack states that streptococci are rarely absent, whether the case is mild or serious, if a series of cultures is made in every case. Commenting on the report made by Washbourn and Todd of an epidemic of rhinitis in which the Klebs-Loeffler bacillus was found in every case, but with no indication of fever, glandular enlargement, or other indication of disease, Kanthack, who is professor of pathology in Cambridge University, says: "This is a further contribution to the view which is gradually gaining ground, that the diphtheria bacillus is found in many lesions which are not diphtheria." Bernheim found streptococci in every case and mixed infection was constant. Professor Baumgarten, of Tübingen, says: "My long researches have brought out the fact that streptococci are constantly present in diphtheria membrane, and that it is possible to prove their presence in every case of genuine diphtheria which is examined judiciously and carefully." Fraenkel insists that streptococci are the cause, and that the Klebs-Loeffler bacillus alone never produces diphtheria.

As the law has been laid down by Behring that each antitoxine is curative for but one specific infection and that the diphtheritic antitoxine can neutralize only the toxine of the Klebs-Loeffler bacillus and that of no other germ, the logical deduction follows that what is known now as diphtheria antitoxine can not cure diphtheria.

Dr. Robin confuses the toxine and antitoxine methods of treatment when he says: "The antitetanic and antistreptococcic serums, small-pox and anthrax vaccination, etc.," are all links in the chain of serum therapy. There is evidence indicating that immunity may be derived from toxine injection, but no proof exists of the success of antitoxine treatment. Experimental observations on animals in the laboratory have no application to the human subject suffering from actual diphtheria. This was again recently demonstrated by the New York Board of Health in its work on yellow fever. Much money and time were spent in performing what were considered satisfactory and conclusive experiments on animals. Since then opportunity has been afforded to try the remedy on the human subject, and the result has been what might have been expected—failure.

To explain the presence of the Klebs-Loeffler bacilli in normal throats, Robin, like others who strive to make facts fit their theories conveniently, supposes that in these cases the individual is immune. Immunity is a handy word which serves to cover medical ignorance. Or, he says, in these cases it may be the pseudo-bacillus: "The two are almost identical in morphological and even cultural characteristics, and it is only after a great deal of care that they can be differentiated." Just so. And not infrequently, he might have added, the Klebs-Loeffler bacillus possesses no pathogenic power. As Shattuck points out, "Typical forms may possess little pathogenicity (as tested upon guinea-pigs), and occur in cases which clinically present no other features than those of sore throat, unaccompanied even with any marked malaise." The only way to distinguish the virulent form is to make an experimental test on animals. This is not done by our health board, and the only good which the present method serves is to supply an official berth for some industrious but misinformed bacteriologist.

He finds my statement, that back of the formation of the false membrane is that deranged condition of the system permitting the growth of pernicious bacteria, very funny. My contention that the formation of the false membrane may be considered Nature's method of protecting the patient is here repeated to show him that he can not bluff me out of an opinion until he can adduce facts more successfully and display wit suffering less markedly from the last stages of paresis.

The extent of the membrane, according to Morse, is a measure of the degree of leucocytosis. Modern pathology teaches that the increase in the number of leucocytes in this disease is an index of the patient's power of vital resistance, and is an indication that Nature is striving to effect a cure. Dr. Ewing, professor of pathology in the Cornell University Medical College, proved that the administration of antitoxine defeats this conservative process by causing a decrease in the leucocytosis. He observed that pure serum or serum treated with camphor did not cause a decrease in leucocytes as antitoxine did; and also that the more powerful the antitoxine the more marked was the decrease of leucocytes. Professor Ewing concluded: "When ten thousand to fifteen thousand leucocytes per cubic millimetre are suddenly removed from the circulation, and the patient dies within a short period or in a few days, as occurred in at least three of the present cases, one must hesitate before recommending the use of antitoxine after a very grave condition has been established in diphtheria." Professor Winters, one of the visiting physicians to the Willard Parker Hospital, in which the above-mentioned work was done, in answer to a recent letter of inquiry wrote to the writer: "So far I have no reason to feel that antitoxine is of any service in diphtheria in the Willard Parker Hospital." Speaking of antitoxine treatment, Professor W. Gilman Thompson was forced to say: "Attractive as is the question of immunity by antitoxine, it yet leaves many facts unexplained." Truly, as Virchow recently said: "The doctrine of antitoxines has not yet emerged from the conflict of opinions."

Dr. Robin says of the first American Pædiatric report: "In only two or three cases a bad effect on the heart was noticed." The truth is that there were thirty-two fatal cases of late paralysis of the heart!

Of the London asylum hospitals he claims: "No bad effects of the serum on the kidneys were manifested." The report for 1896 distinctly admitted: "The increase of complications is most noticeable in albuminuria." The following table, compiled by me from that report, shows that albuminuria appeared as a complication in sixty per cent. of the cases:

London Asylums' Board Hospitals.

Hospitals.	Cases admitted.	Albuminuria cases.	Per cent.
Eastern	475	312	65.6
Northwestern	356	161	45.2
Western	525	217	41.0
Southwestern	330	193	58.5
Southeastern	508	339	67.4
Fountain	575	441	76.6
	2,764	1,663	60.0

The doctor is to be numbered among those who believe "the time is not far distant when the failure to employ antitoxine in diphtheria, even as a prophylactic, will be considered a professional blunder." The attention of these holier-than-thou medical men is called to the following words of Professor Langerhans, of Berlin, whose little son was killed by an immunizing dose of antitoxine: "My boy was poisoned by Behring's serum. As a warning to others I have given public expression to my convictions and have dared by the publication of my loss to protect others from a like fate."

Dr. Billings, of the New York Health Department, has just issued an article to bolster up the lost cause of antitoxine. He has to admit that the diphtheria death-rate in New York city increased last year. He eliminates the moribund cases, and, by estimating to his own satisfaction how much good would have resulted had more well people been given immunizing doses of antitoxine, he arrives at the remarkable conclusion that the result would have been as good in 1899 as it was in the previous year. The death-rate given in his table covers only the boroughs of Manhattan and Bronx. The true death-rate for the entire city of New York for 1899 was probably more than twenty per cent.

The positive statement made by Dr. Robin that the pathological lesions of diphtheria are identical in man and animals departs from fact in the one important particular that it is not true. Paralysis occurs in animals after inoculation with almost any infective agent. If diphtheria bacteria are injected, Vissman pointed out that there follows a slight hydrops of the pericardium, pleura, and peritonæum, which is not characteristic in the human subject. Virchow says the disease produced artificially in animals has nothing to do anatomically with Bretonneau's diphtheria.

Seneca probably had in mind people resembling the fanatics now at large who advocate criminal prosecution of physicians for refusing to use antitoxine, when he wrote: "Many persons might have attained to wisdom had they not assumed that they already possessed it."

It is the earnest hope of the writer that these lines may act as a hammer to drive a few more nails into the coffin of the patented article called antitoxine with which the mercenary Behring is exploiting the medical profession.

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THE RELATION OF HYDROCHLORIC-ACID SECRETION TO INDICANURIA.

By ALLEN A. JONES, M. D.,
ADJUNCT PROFESSOR OF THE PRINCIPLES AND PRACTICE OF MEDICINE, MEDICAL DEPARTMENT, UNIVERSITY OF BUFFALO.

A series of cases has been taken from our records covering a period from March, 1895, to April, 1897, and these cases have been studied in reference to the relation of their hydrochloric-acid secretion and the presence or absence of indican in their urines. In making this study the results of simultaneous examinations of the gastric contents and of the urine have been noted. The cases have been arranged in four groups:

1. Those showing free hydrochloric acid, with no indican in the urine.
2. Those showing free hydrochloric acid, with indican present in the urine.
3. Those showing no free hydrochloric acid, with no indican in the urine.
4. Those showing no free hydrochloric acid, with indican present in the urine.

In the first group eighty-five cases have been included, and in these the amount of free hydrochloric acid ranged from 0.03 per cent. to 0.25 per cent., the average being from 0.08 to 0.10 per cent. Some of these were instances of gastric carcinoma without indicanuria. In looking over subsequent examinations of the urine in a number of these cases indican was found present in a few.

In the second group thirty-six cases are tabulated. Fourteen of these showed considerable quantities of indican, and, of the fourteen, five showed an excessive amount. The percentage of free hydrochloric acid in these cases ranged from 0.01 to 0.21; three having 0.18 per cent., two presenting 0.14 per cent., one showing 0.12 per cent., two having 0.10 per cent., one showing 0.09 per cent., and two presenting 0.07 per cent. Fifteen of this group of patients passed urine containing only a trace of indican, and in the remainder, with the exception of those above mentioned as showing strong indican reaction, there was a small amount. It was also observed that indican was inconstant in this group, coming and going from day to day.

In the third group twenty-five cases are placed. One of these showed the presence of free hydrochloric acid a few days after the first examination, but no indican appeared in the urine at any time during the treatment of the patient. In two cases of the group achylia gastrica existed, and in one no indicanuria was at any time observed, while in the other it was present upon two subsequent examinations, though not found when the first analysis was made.

The fourth group contained sixteen cases, among which seven had only a trace of indican, six showed a moderate amount, and three showed excessive quantities. One of this group was a case of gastric carcinoma of the medullary type with a good deal of bleeding and shedding of portions of the new growth, and in this case only moderate indicanuria was present. In some members of the group indican was an inconstant manifestation, and free hydrochloric acid was also subsequently found in a proportion of the cases.

This incomplete analysis of a hundred and sixty-two cases demonstrates that indican bears no constant relationship to the secretion of hydrochloric acid in the stomach. Strong indican reactions commonly are found in the urine of patients with a copious supply of free hydrochloric acid, and many times indican is absent from the urine of those having not only an absence of free hydrochloric acid in the stomach, but of combined acid also. My observations have been such that I am not at all warranted in concluding that there is an absence of free hydrochloric acid in the stomach when indican is found in the urine; and I can not argue that indican will be discovered in the urine of a case in whose gastric contents there is a diminution or an absence of free hydrochloric acid. With this statement it will be of some interest, perhaps, to consider the question of indicanuria from a broader standpoint, postponing for a few moments special consideration of indican in relation to separate gastric diseases.

The subject of indican in the urine and its relation to the acidity of the gastric juice was discussed in a contribution to the *American Journal of the Medical Sciences*, July and August numbers, 1895, by Charles E. Simon, of Baltimore. In the articles referred to is given the history of the discovery of indican in the urine by Prout in 1840, and also attention is called to early observations of blue urine and blue sediments in the urine as long ago as the thirteenth century. In 1767, and at other dates down to the time of Prout's discovery, blue discolorations of the urine were recorded, but in 1840 this blue sediment was first shown to be indigo. In 1846 hydrochloric acid was used for the detection of indigo blue, and in Jaffe's test, which is now commonly employed, this acid is the reagent. The brownish and the bluish coloring matter occasionally observed in the urine, prior to the year 1857, was called variously Prussian blue, urocyanine, indigo-cyanourine, uroglaucine, and by Virchow *Harnblau*, and it was not until this last date that Schunck named it indican.

Indican was observed in the urine only in cases of disease until Carter, in 1858 and 1859, succeeded in showing it to be present in the urine of healthy persons, a conclusion in which he was sustained by other investigators. As indican sometimes occurs in the urine then as a sediment, it is of great interest that it is found in traces in some urinary calculi, and in rare instances calculi are chiefly composed of indican. Simon succeeded in finding only two such cases recorded.

Indican was found in the urine in a great variety of conditions, among which may be mentioned pyelitis, cystitis, cholera, starvation, typhoid fever, variola, scarlatina, nephritis, hepatic carcinoma with round ulcer of the stomach, and death from gastro-intestinal hæmorrhage.

The nature, origin, and site of the formation of indican have excited much research and discussion. It now seems settled that it is a product of putrefaction of albuminous matter caused by bacterial action. The urine of newborn infants, who have not been fed, does not contain indican because no putrefactive organisms are present in the intestinal canal. Some observers have contended that indican was formed by the action of unorganized ferments upon nitrogenous materials, but the weight of evidence is strongly against such a view, and we are now justified in assuming that indican is formed only in the intestine through putrefaction, and is produced when pus formation, gangrene, necrosis, or ulceration takes place. In all places and at all times it will be seen that there are present putrefactive micro-organisms causing decomposition of albuminous elements in the formation of indican.

The question as to the mother substance of indican and as to its chemical composition has been cleared up by the researches of Baumann, Baeyer, Jaffe, Radziewsky, Nencki, Masson, and others. Briefly stated, indol is the mother substance, and it is present in the intestine always, excepting, of course, the sterile intestine of the newborn.

Herter and Smith,* in 1895, called attention to the fact that the ethereal sulphates of the urine are derived from putrefaction of albuminous substances in the intestines. The ethereal or aromatic sulphates are combinations of acid sulphate of potassium with aromatic substances, among which is indol, in combination making indoxyl potassium sulphate or indican. Attention is called to the observations made by Baumann upon a patient who passed the intestinal contents through a fistula in the upper portion of the small intestine. During the period in which the intestinal contents were passed through the fistula, indol, phenol, and the ethereal sulphates were present in only very small quantities in the urine; but when the fistula was closed, there was an immediate and decided rise in the amount of ethereal sulphates. It appears from these observations that the changes producing these aromatic substances took place largely in the small intestine. Ewald has made a similar observation upon a case with intestinal fistula, in 1878, and in 1888 Kast and Baas confirmed the findings of Baumann and Ewald by observations made upon a case of malignant stricture of the small intestine, in which obstruction lasted twenty-three days, and was accompanied by an excessive amount of ethereal sulphates in the urine. As soon as operative procedure relieved the intestinal stasis, the excretion of aromatic sulphates was greatly diminished. Herter and Smith consider indoxyl potassium sulphate as the most important of the ethereal sulphates, and explain its formation by saying it is derived from an aromatic volatile substance, indol, having the formula C_8H_7N, and which by oxidation forms indoxyl C_8H_7NO, which appears in the urine as indoxyl sulphate of potassium, $C_8H_6NO SO_3K$, which crystallizes in the pure state and, undergoing oxidation, gives rise to the formation of indigo blue. It must be remembered that indigo blue is not indoxyl potassium sulphate, but its presence indicates the preexistence of a like substance in the urine.

F. Leonard Vaux, of Ottawa, Canada, in his contribution entitled The Indigo Group in Relation to Internal Medicine,† discusses the "relation of indol to free hydrochloric acid in the gastric secretion," and cites the observations of Bernacki in 1891 regarding the production of indol in chronic nephritis, in many cases of which the absence of free hydrochloric acid was noted, and a possible connection between the state of the gastric secretion and the indicanuria was suggested. Vaux then cites the work of Simon that led this observer to the conclusion that the amount of indican found in the urine may be taken as an index as to the presence or absence of free hydrochloric acid in the stomach. Vaux does not concur with such conclusions, and calls attention to Welch's statements in reference to the antiseptic properties of the gastric juice in which the small percentage of free hydrochloric acidity in the stomach is considered as insufficient to prevent the activity of putrefactive organisms in the human stomach. Wendt came to the following conclusions, after observations upon the patient from whom Schlatter completely removed the stomach.

Conclusion No. 4.—"The chemical functions of the human stomach may be completely and satisfactorily performed by the other divisions of the alimentary canal."

Conclusion No. 6.—"The free acid of normal gastric secretion has no power to arrest putrefactive changes in the intestinal tract. Its antiseptic and bactericide properties have been overestimated."

The clinical aspect of this subject immediately leads to a question of the causes and prevention of excessive putrefaction in the intestine. What are Nature's means of preventing conditions that give rise to the overabundance of intestinal toxines? Simon asks, "What is it that keeps the degree of intestinal putrefaction in what may be considered as the physiological limits?" and he says, in answer, "There appears to be little doubt at the present time that the free hydrochloric acid of the gastric juice is the active agent in this direction."

As has already been seen, our observations are not in entire accord with this view, and the prevention of indol formation in the intestine must be accomplished by other means than simply the free hydrochloric acid in the stomach. It would appear that so long as sufficient hydrochloric acid is secreted by the stomach to satisfy the nitrogenous elements and allow them to pass through the various steps of cleavage in pepsin-hydrochloric-acid digestion, excessive putrefaction is not likely to arise, despite the fact that sufficient hydrochloric acid is not secreted in a free state. In this case it must be remembered that the total acidity of the gastric contents is normal, or almost normal. When the total acidity of the stomach is markedly reduced, and an approach is made to an alkaline condition, putrefaction of albuminoids more readily occurs, and is especially favored in an alkaline intestinal medium.

Attention should be called to a few conditions with which excessive indicanuria has been found. One of these is ileus, which is practically always accompanied by a large amount of indican in the urine. It is here notable that obstruction of the large intestine is seldom associated with an abnormal amount of indican in the urine, and that constipation depending upon atony of the colon or rectum is rarely the sole cause of indicanuria. Stricture of the small intestine, even though as high as the duodenum, is usually signalized by the presence of a large quantity of indican in the urine. Another affection that is often associated with indican is gastric ulcer, where there is present usually an abundance of free hydrochloric acid in the stomach. In a recent case of this affection with 0.09 to 0.14 per cent. of free hydrochloric acid we found a large amount of indican in the urine after all acute manifestations of the disease had subsided.

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* *New York Medical Journal*, June 22 and 29, 1895.

† *Philadelphia Monthly Medical Journal*, May, 1899.

Let us consider the various affections that give rise to diminished secretion of free hydrochloric acid. Simon, in reviewing the literature of the subject, cites the cases of carcinoma reported by Hennige, Senator, Haeberlein, De Vries, Ortweiler, Brieger, and Wasbutzki. In all indican was present in the urine in large amounts, with the important exception, however, that eleven of Haeberlein's fifty-one cases showed no indicanuria, and twenty-one of the series only a moderate increase. Simon's four cases all showed marked augmentation of indican. I have found indican present in carcinoma with and without the presence of free hydrochloric acid and with and without marked stagnation, but in a number of cases indican has been absent from cases of carcinoma with the conditions just mentioned, showing that it is inconstant, and, as suggested by Vaux, depends perhaps somewhat upon proteid degeneration, perhaps upon ulceration of the new growth. Nervous depression of hydrochloric-acid secretion accounts for many cases of hypochlorhydria, and in these indicanuria may or may not be found. In no class of cases in my experience is the occurrence of indicanuria with depressed hydrochloric-acid secretion more inconstant or inconclusive than in the class of nervous depression of secretion. My observations upon this point have led me to consider the presence of a small amount of indican in the urine to be quite misleading and as not pointing to an absence of free hydrochloric acid. The indican in these cases is flitting, and in this respect corresponds to the varying state of gastric, and possibly of intestinal, secretion.

Indicanuria, if marked or constant, has been associated more particularly with inflammatory states of the intestine, and the indicanuria is sometimes marked in cases that have gone on to glandular atrophy both in the stomach and intestine. In achylia gastrica there is not only an absence of free hydrochloric acid, but combined acid is practically absent, and in some cases no acid whatever is secreted. Pepsin is also very greatly diminished, and for all practical purposes is absent; the same is true of rennet ferment and zymogen. Thus we have a state of the stomach in which no gastric digestion of albuminoids takes place. The pathology of the affection usually consists of atrophy of the glands of the stomach, the parenchymatous cells being replaced either by mucous cells or by new connective tissue. In some cases, however, the affection appears to be largely a secretory neurosis, as Einhorn has found healthy glands in sections of small bits of gastric mucosa obtained from wash water during lavage. Sometime, during the clinical observation of these cases, I have found pronounced indicanuria, and especially in those cases to which I have elsewhere referred,* with chronic diarrhœa or looseness of the bowels alternating with constipation. During the periods of diarrhœa indicanuria is most marked. In the larger number of these cases intestinal digestion fails very soon to compensate for a lack of gastric digestion. Clinical evidences of chronic enteritis with probable atrophy of the intestinal glands are shortly forthcoming, and putrefactive changes occur. But even in this disease indican is not infrequently absent from the urine, as we have already seen.

In considering the relation of free hydrochloric acid to intestinal putrefaction, it is needful to take into account other factors that antagonize putrefactive or fermentative intestinal processes. I have before mentioned the degree of combined chlorides and gastric digestion of albuminoids as an important consideration, and observations have confirmed the belief that even in the absence of free hydrochloric acid, provided the nitrogenous constituents of the food are satisfied in the stomach by combination with hydrochloric acid, indicanuria may not infrequently be absent. Then there is the probable antiseptic action exerted by the bile as well as that of the pancreatic secretion that must be taken into account. Added to these influences there is perhaps some antiseptic effect exerted by the succus entericus, and it is not improbable that the epithelia lining the intestine may have some inhibiting power over putrefaction. In other words, if the albuminous constituents of the food undergo digestion in the intestine, they do not putrefy, and in many cases indicanuria must be looked upon as an index to the adequacy of intestinal digestion without particular regard to the state of the stomach.

436 Franklin Street.

ETHYLIC BROMIDE (C_2H_5Br) ANÆSTHESIA PRELIMINARILY TO THE USE OF SULPHURIC ETHER.

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Following the experiments of Rabiteau in 1876 with ethylic bromide, and its subsequent use by Turnbull, of Philadelphia, I attempted to employ this anæsthetic in an operation for cleft palate in a young adult in the fall of 1878. I was deterred from proceeding with it in the continuance of the anæsthetic effect by what, at that time, seemed to me to be alarming symptoms, and sulphuric ether was substituted, at first with the view of arresting what appeared to be epileptiform convulsions (no chloroform being at hand); the operation was then proceeded with under ether anæsthesia, the epileptiform movements having in the meanwhile disappeared.

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* *Journal of the American Medical Association*, July 30, 1898.

A few weeks ago, while watching the behavior of a patient undergoing temporary anæsthetization by means of nitrous oxide preliminarily to surgical anæsthesia by sulphuric ether, I was reminded of my first and only experience with ethylic bromide, and, struck by the resemblance which the patient before me bore to the picture as I recalled it of what I considered the alarming epileptiform convulsions present in that case, I determined as opportunity offered to reinvestigate this anæsthetic agent with the view of utilizing it to overcome the struggling and other unpleasant features of the first application of ordinary anæsthetic ether.

Providing myself with a sealed uranium glass tube containing an ounce of ethylic bromide put up by Merck a few years ago when an attempt was made to revive in Germany the use of this anæsthetic agent in short operations, and a supply of which I had procured at that time, I awaited the presentation of a proper case for the trial. This came in the shape of a vigorous Italian, with a large lymphoma of the neck, who gave an alcoholic history, and who, from all appearances, was the sort of subject likely to give employment to three or four orderlies during the first few minutes of the administration of ordinary anæsthetic ether. He was admitted to the Methodist Episcopal Hospital in Brooklyn on February 16, 1900. The following is the record of the anæsthetization by the anæsthetist, Paul M. Pilcher:

February 17, 1900.—P. F. M., aged thirty-two. Operation for removal of large lymphoma of the neck. Marked alcoholic history. Good general physical condition. Slight cardiac murmur at the apex; other chest sounds normal.

Anæsthesia.—Patient was very violent just as anæsthetic was to be administered. He sat upright on the wheel stretcher, and it took four men to hold him and prevent him from springing from the stretcher. About six drachms of ethylic bromide were poured into Fowler's partially closed cone, and the latter was placed over the nose and mouth with the patient still sitting upright. His struggles ceased after the first breath of inhalation, he was gently lowered to the horizontal position, and in twenty seconds from the application of the cone he was completely anæsthetized, with stertorous breathing, cyanotic surface, dilated pupils, complete relaxation, and all reflexes abolished with the exception of pupillary reflex to light. The pulse was not appreciably affected with the exception of a slightly increased tension. A similar cone was then quickly applied containing about two drachms of ordinary anæsthetic ether. The patient was not affected by the change and was removed at once to the operating room and reported ready for operation in less than three minutes after the first anæsthetic was commenced.

On incising the skin it was noticed that the blood was rather dark and clotted easily. Up to this time the pupil had contracted slightly, but was still considerably dilated. Pulse of good quality, slight tension, and 80 beats to the minute. Respiration less stertorous. Face slightly cyanotic. The operation was proceeded with. After fifteen minutes from the first application of the cone the blood was still so dark and the respirations so superficial that the ether was withdrawn. Up to this time six drachms of ethyl bromide and five ounces of sulphuric ether had been administered. The behavior of the pupil was erratic, being at times dilated, and again partially contracted. The pulse remained practically normal with the exception of the slight increase of tension. There was the usual secretion of mucus. The sulphuric ether was withheld for seventeen minutes, during which time the pulse lost its increased tension and became normal; the cyanosis disappeared, the breathing became deep and regular, and the blood became of good color. The pupils gradually contracted, and the corneal reflex was found again in about fifteen minutes. In fact, the picture was one of a patient becoming profoundly narcotized and gradually returning to the surgical degree of anæsthesia; the pulse, however, not sharing in the transition, with the exception of the change in tension.

At the end of seventeen minutes from the time of the withdrawal of the cone, the operation proceeding in the meanwhile, a sudden change took place. The patient began violent retching efforts, and behaved in a manner common to patients coming out of ether. The cone was reapplied and surgical anæsthesia reestablished in about a minute. The operation proceeded and was concluded forty-five minutes from that time, or in an hour and seventeen minutes from the commencement of the administration of the anæsthetic. During the last forty-five minutes of the operation, or the time following the apparent coming out of the influence of the ethylic bromide, four ounces of ordinary anæsthetic ether were used to maintain the surgical degree of anæsthesia. During that time, however, the blood was of a somewhat darker hue than in ordinary anæsthesia, although much less so than when the influence of the ethylic bromide was evidently predominant. The pupil was partially dilated, but the pulse and respiration were practically normal.

After the operation the recovery of consciousness was more rapid than usual, and no vomiting occurred. The patient did not even complain of nausea, and was not restless. The conjunctivæ of both eyes were slightly reddened, and the next day increased lacrymation was present. No other unpleasant sequelæ were observed. The conjunctival irritation subsided without treatment, the patient's wound healed uninterruptedly and promptly, and he left the hospital in a week.

Anæsthetic agents employed: Ethylic bromide, six drachms; sulphuric ether, nine ounces.

No stimulation during anæsthesia.

Urine before anæsthesia: Specific gravity, 1.032; acid; normal constituents.

Urine after operation: Specific gravity, 1.032; acid; amorphous urates.

From the experience gained in this case I am encouraged to make further trial of ethylic bromide to produce a comfortable preliminary condition of anæsthesia when surgical anæsthesia is to be maintained with sulphuric ether. It must be apparent, however, that, for the simple purposes of preliminary or precedent anæsthesia, an unnecessarily large amount of the ethylic bromide was given in this case, so much so that in all probability the operation might have been proceeded with under its influence alone. My present plan, based upon an exceedingly favorable experience in upward of one hundred cases, this including, with but three exceptions, all the cases since operated upon in my hospital services, is to pour but one or two drachms upon the distributor (a cushion of upholsterer's curled hair) of my new pattern of partially closed inhaler,* and with the supervention of a sufficient anæsthesia from the ethylic bromide, another drachm or two being supplied as a second dose, if necessary (a rare contingency), ether is given slowly by the drop method through the slit in the cone. I have no doubt that the ordinary towel and paper cone will answer every purpose, although it probably will not economize the anæsthetic as the pattern above alluded to does.

The procedure is as follows: From one to two drachms of ethylic bromide are placed upon the inhaler, and, in from thirty to forty-five seconds, according to the freedom with which the patient breathes, the administration of the sulphuric ether is begun, without changing the inhaler, and proceeded with as in ordinary ether anæsthetization.

THE DIAGNOSIS OF HYSTERIA.†

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THERE is truth in the maxim that he who knows syphilis and hysteria knows medicine, for syphilis causes lesions in, and hysteria symptoms referable to, every organ. To recognize the lesions of the former and the symptoms of the latter requires complete knowledge of disease. They are the two centres around which all facts in medicine may be grouped. Of syphilis I shall say nothing, and shall speak of hysteria only in an informal way, for time will not permit more than to recall to you some of the difficulties in diagnosis and a few of the traps into which we are liable to fall if we are not wary and thoughtful. The first question is, What do we mean by hysteria? Notwithstanding the long study of great men, the enormous mass of printed matter, and the personal influence of medical teachers, the belief is still widespread, not only among the laity, in whom all medical ignorance is pardonable, but also among physicians, that hysteria is merely mendacity, lubricity, and willful lack of emotional control. There is no need to tell men who are under the influence of Mills and Wood that this is not true, that though we do not know what in its essence hysteria is, save that it is a mental disease with many physical symptoms, yet it is a clinical entity with definite causes, running a course regulated by law, and not a mere series of accidents or a thing the patient may throw off at will. We are ignorant of its essential nature because we are ignorant of psychology. When, if ever, some genius discovers the laws of thought and consciousness and the true relation between matter and mind; when we know how the brain thinks and feels, then we shall know hysteria. At present there is no better definition, unsatisfactory as it is, than that of Möbius, "a state in which ideas control the body and produce morbid changes in its functions."

Practically the diagnosis is important, for on it hangs the prognosis, sometimes between death and life, often between permanent disease and cure, and the treatment. It is not only bad for the pocketbook but for your reputation when a patient whom you have doomed to permanent palsy gets up and walks, or one whom you have said airily will soon be well dies of an unsuspected brain tumor. It is somewhat serious to mistake a phantom tumor for pregnancy. Errors such as these are knockdown blows to intellectual ambition, and if often repeated are prone to cause despair of mental achievement, and finally to produce that poor specimen, "a routine doctor." Difficult, therefore, as nervous diseases are alleged to be, study them from the ground up, from the foundation stones of anatomy and physiology, and the effort will repay you in all ways. No part of the study of medicine is a better intellectual tonic. No part gives better opportunity for the exercise of reason. Even diseases of the heart and lungs offer no better, if as good, a chance to reason out from anatomical structure and physiological function the seat of disease and its nature. The test of science is the ability to foretell, and if we knew the normal structure and functions of the brain in their entirety instead of possessing only bits of knowledge here and there, we could foretell without experience what diseases could affect it and, when disease occurred, what the result would be. We can do this to a certain extent now, and before you die will surely be able to do much more.

The diagnosis of hysteria, as of all diseases, is made by the discovery of symptoms peculiar to it and by exclusion—by proving the absence of any other disease. The negative element is as important as the positive. Symptoms peculiar to hysteria—that is, occurring in it alone—are not numerous. Very important is the mode of onset of the symptoms and their grouping. For example, contractures do not come on suddenly and at the onset of an organic paraplegia. In hysteria violent contractures may come on immediately after a fit or follow some emotional excitement. The grouping of the symptoms is characteristic and unlike that seen in organic disease. Sometimes only one symptom may be present—an hysterical joint, aphonia, the fit, or a palsy—but usually, either throughout the whole course of the attack or at times, several or many symptoms more or less permanent appear. These symptoms are usually non-related—that is, are not such as follow disease in some one part of the nervous system. For example, a cerebral hæmorrhage may result in hemiplegia, hemianopsia, and aphasia, and these symptoms could be explained by locating the lesion in the left internal capsule. Such a symptom group does not occur in hysteria. But you may have in it a monoplegia, geometrical anæsthesia, and repeated fits. No local disease in the nervous system could produce them. They are typically hysterical. Quite as important as the mode of onset and the grouping is the apparent exciting cause. Some emotional or mental shock is almost always the direct agent—a fright, a cross, an accident, a disappointment, long-continued worry. I do not mean that hysteria is mere emotionalism. Far from it. The young woman who, because she can not have her own way, or because she has never been taught control, weeps and cries and rolls on the floor, or goes to bed and, pretending not to eat, gets food stealthily, or does any of those fraudulent things often related in the sensational newspapers, is not suffering from hysteria, but from another and very different thing. There may be perversion of the moral sense, but it is not a necessary part of the disease. Conscience is often clean in the severest cases. There is the hysteria of the fool and that of the genius, and they are not much unlike. In many cases the emotions play little part. Many patients are apathetic and seem never to have experienced the more complex feelings in full measure. I mean that shock may so disturb the equilibrium of the cerebral functions as to produce palsy, convulsions, anæsthesia, and other symptoms.

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* See *New York Medical Journal*, February 3, 1900, p. 177.

† Read at the meeting of the Pepper Medical Society, January 5, 1900.

Sometimes the nature of the symptom itself may prove its hysterical origin. This is often true of anæsthesia. For example, it probably never affects the area of distribution of one spinal nerve alone. It may disregard nerve boundaries and spinal levels and affect one segment of an extremity as a glove covers the hand, or appear as a band around the arm or leg; it may be hemiplegic, resembling the cerebral type, or, finally, it may occur in geometrical areas over the entire body, disobeying all laws of localization—cerebral, spinal, or peripheral. Its boundaries may shift from day to day. Again, it differs from organic anæsthesia often in being unknown to the patient, being discovered only on examination. A patient with organic anæsthesia always knows he can not feel, and has, even in the absence of palsy, great difficulty in using the insensitive part unaided by sight. An hysteric who is totally unable to tell when she is touched or pricked may even when blindfolded be able to write or use the hand in any way. In organic anæsthesia the patient is, of course, unable to recognize objects by touching and handling them, unaided by the other senses, because tactile sensibility is an essential element in the stereognostic sense. This law does not hold in hysteria. In it there may be complete loss of touch, temperature, pain, and muscle sense, and yet the patient may be able to recognize clearly all objects by handling them while blindfolded. There is no really satisfactory explanation of this. Of late years it has been customary to assume "a subliminal self" in explanation, to assume that the patient really feels, but disregards feeling, just as the normal man in a fit of absent-mindedness, in a brown study as we call it, may obey a signal bell, though unable to recall its striking, or may pay no attention to it at the time, and yet later remember that it did ring. Another familiar example is that of the man who looks at his watch, is satisfied with the result, and yet can not tell a moment afterward what time it is. Whether this is the true explanation is debatable. The anæsthesia may be total, in which case there is insensibility to all forms of stimuli, or it may be partial. The order of frequency of the latter is analgesia, thermo-anæsthesia, combined tactile and thermo-anæsthesia, electro-anæsthesia, and loss of all forms of sensibility except to heat and cold. The curious combination of analgesia and thermo-anæsthesia with preservation of the sense of touch, so common in syringomyelia, is very rare, if indeed it ever occurs. The insensibility affects not only the skin, but also the deeper structures, the muscles, the joints, and even the nerve trunks. There is frequently associated anæsthesia of one or more of the special sense organs. Frequently in hemianæsthesia, for example, we find blindness of the eye of the same side, one-sided deafness, and loss of the sense of smell in the corresponding nostril. Though anæsthesia is very frequent, it is not always present. No one symptom is always present. You can never say because such and such a phenomenon is absent therefore hysteria is not present. The diagnosis can be made only by studying all the symptoms.

Anæsthesia is not the only sensory symptom. Hyperæsthesia is quite as common. Several varieties of it exist. There may be merely increased sensitiveness of the skin over large or small areas. Again, so-called hysterogenous zones appear—that is to say, excessively sensitive spots, pressure on which will produce a fit, or, if the pressure is made during a fit, will stop it. These spots may occur in almost any part of the body, but, and this proves that law controls them and that they are not mere accidents or things pretended, they are most frequent in certain situations—over the ovaries, along the spine, on the breasts, just below the ribs, and at the vertex of the skull. One of the most interesting hyperalgesias mimics inflammation of joints. The hip and knee are the most prone to be affected; the small joints of the fingers and toes almost always escape. At first sight you will often be puzzled, but examination will reveal its nature. There is never deformity of the joint, shortening of bone, nor evidence of pus. The stiffness is caused by contractures of the muscles, not by disease of the joint. There is an exception to this. In very chronic cases in which for years there has been immobility, secondary changes may occur in the joints and also in the muscles, and under these circumstances etherization, which ordinarily relaxes the spasm, has no effect. Extreme emaciation may so alter the contour of a joint as to simulate deformity. Frequently the extremity is palsied. This, of course, can never be caused by disease of a joint. There may be redness, slight local swelling, and heat, but they are transitory, coming and going in a way impossible to inflammation. These are the cases that charlatans cure, or rather pretend to cure, for they are prone to disappear suddenly under any kind of treatment, or even without it.

The diagnosis of the fit may be difficult or easy. There are few clear-cut boundaries in symptomatology. One symptom shades off into another. It is so in hysteria and epilepsy. A typical fit in either disease is easily recognized, but there are cases in which apparently the symptoms of the two diseases are so intermixed that long observation is necessary before an opinion can be given. Furthermore, a patient may have both diseases. The character of the fit varies with the race of the patient, and it is rare to see in Philadelphia cases showing all four stages described by French authors. With us abortive types are common. The following is the usual sequence of events. The patient, after several days of fretfulness, peevishness, and mental depression, reaching sometimes to distinct melancholia, or after a period of mental excitability and intense restlessness, complains, perhaps, of globus, or clavus, or some other aura, becomes rigid for a few moments, and then is seized with a violent general clonic convulsion, the movements seeming almost willed and conscious, and occasionally appearing to be the motor expression of terror, passion, or religious ecstasy. When the fit habit is fully established the prodromal symptoms may be slight or absent, and a very trifling exciting cause may bring on the attack suddenly. Usually those who live with an hysteric can foretell a fit by changes in the manner and mood of the patient. The tongue is not bitten, the sphincters are not relaxed. There is not asphyxiation, as in epilepsy. There is never coma, but consciousness is always disturbed, is never normal. Our terminology descriptive of states of consciousness is crude and unscientific, and, therefore, not only on account of ignorance, but also because of the limitations of language, it is impossible to describe accurately the mental state during the fit. This much we may say with safety: The patient either seems to know what is going on around her, and yet after the fit has no recollection of what has happened, or she seems oblivious of all things, but afterward is able to give a more or less confused account of what occurred. Often truth and fancy are inextricably mixed and the patient can not untangle the incidents of a dream from reality. As the night horrors of children are often hysterical, so it is probable that much goes on in the mind during an hysterical fit that the patient has no or only a dim cognizance of during her normal periods. The epileptic fit is sudden in onset, short in duration; the hysterical is slow and long. The former is often followed by deep sleep, the latter rarely. An hysterical fit is often the precipitating cause of, or at least immediately precedes, anæsthesia or palsy or some other hysterical symptom. In pure epilepsy such symptoms never occur. In epilepsy, micturition or defæcation often occurs during the fit; in hysteria, large quantities of pale, limpid urine of low specific gravity are passed afterward.

Mere palsy, without qualification as to kind, is of no diagnostic value. In hysteria there are usually certain peculiarities, certain earmarks, which indicate its nature. The location of the palsy is not characteristic. It may be monoplegic or hemiplegic or paraplegic, but it is doubtful if one spinal nerve is ever affected alone, nor have I ever seen a case resembling acute multiple neuritis. The palsied part is frequently anæsthetic and contractured. Indeed, loss of voluntary motor power in hysteria is often caused not by palsy at all, but entirely by contracture—by persistent, tonic muscular spasm. The palsy may be flaccid. Great local wasting never occurs, and the reaction of degeneration is always absent. There is never a true palsy of the bladder, but there may be retention of urine and obstinate constipation. The knee-jerk is never absent. It usually is increased, and frequently a tap upon the tendon causes a sudden reflex jerk of the whole body, simulating a willed movement, but occurring too soon after the tap to be such. The presence of ankle clonus is disputed. It is admitted by all that pressure upon the sole will often cause a few irregular movements of extension and flexion of the foot. This is valueless in diagnosis. It is probable but not absolutely proved that the persistent regular movements, equal in time and equal in extent, such as one sees in spastic paraplegia, may rarely occur. One type of flaccid palsy is seen only in hysteria. In it, though there may be complete loss of voluntary movement, the patient is able to keep the palsied extremity in any position in which it is passively put. I have seen a few examples. The following is a typical case. The patient complained that one arm was helpless. The arm hung loose and slightly flexed at the elbow. The shoulder drooped a little. The reflexes were present and muscular wasting was absent. There was insensibility to all stimuli in the paralyzed part. Notwithstanding the total loss of voluntary movement of the arm the patient could, if the arm were lifted passively, hold it in any position in which it was put. There were no other symptoms or signs of disease than those related. A rough-and-ready but unsatisfactory explanation of the case is fraud. There was no motive for that, and it is much more probable that it was dependent upon idea, that on account of the slight natural difficulty in the use of an anæsthetic arm the notion grew that he could not use it at all. After treatment for a few weeks he recovered entirely.

I am sorry we have not time to consider hysterical ataxia, the visceral or ocular symptoms, nor the so-called hysterical insanities.

When hysteria exists alone the diagnosis is not difficult; but, unfortunately, it is frequently associated with and indeed caused by organic disease, and this complicates the problem very much. Certain diseases are singularly provocative of hysteria. One of the most important is brain tumor. I am sorry to confess that several times I have seen only hysteria in the early stages of a cerebral new growth, the course of the disease proving my error. The mistake is probably excusable in the early stages of disease, when the symptoms are wholly subjective. Later it should not happen, because hysteria can not cause choked disc nor anything like the complete picture of brain tumor. Cerebral hæmorrhage is a frequent cause of persistent emotionalism, but it rarely produces hysteria. Hysterical paraplegia with contracture may greatly resemble organic spastic paraplegia, and as both diseases are frequent in young women the diagnosis is important. One symptom serves to decide it. In the organic disease the muscular spasm is extensor and lessens with flexion. This never is seen in hysteria. The history is of value. Hysterical paraplegia may come on suddenly; spinal paraplegia is never sudden in onset unless caused by hæmorrhage, and in lateral sclerosis the course of events is especially slow. Lateral sclerosis begins with slight weakness and stiffness in the legs and a little difficulty in micturition, caused by spasm of the sphincter muscle. Not only diseases of the brain but also certain general affections may cause hysteria. Notable among these is typhoid fever, and notable among its hysterical complications are joint symptoms. This is the more important because typhoid fever may cause organic joint disease, and the diagnosis is sometimes far from easy.

I have wanted to show you, gentlemen, that hysteria is not mere willfulness; that the diagnosis can be made only when all the possibilities of organic disease are remembered; that the laws controlling it are unlike and apparently sometimes directly contrary to those of organic disease, and that we shall not know its true nature until we know the real relation between matter and what we call mind.

The Richmond Academy of Medicine and Surgery.—The special order for the last meeting, on Tuesday evening, April 24th, was The Significance of Albumin and Tube Casts in the Urine. The discussion was to be opened by Dr. A. L. Gray.

Therapeutical Notes.

Inhalations of Formalin in Pulmonary Tuberculosis.—Dr. Lardner Green (*Gazette hebdomadaire de médecine et de chirurgie,* March 4th) has obtained good results in beginning pulmonary tuberculosis from a spray of the following solution:

℞ Formalin (saturated watery solution of formic aldehyde, forty per cent.), Glycerin, Water,	equal parts.

M.

For Rebellious Psoriasis. — *Riforma medica* for March 20th ascribes the following ointment to Brocq:

℞ Salicylic acid	45	grains;
Ichthyol, Tar, of each	150	“
Pyrogallic acid	90	“
Lanolin or vaseline	1,500	“

M.

An Old Formula for Stoughton's Elixir.—According to the *Journal des praticiens* for February 3d, Dujardin-Beaumetz and Yvon give the following formula:

℞ Dried tops of absinthium, Chamædrys, Gentian root, Bitter-orange peel, Rhubarb root, each,	25	parts;
Cape aloes, Cascarilla bark, each	5	“
Alcohol	1,000	“

M. Macerate for several days, express, and filter.

The Treatment of Balanitis.—The *Riforma medica* for January 20th recommends bathing the glans with a 4-to-140 solution of potassium chlorate in distilled water, and then dusting it with a mixture of equal parts of tannin and starch.

A Hypodermic Solution of Guaiacol and Iodoform.—The *Journal des praticiens* for March 17th quotes the following from the *Bull. pharm. de Lyon* of unnamed date:

℞ Guaiacol	75	grains;
Iodoform	15	“
Olive oil or vaseline (sterilized), enough to make	25	drachms.

M.

This may be used in a daily dose of forty-five grains in phthisis, pulmonary tuberculosis, and tuberculous pleurisy.

A Paste for Acne Vulgaris. — The *Medicinische Woche* for February 5th gives the following formula:

℞ Resorcin, Zinc oxide, each	1	part;
Yellow vaseline	3	parts.

M.

Powders for Trigeminal Neuralgia.—The *Riforma medica* for January 10th gives the following formula:

℞ Extract of cannabis indica	7½	grains;
Salicylic acid	75	“

M. Divide into ten powders. One to be taken three times a day.

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TREACHERY TO THE RED CROSS CAUSE.

AN incident has recently occurred in relation to the South African War which is discreditable beyond expression. If that were all, however, it would not be worth our while to comment on it, but when we add that it seriously jeopardizes the future status of those grandly humane principles which form the keystone of Red Cross work and are one of the greatest glories of the present age, we are giving good reason for the execration in which the perpetrators of this dastardly outrage must ever be held by all right-thinking people. The outrage to which we refer is the action of the so-called "Chicago Ambulance Corps," the members of which, leaving these shores under the auspices of the Red Cross, ostensibly as an organization to tend the wounded Boers in the Transvaal, on their arrival at Pretoria almost to a man tore off their Red Cross badges and accepted the arms offered them by the Boers to take part as combatants in the struggle. This action has, it would appear, been followed by other so-called foreign ambulance corps in the Transvaal.

The whole value of the Red Cross organization depends upon its being always above suspicion of any partisan motives. It is only by an implicit and unshaken faith on the part of all who may chance to be belligerents that no hostile use will ever be made by any power of the neutrality, the immunity, and freedom of movement and action accorded to the Red Cross insignia, that these privileges, so essential to the carrying out of its glorious object, viz., the mitigation of the inevitable suffering of warfare, can continue to exist. The deadliest blow that has ever been struck at the laudable work of the Geneva Convention has been delivered by this so-called Chicago Ambulance Corps. It was cowardly and treacherous, and we sincerely hope that every one who participated in it will meet the fate in Africa which he richly deserves. The isolated instances of misuse of the Red Cross flag, of firing on ambulances, and of firing from ambulances, are trivial in comparison with this in their far-reaching import. Such acts must first be clearly proved to have been intentional, which in the vast majority of cases on either side we refuse to believe them to be; and when, unfortunately, some individual instance is shown to be, not accidental, but due to design, even then we must make allowance for the fact that no commander of a large army can control omnipotently the actions of every individual in it any more than the most civilized community can entirely prevent the commission of crime. All that can be done is to visit an offense with condign punishment of sufficient severity to act as a deterrent to the great multitude.

But, if there is to be room for suspicion that duly accredited Red Cross emissaries may be not really philanthropists at all, but foes in disguise, and cowardly and treacherous ones at that, then the whole foundation of the beneficent Red Cross institution will have been shaken, and military commanders will find it a matter of wisdom to "warn off" all such bodies from the theatre of war, lest they should prove to be wolves in sheep's clothing. Thus all the great benefits of the humane spirit of the age, essaying to reduce the, in any case, appalling suffering of warfare to a minimum, a spirit never probably displayed to such great advantage as in the South African war, will be dissipated; and warfare will be conducted as aforetime with the barbaric savagery from which it has in the passing century so largely emerged.

The band of unscrupulous marauders to whom we have referred came near, we understand, owing to their swashbuckling behavior and other suspicious circumstances, being stopped at Lorenzo Marques from proceeding further; but the circumstance which finally turned the scale in their favor and secured their progress was the production of a letter from Miss Clara Barton testifying to her personal acquaintance with their identity and objects. It is painfully evident that Miss Barton, whose name commands respect everywhere, has been sadly duped in the matter, and we sympathize earnestly with her in the mortification which she is now evidently enduring at the treatment meted out to her by her *protégés*. We trust that the lesson thus received will prevent any further countenancing of independent and irresponsible bodies for Red Cross work, and that only regularly enrolled Red Cross members of some standing will in future have their services in any way recognized.

We think that, all questions of the merits of this or any other war aside, any belligerent capturing such treacherous persons would be perfectly justified in not extending to them the privileges of prisoners of war, but in dealing summarily with them. Nay, more, such wholesome action would prove clearly that the neutrality of the Red Cross must and shall be respected, that it may continue unmolested to discharge its glorious functions.

TEMPORARY SERVICE IN THE MEDICAL CORPS OF THE ARMY.

The *Boston Medical and Surgical Journal* for April 19th gives extracts from a personal letter written by an acting assistant surgeon, or contract surgeon, complaining bitterly of the treatment to which the gentlemen of his corps are subjected at the hands of commissioned medical officers of the kind who hold their rank titles in higher esteem than the far more honorable title of doctor of medicine. He intimates that the least hint derogatory to an acting assistant surgeon, provided it comes from anybody possessed of military rank, is sufficient to procure the abrogation of the unfortunate's contract without any opportunity being given him to show the groundlessness of the charge. Even the privates, he says, express their contempt for the contract doctor, although in many instances he is socially and professionally the superior of the shoulder-strapped man whose disfavor he may have chanced to incur.

Surgeon-General Sternberg, as our Boston contemporary remarks, far from being a party to this intolerable and odious persecution, is constantly working to improve the status and welfare of the acting assistant surgeons, of whom there are now nearly five hundred in the service, and we believe that his efforts meet with the approval of the older men in the medical corps, those who remember the magnificent services of contract surgeons in the civil war, the record of which is to be found in the *Medical and Surgical History of the War of the Rebellion.* With the approval of the Secretary of War, he has prepared and caused to be introduced into Congress a bill providing for the commissioning of acting assistant surgeons at the end of a year's faithful and satisfactory service, and for their promotion after another year's good service, they being still subject to honorable discharge when their services are no longer required. If this bill becomes a law, it will doubtless work notable palliation of the contract surgeon's hard lot, but we should like to see a more radical step taken, that of giving the doctor who becomes an acting assistant surgeon military rank at the start, revocable of course on the termination of the need that led to his employment.

THE *PHARMACOPŒIA* OF 1900.

The Medical Society of the State of New York's committee on the *United States Pharmacopœia,* consisting of Dr. Eli H. Long, of Buffalo, Dr. Reynold W. Wilcox, of New York, and Dr. Howard Van Rensselaer, of Albany, has taken unusual pains to ascertain the views of teachers of materia medica and therapeutics touching certain points that are likely to come up in the work of revision. The committee has issued a summary of the opinions it has obtained. The great majority of those who answered the committee's letter of inquiry think that the *Pharmacopœia* in its present form meets the demands as a standard for drugs and preparations and is in conformity to the medical and pharmaceutical science of the times.

On the other hand, several suggestions are made to account for the general neglect of the book by physicians, such as mention of the impracticability of the work, its incompleteness, the fact that it retains a good many obsolete drugs, the lack of enterprise in its business management, and the increasing use of ready-made preparations. More frequent revision, or at least the issue of supplements between the regular decennial revisions, is advocated by several gentlemen, such supplements to give full information concerning new drugs; quite a large number would have the doses of medicines given, and not a few would like to see the physiological action and therapeutical uses set forth. These things, we think, ought to be done if it is hoped to make the book one to which physicians will often have recourse.

We are somewhat surprised that so many of the correspondents recommend the dropping of obsolete drugs, for obviously it is difficult to decide what drugs are obsolete and what are not, and we do not see that any reader would suffer by reason of the work's treating of drugs which he individually might not be inclined to prescribe, save from the slight increase in its bulk. Moreover, as regards this matter of obsolete drugs, the names of fifty-four drugs apparently regarded as obsolescent were submitted, and all of them have found one or more advocates of their retention—many of them a large number. For example, nineteen would retain amylum, fourteen anthemis, twenty-five apocynum, twenty-eight bryonia, fourteen castanea, twenty-one chenopodium, twelve chondrus, fifteen cusso, twelve cypripedium, twenty-nine euonymus, twenty-five granatum, eleven guaiaci lignum, thirty-three humulus, fifteen iris, thirteen matricaria, twenty-six pepo, thirty-one phytolacca (the fruit or the root), sixteen picrotoxinum, twenty-four pulsatilla, twenty-two rhus toxicodendron, thirty-one santonica, twenty-two serpentaria, thirty spigelia, twenty stillingia, twenty-one sumbul, eleven tabacum, and fifteen xanthoxylum. To judge from this list, men are readier to rail at the official list of drugs as redundant than they are to put themselves on record as opposed to the retention of a particular drug. We think that all those we have mentioned should be retained, on account of the numbers of physicians who desire their retention, if for no other reason; what would please so many men could not seriously ruffle others, and no reasonable man can expect a book treating solely of the drugs that he personally values. By all means, let not the list be materially curtailed.

ANOTHER MEDICAL V. C.

It is always with a thrill of pleasure that we read of any coveted distinction falling to the lot of a member of our profession. We congratulate the member honored, but also rejoice on behalf of the profession of medicine itself. The Victoria Cross, as everybody knows, is the most coveted distinction in the British army, being awarded only for conspicuous gallantry in the field, and the number of crosses held by the members of the medical department, officers and men, is already far in excess of the proportion which the strength of that department in relation to other arms might reasonably expect to capture on the doctrine of chances. The inference is plain—viz., that, to say the least of it, the oldtime cynicism about "non-combatants" lacked support in fact. We think that the universally admitted achievements of the Royal Army Medical Corps in South Africa must have given it its *coup de grâce.* The latest instance of such well-merited recognition is that of Major Babtie, of the Royal Army Medical Corps, whose gallant exploit of riding through a long stretch of the fire-swept zone, when his horse was killed under him, to the assistance of Long's gunners lying wounded and exposed to fire for many hours at the battle of Colenso, has added his name to the list of medical wearers of the Victoria Cross.

A QUAINT METHOD OF PUNISHING DRUNKENNESS.

According to the *Journal de médecine de Paris* for April 8th, which cites the *Imparcial*, of Madrid, of unnamed date, the authorities of the municipality of Seville have put in force an ordinance for shaving the beard and scalp of drunkards appearing in a state of inebriety in the public streets. The drunkards can at least console themselves with the reflection that one such punishment will provide them with a certain period of immunity, during which they can continue to get drunk with impunity. We presume the comedy has been enacted for the benefit of the Barber of Seville.

BRUTAL BULLETS.

Both parties in the present war are accusing each other of the use of expanding missiles. There can be no doubt that they have been used by the Boers, and, moreover, considerable quantities have been captured from them on more than one occasion. On the other hand, the Boers say that those which were found in their possession were originally taken from the British. Much acrimonious discussion has taken place on this point. Incidentally, however, some very foolish remarks have been made, as when Mr. Labouchere, in London *Truth*, quoted by the *New York Times* for April 23d, says that "at the Hague Conference all the other assembled powers protested against the use of such bullets. We" [*i. e.*, the British] "haughtily declined to yield to their opinion. No sooner do we find ourselves at war, however, than we abandon this attitude, on what ground I do not know, for if the use of such bullets was unavoidable against the Afridis it must be equally so against the Boers." The last statement is perfectly puerile. In warfare among civilized nations no combatant desires to do any special injury to a particular person—his only object is to put the adversary *hors de combat.* For this purpose such a missile as will at least temporarily disable a man is required, and the more merciful the disablement the better. But tribes like the Afridis and other savages, with whom Britain is more or less perpetually at war, will not be disabled by anything short of being completely knocked out. For them, knowing no humane considerations themselves and "playing the game with a club," so to speak, only a destructive bullet is ordinarily a man-stopper. Among civilized nations the moment a man is placed out of action, courtesy, consideration, and humanity take the place of enmity toward him on either side. It is not so with the Afridi and his like. While there is no wish to kill wantonly even a savage, he *must* be put out of the game, and short of utter disablement he does not know when he is out, or, according to civilized notions, ought to be. The circumstances are entirely different. They have not one common point of contact. But there are very obvious reasons why neither of two civilized races, such as the Briton and the Boer, should inflict needless injury on individual opponents, for the end of warfare in this case can be attained without.

A NEW JOURNAL OF TUBERCULOSIS.

We have received the first number, dated March, 1900, of the *Zeitschrift für Tuberkulose und Heilstättenwesen.* It is to be published at undetermined intervals, and six numbers will constitute a volume. The first number contains ninety-two large pages of reading matter. Two of its original articles are printed in French, one is in English, and the remainder are in German. The number contains an excellent portrait of the late Sir Thomas Grainger Stewart. The new journal is edited by Dr. C. Gerhardt, Dr. B. Fränkel, and Dr. E. von Leyden, and is published in Leipsic. It will undoubtedly prove a substantial addition to our periodical literature.

THE RESISTANCE OF MICRO-ORGANISMS TO INTENSE COLD.

It is interesting to note that some experiments conducted by Professor Dewar show that intense cold has no more effect on certain micro-organisms than it has on the germinative power of seeds. The record of the experiments, prepared by Dr. Allan Macfadyen, has been communicated to the Royal Society by Lord Lister, and appears in the society's *Proceedings*, vol. lxvi, No. 427. Young and vigorous cultures, on solid and in liquid media, of *Bacillus typhosus, Bacillus coli communis, Bacillus diphtheriæ, Spirillum choleræ asiaticæ, Bacillus proteus vulgaris, Bacillus acidi lactici, Bacillus anthracis* (sporing culture), *Staphylococcus pyogenes aureus, Bacillus phosphorescens,* and *Photobacterium* *balticum* were exposed for twenty hours to the temperature of liquid air. They were then carefully thawed, and in no instance could any impairment of their vitality be detected.

DR. SQUIBB'S *EPHEMERIS.*

A NEW number of the *Ephemeris of Materia Medica, Pharmacy, Therapeutics, and Collateral Information,* edited by Dr. Edward H. Squibb, Jr., has recently been issued. It is the first number of volume vi, covering the year 1899, and constitutes a most useful digest of the literature of the branches with which it deals.

PROLAPSE OF THE UMBILICAL CORD BEFORE THE RUPTURE OF THE MEMBRANES.

SUCH a prolapse, of course, takes place within the bag of waters, and it is apparently not without danger to the fœtus. At a recent meeting of the Lyons Society of the Medical Sciences (*Lyon médical,* April 8th) M. Commandeur reported three cases in which the mobility of the fœtal head was such that the cord could not have been compressed between the head and the pelvis, but must have been affected by retraction of the ring of Bandl. He thinks that in such cases labor should be terminated speedily.

ANIODOL, AN ALLEGED POWERFUL AND NON-TOXIC ANTISEPTIC.

THE long-sought-for antiseptic that shall be energetic and at the same time harmless has been found, according to Dr. Sedan (*Revue d'hygiène,* February–March; *Lyon médical,* April 8th). It is described, somewhat unsatisfactorily, as a solution of trimethanal combined with a derivative of the allylic series, incorporated with a glycerin especially distilled for the purpose, and it is called aniodol. It is furnished in various dilutions and in the form of a soap. It has been used on a large scale in the Baudelocque Clinic under the direction of Professor Pinard, with absolutely perfect results and without the slightest injury to the skin. As a deodorizer, it is said to act instantaneously and completely. It kills the gonococcus *in vitro,* and a 1-to-3,000 urethral injection is used as a remedy for gonorrhœa and as a prophylactic after a risky coitus.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported for the two weeks ending April 21, 1900:

DISEASES.	Week ending Apr. 14.		Week ending Apr. 21	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	15	7	7	3
Scarlet fever	158	22	176	18
Cerebro-spinal meningitis	0	9	0	10
Measles	680	22	716	27
Diphtheria	225	50	240	55
Laryngeal diphtheria (croup)	23	11	18	5
Tuberculosis	237	179	201	182
Chicken-pox	16	0	14	0
Small-pox	1	1	5	0

The St. Louis Medical Society of Missouri.—At the last regular meeting, on Saturday evening, the 21st inst., Dr. M. J. Engman read a paper entitled The Nature of Some Epidermic Growths, and their Treatment with Formalin. Microscopical specimens were exhibited.

Marine-Hospital Service Health Reports.—The following cases of small-pox, yellow fever, cholera, and plague were reported to the surgeon-general during the week ending April 20, 1900:

Small-pox—United States.

Mobile, Ala.	Apr. 7–14	1 case.	
Washington, D. C	Apr. 7–14	1 “	
Jacksonville, Fla	Apr. 7–14	1 “	
Chicago, Ill	Apr. 7–14	1 “	
Evansville, Ind	Apr. 7–14	4 cases.	
Wichita, Kan	Apr. 1–7	5 “	
Wichita, Kan	Apr. 7–14	14 “	
Covington, Ky	Apr. 7–14	9 “	
Lexington, Ky	Apr. 7–14	3 “	
New Orleans, La	Apr. 7–14	51 “	19 deaths.
Portland, Me	Apr. 7–14	1 case.	
Baltimore, Md	Apr. 7–14	1 “	
Detroit, Mich	Apr. 7–14	1 “	
Minneapolis, Minn	Apr. 1–14	20 cases.	
Omaha, Neb	Apr. 7–14	4 “	
New York, N. Y	Apr. 7–14	1 case,	1 death.
Cleveland, Ohio	Apr. 7–14	11 cases,	2 deaths.
Greenville, S. C	Apr. 7–14	2 “	
Salt Lake City, Utah	Apr. 1–14	3 “	
Portsmouth, Va	Apr. 7–14	1 case.	
Spokane, Wash	Apr. 7–14	3 cases.	

Small-pox—Foreign.

Prague, Austria	Mar. 17–24	4 cases.	
Antwerp, Belgium	Mar. 24–31	2 “	2 deaths.
Ghent, Belgium	Mar. 24–31		2 deaths.
Rio de Janeiro, Brazil	Feb. 23–Mar. 2		15 “
Bonaventure County, Quebec, Canada	Apr. 5–12	25 “	
Barranquilla, Colombia	Mar. 24–31	5 “	5 deaths.
Cairo, Egypt	Mar. 11–18	8 “	
Liverpool, England	Mar. 24–31	21 “	1 death.
London, England	Mar. 17–31	8 “	1 “
Gibraltar	Mar. 26–Apr. 1	3 “	1 “
Athens, Greece	Mar. 24–31	10 “	6 deaths.
Bombay, India	Mar. 6–13		222 “
Kurrachee, India	Mar. 4–11	17 “	6 “
Palermo, Italy	Mar. 17–24		1 death.
City of Mexico, Mexico	Mar. 18–Apr. 1	40 “	22 deaths.
Vera Cruz, Mexico	Apr. 1–7		3 “
Moscow, Russia	Mar. 10–17	9 “	2 “
Riga, Russia	Jan. 1–31		38 “
St. Petersburg, Russia	Mar. 3–10	20 “	8 “
Warsaw, Russia	Mar. 10–17		1 death.
Corunna, Spain	Mar. 24–31		1 “
Madrid, Spain	Mar. 16–24		6 deaths.
Valencia, Spain	Mar. 24–31	3 “	3 “
Straits Settlements, Singapore	Feb. 10–Mar. 3		14 “

Yellow Fever.

Rio de Janeiro, Brazil	Feb. 23–Mar. 2		18 deaths.
Barranquilla, Colombia	Mar. 24–31	1 case,	1 death.
Panama, Colombia	Mar. 27–Apr. 10	3 cases.	
Havana, Cuba	Mar. 1–Apr. 17	2 “	4 deaths.

Cholera.

Bombay, India	Mar. 6–13		10 deaths.

Plague—Insular.

Manila, Philippine Islands	Feb. 24–Mar. 3		7 deaths.

Plague—Foreign.

Bombay, India	Mar. 6–13		736 deaths.
Kurrachee, India	Mar. 4–11	90 cases,	63 “
Formosa, Tamsui, Japan	Jan. 1–31	53 “	43 “
Formosa, Tamsui, Japan	Feb. 28	46 “	39 “
Osaka, Japan	Apr. 16	Present.	
Asuncion, Paraguay	Feb. 8–15		6 “
Djiranro, Persia	Mar. 29	Present.	

American Dermatological Association.—The twenty-fourth annual meeting will be held in Washington, on Tuesday, Wednesday, and Thursday, May 1st, 2d, and 3d, under the presidency of Dr. H. W. Stelwagon. In addition to the president's address, the programme contains the following papers: Bullous Dermatitis (Dermatitis Herpetiformis?) in Children. Five Cases following Vaccination, by Dr. J. T. Bowen; Dermatitis Vesico-bullosa et Gangrænosa Mutilans, by Dr. G. W. Wende; Loss of Hair: A Clinical Study founded on Three Hundred Private Cases, by Dr. G. T. Jackson; An Unusual Phenomenon of Syphilis—Othæmatoma, by Dr. Joseph Zeisler; A Case of Brocq's Érythrodermie pityriasique en plaques disséminées, by Dr. J. C. White; Prophylaxis and Control of Leprosy in this Country, by Dr. P. A. Morrow; A Case of Tinea Tonsurans resembling Tinea Favosa, with Remarks, by Dr. L. A. Duhring; The Frequency of Parasitic Diseases of the Skin, and Measures Advisable for Limiting their Spread, by Dr. W. T. Corlett; A New Type of Cutaneous Tuberculosis, by Dr. J. C. Johnston and Dr. B. Lapowski; Endothelioma and Angeiosarcoma of the Skin, by Dr. J. A. Fordyce; The Ætiology and Pathology of Cutaneous Cancers, by Dr. A. Ravogli; A Case of Nævus Cancer; Metastasis; Operation; Cure, by Dr. S. Pollitzer; Syphilitic Lesions of the "Wheal" Type, by Dr. H. G. Klotz; A Report of a Case of Multiple Tumors of the Skin, by Dr. W. A. Hardaway and Dr. M. F. Engman; Two Cases of Rhinoscleroma and an Unusual Form of Epithelioma of the Scalp, by Dr. C. W. Allen; A Case of Xanthoma Tuberculatum Diabeticorum, showing the Rapid Disappearance of Lesions under Antidiabetic Regimen and Treatment, by Dr. S. Sherwell and Dr. J. C. Johnston; A Brief Report of Two Cases of Persistent Exfoliation of the Lips, by Dr. H. W. Stelwagon; A Case of Protozoic Dermatitis, by Dr. D. W. Montgomery; Blastomycetic Dermatitis and its Relation to Yaws, by Dr. I. Dyer; Three Cases of Blastomycetic Infection of the Skin, One of them producing a "Tumor" of the Lower Lip, by Dr. F. H. Montgomery and Dr. H. T. Ricketts; A Review of the Subject of Blastomycetic Infection of the Skin, with a Report of Two New Cases, by Dr. J. N. Hyde, and Some Experimental Observations on Urticaria Factitia, by Dr. T. C. Gilchrist. A lantern-slide exhibit will be given illustrating: (*a*) Some clinical and pathological features of malignant diseases of the skin and affections, by Dr. J. A. Fordyce; (*b*) Clinical and pathological features of blastomycetic infection of the skin, by Dr. J. N. Hyde and Dr. F. H. Montgomery; (*c*) A few rare diseases of the skin, by Dr. G. H. Fox, and (*d*) Pathological features of cutaneous cancers, by Dr. A. Ravogli.

The Death of Sir Andrew Douglas Maclagan, M. D., etc.—By the death of Sir Douglas Maclagan the medical profession in general, and Edinburgh in particular, are deprived of a distinguished representative. Sir Douglas Maclagan came from a family which, as the *British Medical Journal* for April 14th points out, has given to the profession in three generations no less than six doctors, "all men of outstanding merit." Sir Douglas Maclagan enjoyed the almost unique distinction, shared with him only by his father, Dr. David Maclagan, of having been president of both the Royal College of Physicians and the Royal College of Surgeons of Edinburgh. He was formerly professor of medical jurisprudence and public health in the University of Edinburgh. Among the pall-bearers at his funeral were his son, Dr. R. C. Maclagan, and his brother, the Archbishop of York.

Changes of Address.—Dr. Stanley O. Sabel, to the Tecumtha Apartments, No. 219 West Thirty-fourth Street, New York; Dr. J. E. Sheppard, to No. 108 Pierrepont Street, Brooklyn.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 14 to April 21, 1900:*

A board of medical officers, to consist of HAVARD, VALERY, Major and Surgeon, United States Army; GORGAS, WILLIAM C., Major and Surgeon, United States Army; KEAN, JEFFERSON R., Major and Surgeon, United States Volunteers, and QUINTON, WILLIAM W., Captain and Assistant Surgeon, United States Army, is appointed to meet in Havana, Cuba, May 1, 1900, for the examination of acting assistant surgeons in the United States Army who are candidates for admission into the Medical Department of the Army.

CALDWELL, ROBERT E., Acting Assistant Surgeon, United States Army, will proceed to Seattle, Washington, for duty as transport surgeon on the *Rosecrans*.

DEWITT, CALVIN, Lieutenant-Colonel and Deputy Surgeon-General, United States Army, will proceed to New York city for further orders.

GORGAS, WILLIAM C., Major and Surgeon, United States Army, will proceed to Santiago, Cuba, for duty as chief surgeon, Department of Puerto Principe.

HAVARD, VALERY, Major and Surgeon, United States Army, will proceed to Havana, Cuba, for duty as chief surgeon, Division of Cuba.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending April 21, 1900:*

EVANS, S. G., Passed Assistant Surgeon. Order of April 13th modified. Ordered to proceed home when detached from the *Marblehead*, and to be ready for sea duty.

HARMON, G. E. H., Medical Inspector. Detached from the *Baltimore* and ordered to the *Oregon*.

MORRIS, L., Passed Assistant Surgeon. Ordered to the *Baltimore*.

STEPHENSON, F. B., Surgeon. Detached from the *Oregon* and ordered to the *Baltimore*.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the United States Marine-Hospital Service for the Seven Days ending April 19, 1900:*

GLENNAN, A. H., Surgeon. To rejoin station at New Orleans.

MCINTOSH, W. P., Surgeon. Detailed to represent the service at the meeting of the Medical Association of the State of Alabama, to be held in Montgomery, Alabama, April 17th to 21st. To proceed to Tarpoon Springs, Florida, for special temporary duty.

GUITÉRAS, G. M., Passed Assistant Surgeon. Bureau order of March 5, 1900, relieving Passed Assistant Surgeon Guitéras from duty at Matanzas, Cuba, revoked.

HEISER, V. G., Assistant Surgeon. Detailed as delegate to the congress "for the struggle against tuberculosis," to be held in Naples, Italy, April 23 to 28, 1900.

TROTTER, B. E., Assistant Surgeon. Bureau order of March 5, 1900, detailing Assistant Surgeon Trotter for duty as quarantine officer at Matanzas, Cuba, revoked, and he is directed to proceed to Cienfuegos, Cuba, as quarantine officer.

BALLARD, J. C., Acting Assistant Surgeon. Granted leave of absence for fifty-one days from May 1, 1900.

HAVELBURG, W., Acting Assistant Surgeon. Granted leave of absence for thirty days from May 10, 1900.

ALLEN, G. C., Hospital Steward. Granted leave of absence for twenty-seven days from April 19, 1900.

ILTIS, G. W., Hospital Steward. To proceed to Cleveland and report to the medical officer in command for duty and assignment to quarters.

Board Convened.

Board convened to meet at Washington, D. C., April 19, 1900, for the physical examination of candidates for appointment as second assistant engineer in the United States Revenue-Cutter Service. Detail for the board: CARRINGTON, P. M., Surgeon, chairman; FRICKS, L. D., Assistant Surgeon, and BILLINGS, W. C., Assistant Surgeon, recorder.

Appointments.

LONG, JOHN D., of Pennsylvania, GLOVER, MERVIN W., of the District of Columbia, EARLE, BAYLIS H., of South Carolina, and LLOYD, BOLIVAR J., of Texas, commissioned as assistant surgeons April 9, 1900.

ILTIS, GEORGE W., Minnesota, appointed junior hospital steward.

Society Meetings for the Coming Week:

TUESDAY, *May 1st:* New York Neurological Society; Buffalo Academy of Medicine (Section in Surgery); Elmira, New York, Academy of Medicine; Ogdensburgh, New York, Medical Association; Syracuse, New York, Academy of Medicine; Medical Societies of the Counties of Cattaraugus (annual—Salamanca), Columbia (annual—Hudson), Orange (annual), and Mercer (annual), New York; Connecticut River Valley Medical Association (Bellows Falls, Vermont); Hudson, New Jersey, County Medical Society (annual—Jersey City); Androscoggin, Maine, County Medical Association (Lewiston); Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

WEDNESDAY, *May 2d:* New York Academy of Medicine (Section in Public Health); Society of Alumni of Bellevue Hospital; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond, New York (New Brighton); Penobscot, Maine, County Medical Society (Bangor); Bridgeport, Connecticut, Medical Association.

THURSDAY, *May 3d:* New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, New York; Boston Medico-psychological Association; Medical Society of the County of Orleans, New York (annual—Albion); Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington); Medical Society of City Hospital Alumni, St. Louis; Atlanta Society of Medicine.

FRIDAY, *May 4th:* Practitioners' Society of New York (private); Clinical Society of the New York Post-graduate Medical School and Hospital; Baltimore Clinical Society.

SATURDAY, *May 5th:* Manhattan Medical and Surgical Society, New York (private); Miller's River, Massachusetts, Medical Society.

Births, Marriages, and Deaths.

Married.

BARKSDALE—HAWKINS.—In Vaiden, Mississippi, on Wednesday, April 18th, Dr. J. W. Barksdale and Miss Emily Meade Hawkins.

BARUCH—ALTMAN.—In Buffalo, on Wednesday, April 18th, Mr. Harting Nathaniel Baruch, son of Dr. Simon Baruch, of New York, and Miss Amalie Rayner Altman.

BENNETT—PIERCE.—In Manasquan, New Jersey, on Monday, April 16th, Dr. J. W. Bennett, of Long Branch, New Jersey, and Mrs. Mary Pierce.

BINGHAM—DODD.—In East Orange, New Jersey, on Wednesday, April 18th, Dr. Arthur Walter Bingham and Miss Mary Condit Dodd.

BRYAN—RAWSON.—In Port Richmond, Staten Island, on Wednesday, April 18th, Dr. William Bryan, of West Brighton, New York, and Miss Mary A. Rawson.

CARTER—SHERMAN.—In Cleveland, on Wednesday, April 18th, Dr. Edward Perkins Carter and Miss Sarah Rathbone Sherman.

CLARK — BARTLETT. — In Rochester, on Tuesday, March 27th, Dr. George Paul Clark and Miss Maud Edith Bartlett.

DE HART—SEWARD.—In Jersey City, on Monday, April 16th, Mr. John Somers De Hart, son of Dr. M. F. De Hart, and Miss Katharine Seward, daughter of Dr. John L. Seward.

HUGHES—JENKINS.—In Baltimore, on Wednesday, April 18th, Mr. James Albert Hughes and Miss Fanny Helen Jenkins, daughter of Dr. Felix Jenkins.

LUMBARD—MEIER.—In New York, on Wednesday, April 18th, Dr. Joseph Edward Lumbard and Miss Martha Louise Meier.

PALMER—COOLEY.—In New York, on Wednesday, April 18th, Dr. John B. Palmer and Dr. Helen Cooley.

ROBERTSON — THOMSON. — In New Orleans, on Wednesday, April 18th, Dr. Albert Sydney Robertson and Miss Annabelle Thomson.

SENN—LAROUSSINI.—In New Orleans, on Tuesday, April 24th, Dr. Emanuel J. Senn, of Chicago, and Miss Alys Laroussini.

WILCOX—HOLCOMBE.—In Plattsburgh, New York, on Tuesday, April 17th, Mr. Roger Hudson Wilcox and Miss Jessie Winchell Holcombe, daughter of Dr. Oscar A. Holcombe.

Died.

CLARKE.—In Baltimore, on Saturday, April 14th, Louise F. Boyce, wife of Dr. Powhatan Clarke.

HASSIE.—In Gouverneur, New York, on Saturday, April 14th, Dr. T. R. Hassie, in the forty-second year of his age.

SPELMAN.—In Brooklyn, on Friday, April 20th, Dr. William J. Spelman.

SPILLMAN.—In Columbus, Mississippi, on Tuesday, April 17th, Dr. J. W. Spillman.

Pith of Current Literature.

The Journal of the American Medical Association, April 21, 1900.

Affections of the Kidney in Relation to Pregnancy. By Dr. J. Clarence Webster.—The treatment of a pregnant woman with symptoms pointing to disturbed renal functions is to be carried out on the lines followed in the non-pregnant state. Strict watchfulness is necessary, and premature induction of delivery, in the interests of the mother, should be brought about when there are visual disturbances and continued headache, pulmonary or other marked œdema, marked cardiac disturbance, frequent nose-bleedings, continued increase in the casts and albumin in the urine, or uræmia. In a number of cases the woman may respond to treatment so satisfactorily as to go to full term and be delivered of a healthy child.

The Evolution of the Animal Cell. By Dr. Joseph Smith.

Successful Pylorectomy. By Dr. H. O. Walker.

Ureterectomy. By Dr. J. Wesley Bovee.

Suggestions on Rights and Liabilities of Surgeons. By Mr. T. J. Mahoney.—Considers the question of a surgeon's duty to operate while his patient is unconscious and while his friends are beyond communication, and concludes that a surgeon is not obliged to operate and can not be held guilty for failure to operate under these conditions, and may be held guilty if he does operate, should the operation have failed. Treats also of "privileged communications," and "whether a doctor is ever justified in refusing to prolong the life of a patient mortally ill." Counselor Mahoney concludes his interesting article by suggesting that a surgeon hire a lawyer when he is really in need of a legal opinion.

Thyreoid Extract in Juvenile Obesity. A Clinical Note. By Dr. I. N. Love.

Septic Conditions in Some of the Acute Infectious Disorders of Children. By Dr. A. C. Cotton.

Cerebral Cyst: Report of a Case. By Dr. Van Buren Knott.

Primary Tuberculosis. By Dr. Dudley Tait.

Castor Oil in the Treatment of Neuralgia. By Dr. Harold N. Moyer.

Resection in Case of Ununited Fracture of Femur. By Dr. I. P. Klingensmith.

The Smegma Bacillus. By Dr. Oscar A. Dahms.—Found on the prepuce of the male, in the grooves between the labia majora and minora of the female, and about the perinæum and anus of both sexes; also found in the cerumen of the ear, the axilla, groin, and umbilicus. Resembles greatly the bacillus which, according to Lustgarten, stands in a causative relation to syphilis. Ordinary carbol-fuchsine may be used to good advantage in staining, and gentle heat favors the staining process.

While Lustgarten's bacillus may or may not be the specific cause of syphilis, the smegma bacillus, at any rate, is free from pathogenic properties. The author will continue his paper next week.

Boston Medical and Surgical Journal, April 17, 1900.

On Intermenstrual Dysmenorrhœa. By Dr. Malcolm Storer.—Twenty cases, followed by the author's conclusions that this intermenstrual pain coming about the fourteenth day from the beginning of menstruation and the nineteenth after the climax of Stevenson's wave, consequently occurring just about the time the pressure line has reached its lowest point, is an intermenstrual wave of preparation rather than of subsidence—a nervous explosion of Nature making ready for the coming activity, whether menstrual or ovarian.

Treatment of Cancer of the Cervix of the Uterus Complicated by Pregnancy. By Dr. George Ben Johnson.

The Third International Congress of Obstetrics and Gynæcology, held at Amsterdam, August 8 to 12, 1899. By Dr. George G. Englemann.

Gunshot Wound of the Abdomen, with Multiple Wounds of the Intestine. By Dr. Howard A. Lathrop.—Dr. Lathrop lays stress on the value of profuse irrigation in early cases. An empty condition of the stomach is a fortunate circumstance. A systematic search through all the intestinal coils for perforations should be made. Given a gunshot wound of the abdomen, an immediate exploratory median cœliotomy should be performed. The objects to be gained: to determine the extent of injury; to avoid fæcal extravasation and infection; to stop hæmorrhage; to repair damage; to establish drainage if necessary.

The Practical Value of the White Blood Count in Surgical Cases. By Dr. J. C. Hubbard.—The writer is skeptical. "From our present knowledge of the causes and variations of leucocytosis we can not yet make any deductions which are simple enough to be of any great use to the surgeon at the bedside." It would seem that no particular reliance can be placed upon deductions from blood counts.

Medical Record, April 21, 1900.

On the Formation of an Artificial Anus. By Dr. Robert F. Weir.—Dr. Weir's able article shows (1) that an artificial anus of a temporary character can be best established by Maydl's operation or by Bodine's modification; (2) that overslipping of fæces may be prevented by proper spur formation, by narrowing the rectal opening, or by occluding the rectal end of the bowel, which may be fastened in the wound or dropped into the abdominal cavity; (3) that continuance of the abnormal outlet is aided by muscle separation (Maydl) or by muscle-bridging (von Hacker and Hartmann), or by the use of inflatable or molded plugs or other apparatus. (4) It is only, however, to be satisfactorily effected (though larger experience in this is desirable) by an extra-abdominal iliac outlet (Witzel's iliac colostomy) to be made by opening the bowel outside and behind the iliac spine. In this procedure the bowel is compressed between the edge of the bony pelvis and the skin.

Indications for Constitutional Treatment of Catarrhal Affections of the Upper Air-passages. By Dr. Walter A. Wells.

A Case of Fracture and Medical Ethics. By Dr. E. S. Goodhue.—A wise saw and a modern instance illustrative of the fact that a doctor should manage his own case and keep his dignity from being upset by the oftentimes idiotic suggestions of the layman.

The Use of Electricity in Chronic Rheumatism. By Dr. William J. Morton.—Interesting. There is a fruitful field for labor in the intelligent use of electrostatic administrations, and it is Dr. Morton's opinion that a good influence machine should constitute a part of the equipment of every hospital in the land; for, while diagnosis, prognosis, and pathology are the letter of the law, we may yet remember that therapeutics is the good Samaritan.

The Medical News, April 21, 1900.

Pain as a Pathognomonic Symptom of Ectopic Pregnancy. By Dr. Henry C. Coe.—Pain alone, when not accompanied by a clear history of menstrual irregularity, symptoms of pregnancy, and the presence of a tumor at the side of the uterus or in Douglas's pouch, known to be of recent development, is pathognomonic of extra-uterine pregnancy only under certain conditions, viz.: The pain is of a sharp, colicky character, distinctly localized on one side, attended with faintness more or less marked, and is usually followed by intervals of hours or days of complete remission. The pulse is accelerated during the attack, but there is no rise of temperature. The latter is an important symptom distinguishing ectopic from inflammatory conditions. The violent tearing pain attending intraperitoneal rupture is accompanied by the unmistakable evidences of internal hæmorrhage. In extraperitoneal rupture the symptoms vary in severity according to the amount of blood lost, but soon subside, being succeeded by the usual evidences of pressure resulting from a mass in the folds of the broad ligament which displaces the pelvic organs. A persistent pain following the acute attack may indicate localized peritonitis.

Tuberculous Disease of the Urinary Apparatus. By Dr. J. M. Gile.—Interesting, and upon a subject that seems to receive much too little attention. The author states that the condition is one of considerable frequency; its course is quite as variable as is that of the same disease when affecting other organs. To the microscope we must go for aid in diagnosis of this condition, and its hereditary character is even more marked than in pulmonary tuberculosis. The age incidence appears to be markedly in young adult life, while the location of the disease is a matter of circumstance.

A Case of Probable Accidental Inoculation with the Malarial Parasite. By Dr. William H. Katzenbach.—A singular case which would seem to prove, as Celli says, that malaria is an "inoculation disease." Having performed an operation upon a patient in whose blood at the time a group of parasites was passing through its cycle of development (within twenty-four hours she had her first paroxysm), and having pricked himself with the needle several times while operating, the operator himself some time subsequently was attacked. The paper is short and worth reading.

The Curability and Treatment of Early Phthisis. By Dr. W. F. Hazelton.

Philadelphia Medical Journal, April 21, 1900.

Selections from the Lane Lectures. Senile Arterial Plethora. By Dr. T. Clifford Allbutt.

The Wesley M. Carpenter Lecture on Infection through the Tonsils, Especially in Connection with Acute Articular Rheumatism. By Dr. Frederick A. Packard.—An interesting field is held to view in this lecture, which is able and concise and well worth reading.

Report of Two Cases of Fracture of the Shaft of the Radius. By Dr. W. B. Lowman.

Appendicular Abscess Rupturing into the Sac of a Reducible Inguinal Hernia; Operation by Drainage with Permanent Cure of the Hernia. Intussusception of the Bowel Relieved by Operation; Relapse and Second Operation. Chronic Hæmatocele of the Tunica Vaginalis Testis Associated with an Encysted Omental Hernia resembling Malignant Disease of the Testicle. By Dr. Orville Horwitz.

Early Operation in Appendicitis by the Country Practitioner; Report of a Case probably caused by Typhoid Infection. By R. H. Harper.—Favors the early and wide use of this operation as a means of untold benefit in the saving of human life and in the alleviation of human suffering.

Pœdiatrics, April 15, 1900.

On Nephritis in Childhood, especially that occurring in the Course of Malaria. By Dr. Moncorvo.

The Care of Premature and Feeble Infants. By Dr. S. W. Ransom.—After cleverly opposing the dictum that immature and feeble infants become, if they grow up, a menace to the vigor of the race, Dr. Ransom discusses the means of rearing them that are compatible with the resources of the general public. Instead of an incubator, it is very satisfactory to use two bath tubs of different sizes, one placed within the other, the space between them filled with water, and the water heated by means of kerosene lamps, a thermometer being kept near the child's head. Applications of warm olive oil are useful to prevent dermatitis. The food should be the mother's milk or that of a suitable wet-nurse, or, those failing, properly modified cow's milk. If the child refuses to take it or can not swallow, it may be introduced into the stomach through a soft catheter.

Some Reasons why Tuberculosis Spreads more rapidly among Cattle than in the Human Race. By Dr. Walter W. Gardiner.

American Journal of Obstetrics and Diseases of Women and Children, April, 1900.

Dermoid Cystoma of the Pelvic Connective Tissue. By Dr. Henry D. Beyea.

Hysterectomy for Acute Septic Metritis and Peritonitis. By Dr. Egbert H. Grandin.

Abdominal Hysterosalpingo-oophorectomy by a New Method, etc. By Dr. J. Coplin Stinson.

Nephro-ureterectomy. By Dr. George H. Noble.

A New Method of Treating the Ureter in Tuberculous Disease of the Kidney and Ureter. By Dr. William R. Pryor.

External Palpation versus Vaginal Examination in Normal Labor. By Dr. William M. Sprigg.—Dr. Sprigg argues that so long as labor is advancing satisfactorily, and it has been ascertained some weeks before that there is no pelvic abnormity, we are not ordinarily justified in making a vaginal examination, on account of the danger of infection. He gives some excellent instructions as to how to make the most of abdominal palpation in ascertaining the particular features of a case.

Remarks on the Operative Treatment of Prolapse. By Dr. John B. Deaver.

Two Cases of Extra-uterine Pregnancy, etc. By Dr. John G. Clark.

Death after Operation, possibly due to Unsuspected Interstitial Hepatitis. By Dr. I. S. Stone.

The Montreal Medical Journal, March, 1900.

History of Gonorrhœa. By John Macrae, A. B., M. B.

Acute Gonorrhœa and its Complications in the Male. By Dr. A. E. Garrow.—The author draws attention to the frequency of a previous history of gonorrhœa in the subjects of prostatic and vesical tuberculosis. His method of treatment for acute gonorrhœa is by copious irrigations, at first with weak antiseptic solutions at a temperature of from 115° to 120° F. He has lately used a solution from a half to two per cent. of protargol, retained for from fifteen to thirty minutes. Irrigation should be commenced at once and repeated twice daily for the first four or five days, then daily for a week or more, so long as the discharge remains purulent and contains gonococci. When the discharge becomes thin and serous he uses an astringent solution. Internally, he finds salol, ten grains three time a day, an important drug, especially at the end of the first week; in the initial stages, alkaline diuretics, with an anodyne, and for robust patients an arterial sedative. Copaiba and sandalwood he eschews as only productive of gastric trouble.

Chronic Gonorrhœa in the Male. By Dr. George E. Armstrong.—The author emphasizes the danger of infection through two channels, the blood and the urethra. In his opinion, infection, as a rule, is coincident with instrumentation. Infection travels from the bladder to the kidney by the lymphatics, the ureters, and the blood-vessels. The author is strongly in favor of dilating all dilatable strictures, and considers nearly all strictures behind the periscrotal angle dilatable by the interrupted or continuous method. In one recent case of traumatic stricture the author laid open the stricture area by dissection and then formed a new floor, as in the operation for hypospadias.

Gonorrhœal Arthritis. By Dr. James Stewart.—The author analyzes forty-eight cases of gonorrhœal arthritis treated at the Royal Victoria Hospital, of which six were in women. Special attention is called to treatment by the Tallerman-Sheffield apparatus. The affected joint is exposed to dry air heated to about 300° F. for about half an hour daily or every second day. Under this treatment the general condition of the patient was always noted to improve, though this may have been due to the improved hygiene of hospital life. There was an average gain in weight of about a pound a week. In practically all the cases of mild or subacute arthritis the baths caused marked relief of pain and greater freedom of movements for the time being. The action could not be termed specific, as the majority of cases were left at the end of three or four weeks with some stiffness of the joints and pain on exertion, but the results were better than those of ordinary local measures.

Gonorrhœa in the Pregnant Female. By Dr. J. Chalmers Cameron.—The author states that so long as the gonococcus does not gain entrance into the uterine cavity and attack the endometrium, a cure may be effected without seriously disturbing the sexual life. Menstrual disturbance is the earliest and most important sign of gonorrhœal infection of the uterus or the annexa. The flow becomes profuse and irregular and preceded by or accompanied with pain in the external genitals. Colicky pains especially show invasion of the annexa and peritonæum. In pregnancy a satisfactory diagnosis can not be made from clinical symptoms alone. The cervical mucus should be examined for gonococci. One-child sterility is due to pregnancy setting a barrier by the decidua shortly after marriage, which checks the further progress of the gonococcus. After delivery the gonococcus enters the uterus, and then sterility ensues.

The treatment of gonorrhœa in pregnancy calls for supervision of habits, etc. During abortion or labor an expectant attitude is best. Internal examinations should be avoided as much as possible. Credé's method of expelling the placenta should be avoided. In the puerperal period, perfect rest. Energetic treatment of vagina, urethra, or rectum; but treatment of the cervix is risky. Ice-bags and opium or hot applications. Vaginal irrigations should be avoided. When fever is gone and pain is felt only on deep pressure over the organs, about the seventh week, large hot douches and glycerin and ichthyol tampons may be used.

Gonorrhœa in its Relation to Diseases of the Eye. By Dr. Frank Buller.

On a Case of Hammer Toe Affecting the Four Outer Digits of Either Foot. By G. A. Charlton, Student of Medicine, McGill University.

Quarterly Report of the Eye and Ear Clinic of the Royal Victoria Hospital, Montreal. By Dr. Frank Buller and Dr. W. Gordon M. Byers.

Note upon the Carbolic Method for the Detection of Tubercle Bacilli in the Sputum. By E. W. Hammond, D. V. S.—The author uses a modification of the usual method as follows: So soon as the sputum arrives at the laboratory there is added to it an equal volume of five-per-cent. carbolic acid; the mixture is then briskly shaken up for a few minutes, by which means the mucus is broken up and disintegrated. It is then allowed to settle. Sedimentation takes place very rapidly, and it is not necessary to wait for twelve or twenty-four hours, as recommended by Kanthack and Drysdale; indeed, within an hour all the bacilli which are present would seem to be deposited. Using a pipette of small calibre, the deepest portion of the sediment is now drawn up, a small drop is placed on each of two perfectly clean coverslips, made into a film, dried in the air, and then passed three times through the flame of a Bunsen burner.

It is not essential to treat with the mixture of alcohol and ether, but forthwith a drop or two of carbol-fuchsine can be placed on the coverslips and the film be stained by the ordinary method and counterstained by means of Gabbitt's blue.

Besides the disinfection of the sputum, which is insured by this means—in itself an advantage—the method is both simpler and much pleasanter to work with than is the use of caustic potash with or without boiling, while it would seem that the preliminary employment of the carbolic acid is a definite aid to the subsequent staining by means of the carbol-fuchsine.

The Lancet, April 7, 1900.

Some Cirrhoses of the Liver. By Dr. W. B. Cheadle. —Second Lumleian Lecture.—(See abstract of the *British Medical Journal* for April 7th in last week's *Journal.*)

Practical Observations on Cancer of the Breast. By Sir W. M. Banks.—Third Lettsomian Lecture.—(See abstract of the *British Medical Journal* for April 7th in last week's *Journal.*)

Remarks on the Physical Signs of Pulmonary Disease. By Dr. P. H. Pye-Smith.—The writer deprecates the loose way in which the physical signs of the chest are usually reported, and calls attention to numerous common errors in terminology. He differs from the accepted teachings on several points, among them the following: Râles are not a sign of pulmonary œdema. Capillary bronchitis of the aged is identical with lobular pneumonia, and is not due to a bronchitis, which spreads as far as the pulmonary lobules and no farther. Almost every fatal case of lobular pneumonia between the ages of puberty and sixty proves on autopsy to be one of tuberculosis or lobar pneumonia. Decided dullness on percussion is usually absent in beginning phthisis and in lobular pneumonia; considerable solidification of the lung must exist. Marked dullness in phthisis is usually due to cavity formation or to pleuritic thickening with adhesions.

The Surgical Treatment of Dilatation of the Stomach. By Dr. L. A. Bidwell.—After giving the principal causes of dilatation of the stomach and the common methods of diagnosis, the writer reports thirteen cases of dilatation of the stomach treated surgically. Of these, three cases were operated upon a second time, making sixteen operations in all. Nine cases were due to malignant disease, and of these five died within two weeks of the operation. Two of the cases were operated upon a second time. Gastro-enterostomy was performed seven times, with three deaths; pylorectomy, three times, with one death; and pyloroplasty once, with a fatal result. Of the patients who recovered, one died two months later, while the others are still alive. The ages of these patients ranged between thirty-one and sixty-nine years. The gastro-enterostomies were performed by Halstead's method of lateral anastomosis. Of the non-malignant cases, three were for cicatricial stenosis of the pylorus and the fourth for pyloric stenosis due to omental adhesions following a gastric ulcer. Pyloroplasty was performed in two cases, Loreta's operation in a third, and in the fourth the adhesions were simply separated. All the operations were successful.

A Parasitic Crustacean as a Foreign Body on the Cornea. By Dr. R. D. Batten.—The writer reports the case of a fishmonger in whom he found a small oval vesicle, two millimetres in diameter, at the upper margin of the left cornea. The vesicle contained whitish flakes. On attempting to scrape it, the whole mass lifted off the cornea. It was found to be a fish parasite, a crustacean of the order *Copepoda*; probably *Caligus curtus*. It was not determined whether the parasite was alive while on the cornea.

The Uses of Oxygen Inhalation. By Dr. P. G. Lodge.—The writer reports six cases, in four of which oxygen inhalations were used with great benefit. In a case of double pneumonia in a child of three, and in a case of capillary bronchitis (age not stated) the oxygen acted well for a time, but both cases ultimately proved fatal. A table is given showing the pulse beats and respirations to the minute and the bodily temperature before and just after the administration of oxygen in a case of empyema.

The Glasgow Medical Journal, April, 1900.

On Thorax Resection for Empyema and the Resulting Deformities. By Henry Rutherford, M. B.

Notes on Clinical Surgery. By James H. Nicoll, M. B., C. M.—The author records a case of congenital stenosis of the pylorus in a baby aged five weeks. An exploratory incision was made and the pylorus was found to be represented by a bulky ring of muscular or fibromyomatous tissue. In the child's wasted and enfeebled condition a pylorectomy appeared hopeless. The stomach was therefore opened on the anterior surface parallel with the centre line of the lesser curvature, a dressing forceps passed by it through the pyloric obstruction, and the blades expanded till the peritoneal coats of the stricture ruptured. Suture of the stomach wall and suture of the parietes followed. The result was perfect. Symptoms disappeared, and emaciation was replaced by plumpness and good health. It remains to be seen how far the measure, originally intended as a temporary expedient, will be permanent.

Measurement of Involution of the Uterus, with Nine Charts. By Alexander Maclennan, M. B., C. M.

A Means of Practising the Use of the Ophthalmoscope. By Walter Colquhoun, M. B., C. M.

West London Medical Journal, April, 1900.

The Treatment of Primary and Secondary Syphilis. By Alfred Cooper, F. R. C. S.—The author places no reliance whatever either in excising the indurated sore or in attempting to destroy it by cauterization. His firm belief is that the induration is a local manifestation of constitutional infection, which would continue to develop even were it possible to remove the lesion, which he regards as the result of a previous and complete contamination of the system. Medicinally he speaks highly of tannate of mercury in pills of from one to two grains three times daily. For intramuscular injections he has used since 1894 soziodol of mercury in one-eighth-of-a-grain doses once a week.

The Surgical Treatment of Dilatation of the Stomach. By Leonard A. Bidwell, F. R. C. S.—The surgical operations in malignant disease are either pylorectomy or gastroenterostomy; in non-malignant, either pyloroplasty, gastroenterostomy, Loreta's operation, pyloroectomy, or division of adhesions. In gastroptosis and neurotic cases lavage and massage will usually suffice, but in gastroptosis stitching the stomach to the parietal peritonæum may be needed. And in simple dilatation a portion of the anterior wall may be folded in and sutured if required. The author reports sixteen cases of stomach operation, eleven for malignant disease, of which five died within a fortnight, and five for cicatricial stenosis, of which all were successful. In all cases the patients were fed by mouth the day after the operation, and the author can trace no bad results to early feeding.

A Series of Forty-three Consecutive Gynæcological Operations during 1899. By Dr. J. A. Mansell Moullin.

The Liverpool Medico-chirurgical Journal, February, 1900.

The Midwifery Forceps as Used and Abused. The Inaugural Address given at the opening of the Session (of the Liverpool Medical Institution) 1899–1900. By the President, W. Macfie Campbell, M. D.—The author reviews the history of the use of forceps and the principles obtaining at various times and with different authorities for their employment. He lays down his own principles of action as follows: 1. A prolonged first stage is always safe to mother and child, provided that the membranes are intact and the presentation natural. 2. During that stage an anæsthetic is seldom necessary or advisable. 3. When malpresentation is diagnosticated, it may be necessary to correct the presentation by conjoined manipulation, or, if the corrected presentation does not remain permanent, to rupture the membranes, and possibly turn, or apply the long forceps. 4. Exhaustion is sometimes found in a protracted first stage, especially where the waters are lost prematurely, and it may be needful to dilate and extract, or dilate in extracting by the forceps. As regards the second stage, or that of expulsion, if in one hour (1) no progress has been made; (2) the mother's pulse becomes rapid; or (3) the child by its movements or pulse shows signs of exhaustion, the author puts on Braithwaite's short forceps and delivers. Finally, the author traverses the thesis of Professor Sinclair, of Manchester, at the British Medical Association meeting at Montreal in 1898—viz., that the forceps is used too early and too often with consequent gynæcological injuries, and holds that statistics show good cause for not returning to the abstention of the early part of the century.

A Case of Sacro-iliac Arthritis with Pyuria. By R. C. Dun, M. B., M. R. C. S.

A Case of Acute Staphylococcic Infection Simulating Perforating Gastric Ulcer. By John Hill Abram, M. D.

Harelip and Peculiar Congenital Tumor of Prolabium. By Rushton Parker, F. R. C. S.

Notes of a Visit to Nordrach. By Richard Caton, M. D.—The author describes the routine, and criticises the lack of courtesy, and almost the rudeness, displayed by Dr. Walther to himself and, as he learns, to visitors generally, whether professional men or others. Many patients had improved greatly while under treatment there, though, of course, there were some cases that were getting worse. The sputum is constantly examined, and when one cubic centimetre of it injected into a healthy guinea-pig fails to cause tuberculosis within six weeks, the patient is considered cured. The patients were mostly English, very few Germans. Only forty-five are accommodated, and the cost is about twenty dollars a week. The general impression gathered by the author was that much of the system of treatment was wise and judicious, though he saw some things of which he strongly disapproved.

A Successful Case of Cholecystotomy. By G. P. Newbolt, F. R. C. S.

A Case of Foreign Body in the Eye. By Richard Williams.

An Epidemic of Follicular Conjunctivitis in a Liverpool School. By K. Grossmann, F. R. C. S. E., and M. Loewenthal, M. D.

Two Cases of Colectomy. By F. T. Paul, F. R. C. S.

Case of Gastric Ulcer, Perforation and Operation. By Rushton Parker, F. R. C. S.

Fibroids—Vaginal Enucleation versus Vaginal Hysterectomy. By Henry Briggs, F. R. C. S.—The author submits the following conclusions: Where operative treatment is required for uterine fibroids (not including polypi), pelvic or abdomino-pelvic, below the level of the umbilicus and approachable *per vias naturales*—1. Greater safety and better remote results are obtainable by the vaginal than by the abdominal route. 2. Exception in favor of abdominal enucleation in well-defined subserous growths, the uterus normal in length, in women below forty-five years of age. 3. Vaginal hysterectomy is the best and safest operation for subserous growths where the dimensions of the uterine cavity are increased, probably by interstitial or submucous tumors, or where the latter are known to coexist. 4. Vaginal enucleation ought to be more frequently adopted as the best operation for submucous and interstitial tumors. 5. Complete anterior section of the dilated cervix renders exploration of the uterus more reliable and enucleation easier. 6. Piecemeal extraction of growths merely lengthens the operation.

Note on Gonorrhœal Rheumatism. By Damer Harrison, F. R. C. S. E.—The author records a case of gonorrhœal rheumatism of both knees treated by aspiration and washing out with an antiseptic lotion having been performed with no good result, he used a large trocar and cannula and removed from the joints a large quantity of fluid, "together with an enormous number of melon-seed bodies." Repeated washing with carbolic lotion, and massage of the joints when full of it, removed more loose bodies. Repeated operations resulted in cure. These bodies have been detected by the author in other forms of infective rheumatism.

Fatal Case of Graves's Disease in a Girl of Eleven. By Hubert Armstrong, M. B.

A Case of Multilocular Cystic Epithelial Tumor of the Lower Jaw. Excision of Half the Jaw. Recovery. By G. P. Newbolt, F. R. C. S.

Infantile Mortality during the Third Quarter of the Year. By E. W. Hope, D. Sc., M. D.—Observations in the city of Liverpool lead the author to the conclusion that feeding and other conditions remaining the same, "the mortality increases only and always with hot and dry weather." The diminution of infantile diarrhœa in rainy autumns points to the beneficial effect of street cleansing, and emphasizes the need of paving streets in such a manner as to admit of a thorough washing and the systematic use of hose washing in dry seasons.

The Treatment and Prognosis in Simple Fracture of the Bones of the Lower Limbs. By R. W. Murray, F. R. C. S.—The author emphasizes the need of treating a fracture with full consideration of how long the patient will be off work and how far he will be able to resume his former employment. "This will, of course, largely depend upon what the man's trade is. The after result might be entirely satisfactory if he is a dock laborer and works on the flat, but the same result by no means satisfactory if the man is a sailor, an Everton forward, or a steeple jack."

Notes on Digestives. By William Carter, M. D.

Two Cases of Chronic Parenchymatous Nephritis and the Results of Prolonged Treatment. By Charles J. Macalister, M. D.—The author records a case of chronic nephritis in a girl of nineteen with general anasarca, chronic vomiting, impairment of vision, albuminuric retinitis, etc. The treatment consisted in keeping the patient perfectly at rest in bed, with absolutely nothing but milk by way of nourishment for six months, the medicines consisting of internal antiseptics and occasional purgatives each week. Gradually all the dropsy disappeared, the eyesight improved, and all the uræmic symptoms vanished. At the end of nine months the urine was free from albumin, and remained so, except when an excess of nitrogenous food was given. The heart became normal in size, the pulse soft and natural. The patient could eat a moderate amount of fish, fowl, bread, and vegetables. There remained manifest renal inadequacy, but a sufficiency of healthy kidney was left to enable her to live comfortably, provided the diet was regulated. The second case, also in a young girl, resembled the first. Digitalis and caffeine were administered in this case in addition to the other treatment. The final dispersion of the dropsy was effected by rubbing over the abdomen, night and morning, linimentum hydrargyri and applying a flannel binder.

Ectopic Pregnancy. By J. E. Gemmell, M. B.

The Ætiology of Cancer, with Special Reference to the Parasitic Theory. By R. J. M. Buchanan, M. D. (Second Communication).—The author's thesis is that in cancer are to be found bodies foreign to normal tissues; that there is reason to believe they are living entities introduced from without; that to them the cancer cell occupies the position of a host—in fact, that these bodies are parasitic and they live, probably move, grow, and reproduce their kind, with a life history all their own.

Dermato-therapeutics. By Frank H. Barendt, M. D.—The author deals in detail with the trivial points, which are of such paramount importance in the treatment of skin diseases. When a patient comes with eczema, following upon an injury, for instance, it is very important to "find out why his barked shin should have led to this result," and we should be prepared to detail *in extenso* (1) whether he should continue to use soap and water; (2) how he should apply the medicament prescribed; (3) what covering he should use; (4) how often he should renew the remedy; and (5) how he should remove the old application before redressing the region. The author next considers in detail the bearing upon skin diseases of clothes, scratching, the use of soap and water (which he prohibits in all cases where the epidermis is injured or in any way defective, recommending the use of hot oil instead), and the circumstances under which fatty vehicles, pastes, dusting powders, lotions, pellicles, plasters, etc., are severally preferable. Arsenic for internal administration he recommends should "be pushed by rapidly increasing doses till physiological results are noticed. Then do not stop the use of the drug, but rather diminish the dose and increase it gradually once more." This procedure he recommends with all so-called alteratives—*e. g.*, antimony, arsenic, mercury, the iodides, and thyreoid extract.

Movable Kidney with Hydronephrosis and Gallstone in the Same Subject. By F. T. Paul, F. R. C. S.

Plastic Operation for the Relief of Deformity Caused by Burns of Arm and Chest. By G. P. Newbolt, F. R. C. S.

La Presse médicale, April 4, 1900.

The History of Cytology. By M. P. E. Launois.

At What Age is Syphilis Acquired?—M. Edmond Fournier has tabulated his investigations of fourteen thousand cases of syphilis. In residents of cities the ratio is greatest between the twentieth and thirtieth years in both men and women, falling materially before and after this decade of life. Among hospital patients, selected mainly from country people, the greatest frequency of infection among men is in the third decade, while women show the greatest frequency in the eighteenth year. Among prostitutes, the author found that they acquire syphilis most often in the twenty-first year. M. Fournier advises legislative and didactic measures to protect the young, and urges especially that the danger of infection from prostitutes be checked by constant supervision and watchfulness.

L'Indépendance médicale, April 4, 1900.

Methods of Gynæcological Diagnosis.—A review of the chapters on diagnosis in M. M. A. Lutaud's gynæcology.

Gazette hebdomadaire de médecine et de chirurgie, April 5, 1900.

Suprapubic Puncture in Prostatic Carcinoma.—M. Xavier Delore reports a case of prostatic cancer in which the patient lived eleven months after a suprapubic puncture for urinary evacuation was made. He points out the difficulty of diagnosis of cancer of the prostate gland and the futility of a radical operation where there are metastases. Suprapubic urinary drainage he thinks is preferable to catheterization in these cases.

Archives de médecine des enfants, April, 1900.

Acute Symphysis of the Pericardium, probably Rheumatic, with Fatty Degeneration of the Myocardium and of the Viscera. By M. E. Weill and M. L. Gallavardin.

Practical Hints on Intubation in Infants. By M. Demetrio Galatti.—The author declares that it is perfectly feasible to acquire sufficient skill in intubation to be able to practise it without an assistant, and therefore in country practice, but he insists upon the utmost gentleness and upon celerity, also upon the necessity of acquiring the requisite skill by much practice on the cadaver and by making one's early attempts on the living subject in a hospital, under the eye of an experienced teacher. He prefers the O'Dwyer instruments to others, and does not usually leave a thread attached to the tube. A perfectly satisfactory finger guard may be extemporized by winding rubber adhesive plaster several times around the finger, a slip of thin wood or pasteboard being included on the palmar and another on the dorsal surface.

Pneumonic Serous Meningitis followed by Chronic Hydrocephalus. By Dr. Charles Leroux.

Deutsche Medizinal-Zeitung, April 5, 1900.

Soap Alcohol as a Disinfectant of Instruments.—Dr. Karl Geison finds this agent (spiritus saponatus officinalis) a convenient and rapid method of sterilizing instruments. The instruments are thoroughly washed with the solution or are simply wrapped snugly in cotton saturated with it. Exclusion of the air is an important consideration. The hands of the operator and the skin of the patient may be disinfected with the same agent, and the solution is harmless when applied in full strength as a dressing. It does not injure the instruments. Its composition is:

Olive oil	6	parts;
Caustic potash	7	"
Alcohol	30	"
Water	17	"

The caustic action of the potash is neutralized by the olive oil and water.

Euchinin in Malaria and in Quinine Idiosyncrasy.—Dr. G. Montoro-de-Francesco finds that this quinine derivative is a good substitute for the ordinary salts of quinine because it has the same action in malaria, given in the same dose, without evoking signs of intoxication. Its tastelessness makes it valuable for children, and it may be administered to persons who have an idiosyncrasy against quinine without fear of producing symptoms of poisoning.

Wiener klinische Wochenschrift, April 5, 1900.

On Alexander's Operation.—Dr. E. Ehrendorfer, in an extensive review of the literature of the subject, commends the Alexander operation of shortening the round ligaments of the uterus in the inguinal canal for retroflexion, when it is accompanied by a firm closure of the canal by Bassini's method. This consists in passing the suture through a small part of the internal oblique and transversalis muscles, then through the round ligament, then through Poupart's ligament. Four or five fine silk sutures are passed in this way, effecting a safe and complete closure of the inguinal canal. The aponeurosis of the external oblique is then closed by a running silk suture. The author believes that Alexander's operation, thus modified, is the best and safest of the various procedures for holding the retroflexed uterus in its normal position.

Bacteria in the Female Urethra. By Dr. Ferdinand Schenk and Dr. Lothar Austerlitz.

The So-called "Pseudo-cirrhosis of the Liver." (Reply.)—Dr. Friedel Pick, the namer of this condition, replies to an attack made upon it as a clinical entity, and reasserts that it is important to recognize it from a diagnostic standpoint. The vital element in its diagnosis lies in the recognition of the pericarditis, which Pick considers an ætiological factor. The article is mainly controversial.

Deutsche Aerzte-Zeitung, April 1, 1900.

On Operations for Ulcers of the Stomach and Duodenum and the Conditions Consequent on them. By Dr. L. Heidenhain.

Asterol, a New Mercurial Compound. By Dr. J. Karcher.—Asterol is described as a paraphenol sulphacid mercury and ammonium tartrate. Steinmann (*Berliner klinische Wochenschrift*, 1899, No. 11) finds that it exerts a germicidal action in the presence of albumin, acts to a greater depth than corrosive sublimate, and does not injure surgical instruments, but Vertun has disputed this. The author's experiments lead him to agree for the most part with Steinmann, and he adds that, while asterol has the poisonous properties of a mercurial, it is destitute of corrosive action.

On the Feeding of Nurslings. (Concluded.) By Dr. Bernhard Bendix.

Rhotacism. (Concluded.) By Dr. A. Liebmann.

Riforma medica, March 25, 26, 27, 1900.

Ankylostomiasis in Sicily. By Dr. A. Tomaselli-Peratoner.—The writer studies miner's anæmia as it occurs in Sicily. In speaking of the treatment, he says that the two indications are to remove the cause and to bring the body of the patient into the best possible hygienic condition. The best agents for destroying the worm and its larvæ are carbolic acid, thymol, and the ethereal extract of filix mas (Perroncito). Carbolic acid can not be used, because, in the doses which are required to destroy the ankylostoma, it is fatal to man. The extract of male fern has been used with good results, in large doses, fifteen to thirty grammes at a times, preceded in the evening by a purgative dose of calomel. Some observers have also employed smaller doses of the extract, repeated daily for several days. In the writer's clinic thymol has been used for the past few years, and he believes this drug to be the sovereign remedy in ankylostomiasis. He divides six to eight grammes of thymol into three to four powders, and gives one every two hours. In order to combat the severe anæmia, he uses iron by mouth or hypodermically, and in the severe cases transfusion or hypodermoclysis. The writer also uses a three-per-cent. infusion of cinchona hypodermically in the morning, soluble hæmoglobin (five-per-cent. solution) by mouth during the day, and finally arsenious acid, as arsenic increases the number of red blood cells. An abundant diet, including one hundred to two hundred grammes of Marsala wine daily, was prescribed in all cases.

In speaking of the prevention of the disease, he recommends the following sanitary precautions in connection with the sulphur mines of Sicily: To remove the causes of the unsanitary conditions in the mines; to oblige the workmen to keep their bodies clean; to supply the mine with potable water; to organize a system of permanent sewers, or of movable receptacles for the fæcal discharges of the miners, which must be transportable to the surface of the earth; to provide for a thorough sanitary inspection of the mine at frequent intervals, and to ameliorate the physical as well as material condition of the operatives. Then, only, one may hope that it will be possible to combat a disease which is so prevalent in Sicily.

Riforma medica, March 28 and 29, 1900.

On the Functional Relation between the Thyreoid and the Parathyreoid Glands. By Dr. Gustavo Lusena.—According to Vassale and Generali, who published a research on this subject in 1899, these glands are absolutely independent of each other. The function of the thyreoid, according to these observers, is a general regulation of the trophic, nutritive processes in the body, while the parathyreoid secretes an antitoxic substance, the absence of which gives rise, in animals in which it has been removed, to a symptom-complex resembling tetany. The writer has made a number of experiments on dogs to prove that there is an intimate connection between the functions of the two glands, and summarizes his findings in the following conclusions: 1. That in a dog which has been deprived of its parathyreoid the tetany disappears if the thyreoid gland is also removed, but if the metabolic processes are accelerated by injections of Lugol's solution (0.5 centigramme of pure iodine to each kilogramme of the animal's weight daily) the animals die of cachexia. 2. That if the injection of Lugol's solution is made immediately after the second operation (thyreoidectomy) in these animals, the tetanic syndrome disappears in the same way, and if the injections are continued, the animal dies of cachexia. 3. That in dogs in which the whole thyreoid and parathyreoid glands are removed, and the animals subsequently subjected to the injections of Lugol's solution, there will be an acceleration of the organic exchange. 4. That some of these dogs present the characteristics of severe and rapid cachexia, but none the syndrome of tetany. These experiments prove that the hypothesis which attributes to the thyreoid and parathyreoid glands the control of the rapidity of the metabolism is correct, but that the difference in the symptoms that follow the extirpation of the parathyreoid and those that follow the removal of the thyreoid is connected with the acceleration or inhibition of metabolism. In the same way, the supposition that thyreoidectomy produces a cessation of the tetanic syndrome of parathyreoidectomy because the former inhibits metabolism can not be accepted.

Gazzetta degli ospedali e delle cliniche, April 1, 1900.

A Contribution to the Study of the Action of the Toxines of Tuberculosis upon the Pulmonary Tissue. By Dr. F. Badano.—In order to study this question the writer injected an aqueous solution of tuberculin, prepared according to the method of Maragliano, into the tracheas of a series of dogs and of a series of rabbits. His aim was to introduce the poison of tuberculosis directly into the lung in order to determine the character of the local changes which the toxines produced by the bacillus incite in the pulmonary tissue. The five dogs that received the injections died one by one at intervals varying from ten days to two months after the operation. On microscopic examination their lungs did not show the presence of tubercle bacilli, a result which was expected, as the bacilli were carefully excluded from the toxine before injecting. The pathological changes varied according to the time which had elapsed from the date of the injection to the death of the dog. In one animal, which died after ten days, he found an intense hyperæmia of the lungs and the signs of a slight catarrhal broncho-pneumonia. In the bronchi there was a mucous exudate, which probably consisted of degenerated epithelium. In places the epithelium was detached. The walls of the bronchi were the seat of small round-cell infiltrations, which were not very marked. Many of the alveoli contained an inflammatory exudate, which was composed largely of leucocytes and epithelium, and in some of the air cells there was a fibrinous exudate. The interalveolar sæpta were, for the most part, thickened at the expense of the air cells themselves, by small round-cell infiltrations, which were insignificant in some places but of considerable size in others. In the lungs of the dogs that died after a longer period the broncho-pneumonia was more marked. There was an intense small-cell infiltration in the submucosa of the bronchi and in the peribronchial tissues. The exudate in the bronchi resembled that found in the first dog, but was more abundant, and completely blocked the lumen of some of the air tubes. The alveoli were more or less filled with inflammatory exudate, and the interalveolar sæpta were the seat of a well-marked small-cell infiltration, which was so prominent in some parts of the lung that the reticulum of the pulmonary tissue was no longer distinguishable. Finally, in the lungs of the dogs that died after two months, the same changes were found as in the other animals, but the inflammatory exudate in the bronchi contained many pus corpuscles and epithelium in all stages of destruction. The exudate in the alveoli was scanty and purulent. The interstitial infiltration was marked.

In the rabbits he used the same procedure. Two of these animals died of asphyxia at the time of the first injection; the rest, seven in number, he allowed to survive for periods varying between ten and forty days. In general, he noted the same changes in their lungs as were found in the dogs. In the peribronchial tissue of some of the rabbits he found little nodules of small cells which looked very much like tubercles. They did not contain any giant cells.

In the rabbits that died after a longer period, thirty to forty days, the lungs presented extensive portions that were almost completely destroyed as to structure, and converted into amorphous masses of granular substance which contained but few epithelial and pus cells. The periphery of these areas of caseation was characterized by dense infiltration of small round cells. In one animal that he allowed to survive for fifty-two days he found a large cheesy nodule in the left lung, which had ulcerated into the pericardium and the pleura, produced inflammation of these parts, and caused the death of the rabbit. In order to control his experiments, and to determine whether these lesions were due to the mechanical action of the aqueous solution of tuberculin, the writer injected into another series of rabbits similar quantities of blood serum, and of solution of glycerin. He found that neither of these substances could cause such lesions in the lungs as were observed in the animals injected with tuberculin, but he noted that glycerin in five-per-cent. solution produced small hæmorrhages in the bronchi, desquamation of the epithelium in the air tubes, and in some cases small round-cell infiltrations in the peribronchial tissues. This shows that it is not advisable to use glycerin solutions of tuberculin for experiments of this kind, as was done by other observers.

He concludes that the intratracheal injections of tuberculin produce in dogs a broncho-pneumonia which tends toward resolution, while in rabbits it gives rise to a more severe pulmonary infection, which is characterized by the presence of what appear to be tubercles without giant cells, and of caseation of areas of lung tissue.

Concerning the Difference between the Pathogenic Action of my Tetanus Toxine and that of Behring. By Dr. Guido Tizzoni.—The writer has made a comparative study between the two varieties of tetanus toxine, and gives the following summary of the differences between the two preparations: 1. Tizzoni's toxine is more potent, the difference in efficiency varying from the lowest limit, in the most sensitive animals, where it was 3 to 5 in favor of Tizzoni's preparation, to the highest limit, in the least sensitive animals, where it stood as 1 to 166. 2. The order of sensitiveness is for Behring's toxine as follows: guinea-pig, mouse, rabbit; while for Tizzoni's toxine it is guinea-pig, rabbit, mouse. This is due to a marked increase of the susceptibility of the rabbit to the toxine of Tizzoni. 3. The relation between the fatal dose for each animal is different in the two serums. While the toxine of Behring requires 2.34,250 times the fatal dose in the mouse and the rabbit to kill a guinea-pig, Tizzoni's toxine requires only a very small fraction in excess of double the quantity of the fatal dose of a guinea-pig to kill a rabbit in the same period of time, and four times that dose to kill a mouse. The writer thinks that these differences must be due to differences in the chemical constitution of the toxines, due to the mode of preparation.

Vratch, March 18, 1900, O. S. (March 30, N. S.).

On the Protection of the Head and Eyes from the Heat Emitted by Sources of Artificial Light. By Dr. R. A. Katz.—An account of a series of experiments concerning the heat rays emitted by kerosene lamps and electric incandescent bulbs, together with tests of several forms of shades and screens.

Materials for the History of the Epidemic of Plague in Kolobovka. By Dr. N. J. Schmidt. (Continued.) The writer concludes his detailed account of the cases that occurred during the epidemic of plague in the village of Kolobovka, province of Astrakhan, Russia, during the summer of 1899. He emphasizes the fact that the disease was stamped out, thanks to a system of rigidly enforced quarantine. It was noted that only close and prolonged contact with the patients caused a transmission of the infection, while the observance of even primitive precautions were sufficient to protect persons who came and went in the houses of the victims. He gives an interesting summary of the clinical picture of the disease as it occurred in this particular epidemic. The general type of the disease was termed by Kapoustine, the consultant detailed by the government to report on the epidemic, as the pulmonary form of the plague. There was a period of incubation varying from three to nine days. The onset was sudden, with weakness, vertigo, headache, chills, and fever. A high temperature and a frequent pulse were constant symptoms. In eighteen of the twenty-four patients there was cough with bloody expectoration. The cough was short, frequent, and the expectoration was coughed out suddenly, in a mass, after the attack. The sputum was not rusty, but consisted of mucus mixed with blood; it contained a quantity of air bubbles and its color was redder than in lobar pneumonia, and darker than in hæmoptysis. On microscopic examination the various characteristic types of the bacillus of bubonic plague were found in the sputum. Diffuse râles were heard over the lungs, but no dullness on percussion was obtained. The tongue was covered with a dense white fur, occupying the middle of the surface, while two parallel red streaks were seen at the edges. The orbital conjunctiva was injected, especially at the angles of the eyelids. The face was red, the eyes were shining and widely open, the lips parted —a characteristic expression, which combined watchfulness and horror. Petechiæ were present in most cases. In a few patients there were enlarged and painful inguinal glands, and in five similarly affected glands in the axillæ and in the neck. There were severe prostration, depression of the mental faculties, restlessness, and delirium. Death occurred suddenly in full consciousness. The duration varied from one to four days, averaging two days. As stated in the preceding issue, the mortality was 95.8 per cent., one patient out of the twenty-four having recovered.

Russian Archives of Pathology, Clinical Medicine, and Bacteriology, February, 1900. (Roussky Archiev Patologyi, Klinitcheskoy Meditsiny y Bacteriologyi.)

Concerning Cyanotic Induration of the Kidneys. By Dr. F. Braun.

Concerning the Absorption of Bacteria by the Lymph Nodes. By Dr. A. Egorow (Moscow).—The writer found with Halban that in local infection the time of appearance of the germs in the nearest lymph nodes varies for the different species of bacteria. He also noted that the number of bacteria in the glands varied according to the stage of the infection. At first the number increases rapidly, attains its maximum, and then decreases with the same rapidity. Non-pathogenic germs are absorbed more rapidly by the glands than pathogenic. The rapidity of absorption is closely related to the intensity of the lymph current, and the latter depends upon the lymphagogue influence of the bacterial products contained in the cultures injected. When the rapidity of absorption is modified by fractional infection, one finds that the organism gains more resistance against the germs. This is due to the fact that the rapid lymph current carries the germs away from the point of inoculation, and so prevents their multiplication at this point. His experiments prove that when injected subcutaneously, the transmission of the infection takes place exclusively through the lymph vessels. He found that the bacteria travel unhindered to the glands from the site of infection, and that it is only when they reach the more central portions of the lymph node that they encounter their enemies the phagocytes.

Echinococcus of the Brain Complicated by Facial Hemiatrophy. By Dr. M. W. Mouratoff (Moscow).—The case of a boy, aged eleven years, who on admission to the hospital presented the following symptoms: A severe headache and a discharge from the ear, which had existed for the past two years. Double neuroretinitis. Marked hemiatrophy of the left side of the face, of the tongue, and of the palate. Sensation on left side of face was dulled. Electric reaction of facial nerve not changed; lingual muscle presented a diminution of faradaic excitability. Patient died with symptoms of meningitis. The diagnosis was abscess of the posterior cranal fossa, affecting the trigeminal in its transit through the skull, and followed by a hemiatrophy of the face. The autopsy revealed an echinococcus in the posterior cranial fossa. On microscopic examination, a marked atrophy of the cells of the nucleus of the twelfth nerve of the left side was noted, together with a degeneration of the intramedullary portion of the root of the hypoglossal. Some atrophied cells were also found in the nucleus of the left facial; also a slight degeneration of the sensory portion of the trigeminus. Daughter cysts were in the level of the olive. On account of the complexity of the lesions, this case can not serve for the construction of a theory of the pathogenesis of facial hemiatrophy.

A Case of Pemphigus Foliaceus Cazenavii. By Dr. Nazaroff (Odessa).—The patient was a woman, aged sixty-seven, who was perfectly well until four months before admission. On examination, the author found on the mucosa of the palate and of the lower lip red, sanguinolent areas denuded of epithelium and surrounded by the remains of bullæ that had occupied these spots. Bullæ of various sizes and similar denuded spots were scattered over the scalp, the neck, the chin, the back, and the chest. The bullæ were red, shining, moist. A very slight pressure upon apparently normal portions of the epidermis was sufficient to detach the epithelial layer, beneath which a pale, shiny surface was revealed, that would become moist and red on the following day. On microscopic examination, it was found that the desiccation of the epidermis took place between the stratum granulosum and the stratum lucidum. The patient emitted a disagreeable, fœtid odor from the decomposition of the secretions. Her general condition became continually worse, and she died of cachexia five months later. The principal diagnostic symptom of Cazenave's pemphigus, the feeble connection between the corneal layers and the subjacent strata of the skin, is not present in any other disease of the skin.

Streptomycosis and its Serum Therapy. By Dr. M. P. Nestchadimenko (Kieff).

Miscellaneous.

Rupture of the Œsophagus Caused by Vomiting.—Dr. R. L. Bowles and Mr. G. R. Turner (*Lancet*, March 31st) reported to a recent meeting of the Royal Medical and Chirurgical Society a case of rupture of the œsophagus caused by vomiting. Sixteen other cases have been previously recorded. The vomiting caused by a tumblerful of salt water was followed by collapse of an alarming nature and epigastric pain, and the patient complained of agonizing pain on swallowing. All vomiting ceased after the sudden onset of the pain and collapse. Under the influence of hypodermic injection of morphine the patient's condition somewhat improved. Auscultation was difficult, but so far as could be ascertained the cardiac sounds were absent and the chest was hyperresonant. Emphysema of the neck, soon extending to the face, appeared some hours before death, which occurred twenty-two hours and a half from the commencement of the attack. The post-mortem examination showed emphysema of the chest and neck, chiefly on the left side, and left pneumothorax, and an inch and a half above the diaphragm there was a longitudinal rupture of the otherwise healthy œsophagus. With reference to the surgical treatment, allusion was made to the possibility of exposing the œsophagus in the posterior mediastinum without injury to any important viscus. Drainage of the posterior mediastinum and suture of the rupture were regarded as feasible, and an attempt at such treatment was fully justified in what was otherwise a necessarily fatal injury. Dr. Cyril Ogle had made the necropsy on the case. There was no doubt that the rent had occurred before death. The emphysema and pneumothorax were beyond doubt. As to the œsophageal rent, there were no signs of any disease in the gullet; it was softened a little in the lower part, but that was post-mortem softening.

Proceedings of Societies.

THE SOCIETY OF THE ALUMNI OF THE CITY (CHARITY) HOSPITAL.

The President, Dr. William L. Stowell, in the Chair.

Meeting of December 13, 1899.

Pernicious Anæmia.—Dr. T. K. Tuthill said he could not give as complete a report of the case as he would like to. The patient lived eight or nine miles from Paterson and was under his care only part of the time. He had communicated with the attending physician to get the report, but had not yet heard from him. He could give the man's history prior to this time, his general habits and constitutional tendencies, leading up to the condition which rendered the pernicious anæmia possible. The patient was forty-two years of age, perfectly correct in his habits; did not use tobacco or stimulants of any kind. He was married about three years ago. He had been a delicate man all his life; in childhood it was thought he was going into a decline and his parents put him on a farm, where he seemed to improve. He afterward worked for many years as a city salesman. He lived by the railroad time-table, going back and forth, night and morning, which might have some influence on his health. The man ate his breakfast with a time-table beside him to catch his train. He did that year after year. He ate as the men did in the city at lunch time and then went home at night. It certainly affected the digestion and powers of assimilation. Early in life he had trouble with the lower part of the rectum, which was operated on; there were hæmorrhoids and some stricture of the rectum, which he seemed to have recovered from. About ten or fifteen years ago he suffered with a peculiar inability to retain his urine, and it was necessary for him to urinate very often. He could not attend a lecture or a sermon of an hour's duration without leaving to empty his bladder. That went on for a long time and was not benefited by any kind of treatment. He was sent to a number of physicians in consultation, and finally to Dr. Lewis A. Stimson, who agreed with the speaker that the man was prematurely old; that he had a sixty-year-old prostate instead of a thirty-year-old one. The last three or four years he improved enough for him to hold his urine for perhaps an hour and a half to two hours at a time. Three years ago last spring he was married, had a healthy child, and the speaker did not see much of him till the 24th of April last. Up to that time he was working regularly and had lost no time in his business. This showed the rapidity with which the disease worked on the man after it had got hold of him. Previous to this he had been growing weaker. Last summer he would come home from business very much exhausted, and he neglected to mow the lawn, and do many things around the house which he would naturally do. In the fall he was feeling rather weak and began taking cod-liver oil with apparent benefit. He consulted a doctor there on the 1st of February, who put him on tonics, and on the 24th of April he came to see the speaker, who had not seen him for two years. His temperature was 101.8° F.; pulse, 160; startlingly anæmic and short of breath; walking from the office to the corner, half a block, fatigued him very much. A specimen of his blood was analyzed with the report as given by Dr. Taylor. He was given an iron tonic, and in another week a second examination of the blood was made at the laboratory, which showed an apparent improvement. That, however, was undoubtedly not due to medicine. The 5th of May he was in to see the speaker, and on the 7th saw Dr. William H. Thomson in consultation. He then went home, took to his bed, and never left it, dying on the first day of June. From the 24th of April, the last day he was at business, he grew rapidly worse till his death, which occurred a little over a month from the time he had actively engaged in business. There was no question that he ought to have left business before that. At the time he took to his bed he had a great deal of pain in his back that kept him restless, and was relieved by opium suppositories. That entirely passed away in a week. For the first two weeks after going to bed he seemed very short of breath, required fanning all the time, and his pulse ran up in the second week of his sickness to a point where it was difficult to count it with accuracy; but the speaker made out 180. This difficulty of breathing and gasping for air passed away and there was an apparent improvement in the man, although at times he had a mental cloudiness. A bunch of flowers had to be taken out of the room because he imagined they were faces. He knew better, but could not restrain his imagination. About a week before he died he was in a semicomatose condition, from which he rallied. His temperature went up at that time to 104°, but it maintained a general average of 102° F. The jumping up was only for a day. It was 102° F. the morning he died. He became entirely comatose about seven o'clock in the evening and died at eight o'clock the next morning in a comatose condition, and the transition from life to death was so easy that it was without a struggle, simply a lengthening of the intervals in the respirations until there were no more.

Examination of the Blood in Dr. T. K. Tuthill's Case of Pernicious Anæmia at Pœdiatrics Laboratory, May 3, 1899.—Dr. Fielding Lewis Taylor gave the following report of an examination of the blood in the case of pernicious anæmia:

Red blood cells, 2,200,000 to the cubic millimetre; white blood cells, 2,300 to the cubic millimetre.

On looking at an unstained spread, I was at once struck by the great variation in the size and shape of the red blood-corpuscles, racket-shaped and oval forms being very numerous. Macrocytes and microcytes were also present in abundance. The paucity of white blood cells was very noticeable. Blood smears raised to 150° C. in an oven and stained with Ehrlich's triple stain showed great irregularity in the staining properties of the red cells; the majority, however, were of a darker color than one accustomed to this stain would have expected in blood containing so small a number of red cells. Polychromatophilous cells were frequently encountered. The leucocytes were so scanty that it took considerable time to make the following differential count of about two hundred cells. The result was as follows: Polymorphonuclear leucocytes, 113—fifty-eight per cent.; small lymphocytes, 49, large lymphocytes, 25—thirty-eight per cent.; eosinophiles, 6—three per cent.; myelocytes, 1—0.5 per cent.

While making this count there were noted six nucleated red cells as follows: Megaloblasts, 3; normoblasts, 2; microblasts, 1.

The *diagnosis* was from chlorosis by the marked number and degree of degenerative changes, the number of megaloblasts present and the fact that they exceeded the normoblasts, and by the good color of many of the cells.

The marked enlargement of the liver and the extreme pallor suggested at first malignant disease. That it probably was not such a secondary anæmia we may conclude from the fact that the number of white cells was much smaller than normal instead of there being a leucocytosis, as often occurs in malignant disease. Also, instead of there being an increase in the proportion of polymorphonuclear leucocytes, we find here a diminution. The fact that the megaloblasts exceeded the normoblasts in number is also regarded as strengthening the diagnosis.

Typhoid Fever with Two Relapses.—Dr. R. C. Newton showed the fever chart of a patient who had suffered two relapses in typhoid fever. The case ran over ten weeks—from the 3d of December to the 13th of February. The speaker saw the case in consultation. There was nothing peculiar about it, except these three distinct runs of typhoid. The child was fed at times on raw eggs. He did not know whether that had anything to do with the continuance of the fever, but would hesitate about giving raw eggs in typhoid. The patient recovered.

Some Practical Remarks on the Clinical Examination of the Blood.—Dr. W. N. Berkeley read a paper on this subject.

The President (Dr. William L. Stowell) said he knew there were several present who were especially interested in blood examinations and had done a great deal of work in this line.

Dr. T. S. Southworth said he was much interested in Dr. Berkeley's paper and the very clear way in which he put this question, not confusing it with details difficult to understand by those not working practically in the laboratory. He was glad to hear the doctor speak of one or two points: One, the particular value of fresh-blood slides in the diagnosis of malaria. There was a general feeling that it was necessary to make smears and stain them at some length. Some time ago he found that they might be readily prepared at the bedside of the patient, and, particularly if the edges of the cover glass were smeared with vaseline, they could be carried for an hour or longer, and were usually in excellent condition. The beginner was less likely to mistake the plasmodium as it appeared in fresh blood than in stained specimens. The staining of the blood plaques with methylene blue might mislead one not familiar with the third corpuscle, especially when one lay upon a red cell, and extraneous matter which took up the methylene blue might also lead to confusion; but the appearance of the plasmodium in fresh blood was characteristic and nothing else could give the same appearance. He was also glad to hear Dr. Berkeley say that in his experience, in cases which he examined on the off day in tertian malaria, he was only able to find the plasmodium in about two thirds of the cases; that had been the speaker's own experience—perhaps rather less than two thirds. There was an impression that the plasmodium could be found in every case if one hunted long enough. That, of course, was true in working under the most favorable circumstances in the hospital, and perhaps by the bedside, immediately before or about the time of the chill; but certainly for the ordinary clinical observation, such as the busy practitioner could make, the percentage of cases in which one obtained definite positive results was smaller than one would suppose from some of the text-books. This, however, did not affect the value of the test, for, when the plasmodium was found, the diagnosis was positive.

Mr. David H. Baldwin said that his experience in staining the plasmodium was not very satisfactory in using methylene blue, as he found difficulty in getting the proper kind of methylene blue to stain the plasmodium. Examining fresh blood was the most satisfactory, as there one found the living plasmodium that could not be mistaken for anything else.

Dr. W. L. Baner said he had hoped that Dr. Berkeley and Dr. Southworth might touch on the other methods of fixing the cover slips besides the use of heat. In the laboratory, where the thermostat was available, one could be sure of results sufficiently constant to be valuable, but in the office using heat was different. Of course, in staining for plasmodia the alcohol and ether combination was largely used, but the speaker referred to the fixing preparatory to using the Ehrlich triacid stain. He would like to ask if either of the gentlemen had been able to get any good results with chromic acid or other fixing reagents, or with the single-solution fixing and staining fluids, such as Jenner's. He believed that work in this direction was greatly to be desired and would much simplify the subject, as it certainly was almost impossible for the general practitioner to use the heating methods.

Dr. Adolph Rupp said he would not have participated in the discussion if Dr. Berkeley had not used the expression "old slipshod methods of clinical examination." He affirmed that the old clinical methods of examination had not as yet become antiquated, and, although they might sometimes be inadequate or uncertain, they really did not deserve to be called slipshod. On the other hand, laboratory assistance was not to be pooh-poohed, but deserved all the recognition it was getting at the hands of clinicians. Laboratory work was special work, which often demanded the training and time which were not within the control of a busy practitioner. And, besides, the function of the laboratory expert was not always to make, but often to confirm, a clinical diagnosis. However special and important laboratory methods might be and were, we should not forget that laboratory workers often differed as to the best methods of examination as well as sometimes in their findings, and that, since both laboratory and clinical methods of examination were questions of methodized sense perceptions primarily, clinical methods of examination were as scientific and as little slipshod as laboratory methods.

Dr. Berkeley showed a stained smear from the spleen of a patient who died of æstivo-autumnal malaria. In the specimen there was a vast quantity of loose pigment, with many ovoids, crescents, and segmenting bodies. These last were difficult to get in our climate, as the cases were relatively rare. In respect to finding the plasmodium on the "off day," he believed with Dr. Southworth that it was simply a question of looking long enough. The organisms were easy to find just before or just after the paroxysm and harder at other times. He rarely found a tertian parasite on the "off day" except by making two or three spreads and giving perhaps a half or three quarters of an hour to the examination. Dr. Solley, who did this work at the Presbyterian Hospital, had told the speaker that when he had the time he never failed to find tertian parasites in the proper cases. The failure to find the parasite on the "off day" was indecisive. As regarded the fixing of the films, the methods varied a great deal with different authors and the purposes in view. The most satisfactory method he knew of was the one mentioned, suspending the slide or cover glass in the mouth of a wide-necked bottle in the bottom of which a forty-per-cent. formaldehyde solution had been put; this would fix the blood thoroughly in two minutes and a half.

The Present Status of the Serum Test as an Aid to Diagnosis in Typhoid Fever.—Dr. Arthur R. Guerard read a paper on this subject.

Dr. Rupp said he was pleased to hear Dr. Guerard, a representative of the health board, read so clear and temperate a paper. One important fact not particularly mentioned by Dr. Guerard was that this test gave positive results in cases of meningitis, both tuberculous and epidemic; and, when typhoid fever and meningitis were occurring at the same time, this test alone could not be counted on to settle the diagnosis. This test at best was a useful aid to diagnosis at times, but not a positive or specially pathognomonic sign of typhoid fever at all times.

Dr. Newton stated that Mr. Baldwin had made the Widal test for him in all cases of suspected typhoid for the last two years, and the result had never been misleading. If the result was negative the fever had turned out not to be typhoid, and where there was a positive reaction the case had proved to be typhoid. There was one interesting point he had recently noted —viz.: If the reaction was decided and prompt and could be obtained early in the course of the fever, the case proved to be mild; where there was a lagging and tardy reaction, the course of the fever was long. In the case he had already reported that evening, the reaction was indistinct and tardy, and the child was remarkably slow in getting well. She had a fever running from the 3d of December to the 13th of February, and nothing that he could detect in the treatment or the surroundings kept that fever up, unless it was the fact that the doctor who attended the child varied the milk diet with raw eggs. The speaker thought that he had seen bad results from raw eggs in two or three other cases of typhoid. Last year a young lieutenant came back from Cuba with the disease. His blood responded immediately and promptly to the Widal test, and in two weeks he was pretty well over his fever. Another quite recent case was that of a nurse who had been attending a case of typhoid and had contracted the disease herself. In this case also the reaction was strong and came in the first week of the fever. The nervous symptoms were pronounced, and Dr. Newton feared that he would lose his patient and a very good nurse; but when the reaction was so prompt he felt encouraged and hoped for a mild run of fever and a speedy convalescence—and so it turned out. The fever left, not to return, at the end of fourteen days, and the convalescence was excellent. So far as he knew, the prognostic value of the Widal test had never been spoken of. He thought that where there was enough resisting power in the blood to give an early and prompt reaction by killing the germs in the culture, it was evident that the patient had a better fighting chance against the fever than where this power was feeble and was developed late in the disease, perhaps not until the fourth week. Unfortunately, his observation of the varying intensity of the reactions under the Widal test had only extended over six or eight cases—a rather slender foundation, perhaps, for so broad and weighty a superstructure. He therefore hesitated about attaching too much importance to his own conjecture. However, Mr. Baldwin had arrived at the same conclusion in respect to the prognostic significance of a prompt or a tardy reaction of the blood when submitted to the Widal test; and the speaker urged all present to be on the watch for the coagulating power of the blood of fever patients, when submitted to this test, as the point was of great clinical interest and its investigation might throw considerable light upon the ætiology and clinical history of this widespread disease.

Dr. Baner said that he was inclined to agree with what Dr. Newton had said. He had a patient just convalescing from typhoid fever whose case seemed rather corroborative. The patient had been at the Jeffries-Sharkey prize fight, which occurred on a Friday night, and was feeling fairly well. On Saturday morning he complained of pain in one side of the head and of feeling chilly and miserable. On Sunday he was worse, and on Monday sent for the speaker, who found him with a temperature of 103° F. On Tuesday a specimen of blood was sent to Dr. Guerard, who reported a decided and prompt reaction. It was several days before any eruption appeared. The patient had had a typical but mild form of typhoid, lasting four weeks, and was making a prompt and good recovery. Cases like this certainly gave one the feeling that the reaction was one of protection or immunity rather than of infection.

Dr. Guerard said that unfortunately in the health department they could not always follow the cases they had under examination. It was quite an interesting point, that with regard to the strength of reaction, and if they had the history of the cases and could follow them, it would be a good point to bring out. So far as their experience went, the strength of the reaction did not seem to have anything to do with the character of the case.

(*To be concluded.*)

Letters to the Editor.

THE COUNTING OF A RAPID PULSE.

Pekin, Ill., *April 17, 1900.*

To the Editor of the New York Medical Journal:

Sir: If you find it interesting enough for publication please give the following communication a place in your journal under whatever heading you want.

The fact that the mentioning in your journal of

March 3d of a pulse of 180 has elicited a discussion as to the possibility of counting a pulse of that rapidity seems to prove that it must be of rather infrequent occurrence. I agree with Dr. Sheffield that it is quite easy without a "special instrument" to count a pulse of 180, and I want to add that I once had the opportunity of observing a pulse of 200 for a period of six hours, and of counting it, and that I found no difficulty in doing so.

I mentioned that fact incidentally before the Peoria Medical Society, and had the satisfaction to hear from a member of that body that he had made a like observation that same day on a patient supposed to be dying from appendicitis.

It is interesting that my case was one of appendicitis, too. The patient had been presenting all the usual symptoms of that affection for about ten days, and was never in immediate danger, when I was called to see him one day at noon and found him in a state of semicollapse, with pronounced facies hippocratica, considerable anxiety, no fever, and a pulse of 200. Although very weak, the pulse could distinctly be felt and counted at the wrist; besides, I counted the apex beat in order to exclude any mistake. I ordered a strong infusion of digitalis and strong wine in abundance and saw him again at 5.30 P. M., when his pulse was the same, but the expression of the face was somewhat better. The stimulants were kept up during the night, and the next morning the pulse was down to about normal.

Examination revealed the tumefaction in the region of the appendix considerably enlarged and more diffuse than before. Without doubt, the grave situation the day previous was caused by the sudden development of peritonitis, which, happily, became localized. A few days afterward, while gently manipulating the swelling, I could see and feel it almost entirely disappear under my fingers. It had ruptured into the bowel. The patient recovered entirely and speedily.

WILLIAM NIERGARTH, M. D.

Book Notices.

The Treatment of Diseases of the Nervous System. A Manual for Practitioners. By JOSEPH COLLINS, M. D., Professor of Nervous and Mental Diseases in the New York Post-graduate Medical School, etc. New York: William Wood & Co., 1900. Pp. xiv–602. [Price, $5.]

THROUGHOUT the general medical profession the opinion seems prevalent that the treatment of nervous diseases is in many cases futile, in many others unnecessary, and that what is to be said about it might easily be compressed into a small duodecimo volume. Such views are as disastrous as they are erroneous. To combat them there has long been the need of a monograph to call general attention to the methods and results of treatment. Such a book should emphasize the necessity for the prevention of the diseases in question and the means through which prevention might be hoped for. It should contain a careful study of causes, and it could hardly go into too great detail in regard to the measures by which the essentially incurable diseases may be made more bearable, or in regard to those by which functional disorders may be cured.

It is along these general lines that the volume now before us is written. It is planned as follows:

Part I. Causes and prevention. Part II. The general application of remedial measures. Under this heading are grouped drugs, hydrotherapy, electrotherapy, massage, exercise, rest and occupation, diet, and psychotherapy. Part III. Treatment of the diseases of the nervous system. In this part also ætiology is discussed, and a sketch is given of symptomatology.

The descriptions of the various remedial measures is gone into at some length. The author apparently values electricity more highly than massage. He discountenances the elaborate technics advocated by the special writers on hydrotherapy. The discussions of the causes and symptoms of the individual diseases are excellent. It is in these sections especially that the author shows the firm grasp he has of his subject. The accounts of the treatment of individual diseases are good, though less detailed and varied than one might wish or be led to expect from the size of the volume. The work throughout is uneven. For example, the chapters on abscess of the brain and tumors of the brain could hardly be improved on. But, on the other hand, the important question of the operative treatment of compression myelitis from injury is dismissed with the ungarnished statement that "fracture of a vertebra followed by symptoms of compression requires exploratory trepanation in every instance." In the treatment of bulbar palsy no mention is made of the stomach tube. There is no adequate description of the treatment of lead intoxication, or of tendon transplantation in infantile cerebral palsy. The great merit of the book consists in this, that the dominant note through it all is that there is no one specific remedy, no single remedial agent, but that the successful treatment of nervous diseases implies a study of causes and of the individual, and a judicious selection and combination of a variety of therapeutic measures.

The writer of this review believes firmly that much can be done for nervous diseases, both by way of alleviation and by way of cure. He believes also that there would be less talk of failures if general practitioners who treat nervous diseases would familiarize themselves more fully with the pathology of the nervous system and with the possibilities and limitations of the treatment of its disorders. To furnish such information Dr. Collins's book is well qualified.

Claude Bernard. By MICHAEL FOSTER, M. A., M. D., D. C. L., Professor of Physiology in the University of Cambridge, etc. New York: Longmans, Green, & Co., 1899. Pp. xi–245.

Hermann Ludwig Ferdinand von Helmholtz. By JOHN GRAY M'KENDRICK, M. D., LL. D., F. R. SS. L. and E., Professor of Physiology in the University of Glasgow, etc. New York: Longmans, Green, & Co., 1900. Pp. xvi–299. [Price, $1.25.]

THE earlier volumes of this series of *Masters of Medicine* have been devoted exclusively to British masters, and, while we do not in the least question the claims that these men have had to fame, it is with a sort of relief that we now come upon the biographies of two who were of other nationalities. These two, Bernard and von Helmholtz, indeed, are fit subjects for volumes of great interest, and such are those before us.

The lives of the great physiologist and the great physicist ought not to be discussed in a few words; yet, with the space at our command, we can speak of them only with the greatest of brevity. We can assure our readers, however, that the reading of these two works will afford them very great pleasure and, we think, not a little profit. As literary productions, they are greatly to be admired.

Consumption and Chronic Diseases. A Hygienic Cure at Patient's Home of Incipient and Advanced Cases. A Popular Exposition of the "Open-air Treatment," with Latest Developments and Improvements. By Emmet Densmore, M. D. New York: The Stillman Publishing Company. Pp. v–198.

Primarily this little work deals with the open-air treatment of tuberculosis, in which the elements are fresh air, overfeeding, and rest. These, as our readers know, have found a most successful application in the systematic treatment conducted at Nordrach. So much has been heard of late of this most efficient treatment that the book before us can not but have a welcome, especially in view of the fact that it is "a popular exposition." We have been particularly interested in reading the chapters upon diet, and find in them much to value. Our appreciation is, indeed, the greater because of the dietetic confusion that has assailed us of late; as between the advocates of nitrogenous food and of non-nitrogenous food, the truth-seeker and perhaps the sufferer are like to be rushed to an end. The book will be a help to the confused, we feel sure, and among that class we most regretfully include ourselves.

BOOKS, ETC., RECEIVED.

A Cyclopædia of Practical Medicine and Surgery. A Concise Reference Book Alphabetically Arranged of Medicine, Surgery, Obstetrics, Materia Medica, Therapeutics, and the Various Specialties, with Particular Reference to Diagnosis and Treatment. Compiled under the Editorial Supervision of George M. Gould, M. D., and Walter L. Pyle, M. D. Philadelphia: P. Blakiston's Son & Co., 1900. Pp. x–1018.

Diseases of the Genito-urinary System. A Thorough Treatise on Urinary and Sexual Surgery. By Eugene Fuller, M. D., Professor of Genito-urinary and Venereal Diseases in the New York Post-graduate Medical School, etc. New York and London: The Macmillan Company, 1900. Pp. ix–774. [Price, $5.]

Twentieth Century Practice. An International Encyclopædia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by Thomas L. Stedman, M. D. In Twenty Volumes. Volume XIX. Malaria and Microbes. New York: William Wood & Co., 1900. Pp. iv–4 to 828.

The Medical Diseases of Childhood. By Nathan Oppenheim, M. D., A. B. (Harv.), Attending Physician to the Children's Department of Mount Sinai Hospital Dispensary. With One Hundred and One Original Illustrations in Half-tone and Nineteen Charts. New York and London: The Macmillan Company, 1900. Pp. xx–653. [Price, $5.]

Clinical Lessons in Orthopædic Surgery. By Royal Whitman, M. D., Instructor in Orthopædic Surgery at the College of Physicians and Surgeons of Columbia University. Edited by George Alexander Saxe, M. D., and Abraham L. Wolbarst, M. D. New York: James T. Dougherty, 1900. Pp. 5 to 187.

Anæsthetics: their Uses and Administration. By Dudley Wilmot Buxton, M. D., B. S., Member of the Royal College of Physicians, London, etc. Third Edition. London: H. K. Lewis. Philadelphia: P. Blakiston's Son & Co., 1900. Pp. xvi–320. [Price, $1.50.]

Cause of Death in Chloroform Anæsthesia. By Joseph Muir, M. D., and Niel Dahl, Chemist, of New York. [Reprinted from the *Philadelphia Monthly Medical Journal.*]

A Contribution to the Surgery of the Common Bile Duct. By John E. Summers, Jr., M. D., of Omaha, Nebraska. [Reprinted from the *Journal of the American Medical Association.*]

Some Points in the Diagnosis of Traumatic Injuries of the Central Nervous System. By J. T. Eskridge, M. D., of Denver. [Reprinted from the *Journal of the American Medical Association.*]

Foreign Bodies in the Maxillary Sinuses, with a Report of a Case. By R. J. Wenner, M. D., of Cleveland. [Reprinted from the *Cleveland Journal of Medicine.*]

Stricture of the Œsophagus as a Complication and Sequel of Typhoid Fever. By John E. Summers, M. D. [Reprinted from the *Philadelphia Medical Journal.*]

What should be the Position of the Surgeon Relative to the Treatment of Appendicitis. By John E. Summers, M. D. [Reprinted from the *Western Medical Review.*]

The Justo-major Pelvis as a Factor in the Causation of Perineal Injuries. By Joseph B. Cooke, M. D. [Reprinted from the *Medical News.*]

La Pratique des accouchements. Obstétrique journalière. Par F. J. Herrgott. [Extrait des *Annales de gynécologie et d'obstétrique.*]

Miscellany.

The American Neurological Association.—The twenty-sixth annual meeting will be held in Washington, on Tuesday, Wednesday, and Thursday, May 1st, 2d, and 3d, under the presidency of Dr. Edward D. Fisher. The programme contains the following titles:

Christian Pseudo-science and Psychiatry, by Dr. Smith Baker; Imperative Ideas in the Sane, and their Management, by Dr. Edward B. Angell; A Case of Wernicke's Conduction Aphasia, with Autopsy, by Dr. Howell T. Pershing; A Case of Bullet Wound of the Spinal Cord, by Dr. Joseph Sailer; A Contribution to the Study of the Plantar Reflex, based upon Seven Hundred and Fifty Tests, made with Special Reference to the Babinski Phenomenon, by Dr. G. L. Walton; Tumor of the Superior Parietal Lobule, Accurately Localized, and Removed by Operation, by Dr. Charles K. Mills and Dr. W. W. Keen; A Case of Polio-encephalitis, with Autopsy, by Dr. Charles L. Dana; Autopsy of a Case of Adiposis Dolorosa, with Microscopical Examination, by Dr. F. X. Dercum; A Report of the Committee on Neuronymy, by Dr. Burt G. Wilder; Comments upon Current Figures of the Mesal Aspect of the Brain, by Dr. Burt G. Wilder; Studies in Astereognosis, by Dr. F. X. Dercum; A Case of Adiposis Dolorosa, with Autopsy, by Dr. Charles W. Burr; A Report of a Case of Progressive Muscular Atrophy, which Clinically Presented the Symptoms of Amyotrophic Sclerosis, by Dr. Joseph Collins; Amelioration of Paralysis Agitans by Means of Systematized Exercises, by Dr. J. Madison Taylor; Epilepsy and Auto-intoxication, by Dr. Smith Baker; The Anatomico-cytological Relationship of the Neurone to Disease of the Nervous System, by Dr. L. F. Barker; The Pathological Changes in the Neurone in Nervous Disease, by Dr. William G. Spiller; How Far does it Affect our Conception of Nervous Disease and its Treatment, by Dr. B. Sachs; The Physiological Significance of the Size and Shape of the Neurone, by Dr. H. H. Donaldson; Focal Cerebral Symptoms without Gross Anatomical Changes, as seen in (1) Uræmia and (2) Malaria, by Dr. James Hendrie Lloyd; A Case of Malaria presenting the Symptoms of Multiple Sclerosis, with Necropsy, by Dr. William G. Spiller; A Revised Interpretation of the Central Fissures of the Educated Suicide's Brain, exhibited to the Association in 1894, by Dr. Burt G. Wilder; Regeneration of the Cerebral Nervous System, by Dr. Joseph Sailer; Cases of Neurasthenia, by Dr. Philip Zenner; A Communication on a Comparative Study of the Spinal Ganglia in Various Diseases and Ages, by Dr. Adolf Meyer; Obstetrical Paralysis, by Dr. H. M. Thomas; The Therapeutic Value of Sunlight in Neurasthenic Invalidism, by Dr. Frank Hallock; A Report of a Case of Brain Injury, with Peculiar Whistling Spells following Operation, by Dr. William C. Krauss; Erythromelalgia and Allied Disorders, by Dr. B. Sachs and Dr. A. Wiener; A Case of Multiple Sclerosis, with Autopsy, by Dr. Charles W. Burr; A Clinical Study of the Reflexes, by Dr. Joseph Collins and Dr. Joseph Fraenkel; Clinical and Anatomical Analysis of Cases of Diffuse Myelitis, by Dr. James J. Putnam and Dr. E. W. Taylor; Section of the Posterior Spinal Roots for Relief of Pain in a Case of Neuritis of the Brachial Plexus; Cessation of Pain in the Affected Region; Later Development of Brown-Séquard Paralysis in the Area and of Pain in other Areas as a Result of Laminectomy, by Dr. Morton Prince; The Demonstration of a Few Reconstructions of Parts of the Nervous System, by Dr. Adolf Meyer; Two Cases of Tumor of the Spinal Cord, by Dr. John Jenks Thomas; Syringomyelia, with an exhibition of microscopical specimens, by Dr. Graeme M. Hammond; The Prognosis of Hysteria, by Dr. Joseph Fraenkel; The Relative Merits of *Metencephalon* and *Myelencephalon* as Designations of the Last (Oblongatal) Segment of the Brain, by Dr. Burt G. Wilder; The Derivatives and Applications of the Word *Neurone*, by Dr. Burt G. Wilder; Exhibition of Dr. Stroud's Head Rest for the Removal of the Brain, by Dr. Burt G. Wilder; Some Unusual Types of Dementia Paralytica, by Dr. Theodore Diller, and a Note on the Occurrence of Multiple Neuritis and Beriberi in Alabama, by Dr. E. D. Bondurant.

The Facial Expression of Fatigue and Violent Effort.—Dr. R. Tait McKenzie (*Science*, March 16th), at the recent meeting of the Association of American Anatomists, said that in fatigue, as observed in a foot race of a mile, we saw the following changes: The lips were slightly parted, the teeth open, eyes semiclosed, brows contracted, as in mental concentration, the upper half of the orbicularis acting with the corrugator supercilii. As the race proceeded, the lips were drawn down by the depressors and up by the levator proprius and zygomaticus minor. The corrugator acted strongly. As the respiratory need increased, the nostrils were dilated by the levator labii superioris alæque nasi, accentuating the expression of grief. This expression then passed away and the face became apathetic, the mouth gaped and the jaw dropped, the upper eyelid tended to droop. The lowering of the upper lid was counteracted either by throwing the head back or by bringing into action the occipito-frontalis. This gave rise to an expression of astonishment in the upper part of the face. In extreme exhaustion or collapse, the jaw dropped, the upper lid came down, and the face became expressionless. When a violent effort was made the expression came more nearly to correspond to that of rage.

The American Laryngological Association. — The twenty-second annual congress will be held in Washington, on Tuesday, Wednesday, and Thursday, May 1st, 2d, and 3d, under the presidency of Dr. Samuel Johnston, of Baltimore. In addition to the president's address, the programme contains the following papers:

Laryngeal Irritation a Cause of Asthmatic Paroxysms, by Dr. William L. Glasgow, of St. Louis; Fractures of the Nose, by Dr. T. Amory De Blois, of Boston; Atrophic Rhinitis, by Dr. J. E. Logan, of Kansas City; A Case of Ozæna of probably Sphenoidal Origin, by Dr. J. W. Farlow, of Boston; Recurring Membranous Faucitis due to the Bacillus of Friedlaender, with a Report of a Case, by Dr. Emil Mayer; On the Employment of the Upright Position in Ether Operations upon the Nose, Throat, and Other Portions of the Head, with an Exhibition of a Chair to Facilitate Such Operations, by Dr. Thomas R. French, of Brooklyn; Methods of Diagnosis and General Principles of Treatment, by Dr. John N. Mackenzie, of Baltimore; Methods of Treatment and the Statistical Results, by Dr. D. Bryson Delavan; The Surgical Procedures, by Dr. J. Solis-Cohen, of Philadelphia; Severe Hæmorrhage after Operations on the Throat and Nose. Report of Five Cases, by Dr. Arthur Ames Bliss, of Philadelphia; Secondary Hæmorrhage after the Use of Suprarenal Extract, by Dr. F. E. Hopkins, of Springfield, Massachusetts; Bullous Middle Turbinates—Two Cases of Benign Growths of the Larynx, by Dr. J. Payson Clark, of Boston; Fibroma of the Larynx, by Dr. A. B. Thrasher, of Cincinnati; Singular Exhibitions of Partial Paralysis of the Vocal Cords, due to Overuse of the Telephone, by Dr. Clarence C. Rice; A Case of Pin in the Larynx for Two Years; Removal by Endolaryngeal Methods, by Dr. A. W. de Roaldes, of New Orleans; A Peculiar Case of Migratory Foreign Body, with an X-ray Illustration, by Dr. D. Braden Kyle, of Philadelphia; Tracheal Injections in the Treatment of Pulmonary Tuberculosis, by Dr. T. Morris Murray, of Washington; Correction of the Deviations of the Nasal Sæptum, by Dr. John O. Roe, of Rochester; Angeioma Cysticum of the Nose—Histological Analysis and Physiologico-chemical Research of its Contents, by Dr. Henry L. Wagner, of San Francisco; The Surgery of the Turbinal Bodies, with a New Method of Operating, by Dr. J. E. Boylan, of Cincinnati; Dermoid Cysts of the Nose, by Dr. Herbert S. Birkett, of Montreal; Supplementary Report on a Recurrent Tonsillar Tumor, by Dr. R. P. Lincoln, and Hæmorrhage from a Peritonsillar Abscess, by Dr. Walter F. Chappell.

An Anecdote of Surgeon-General Sternberg.—The *Sun* recently quoted the following from the *Chicago Record:*

Surgeon-General Sternberg, of the army, says that when he was going into the battle of Bull Run the Irish sergeant-major of his regiment came to him with a big bag of gold coin weighing three or four pounds and said:

"Doctor, I know that I'm to be kilt entirely an' I want you to take care of this money an' see that it gets to the ould folks at home."

There was no time to remonstrate, or make any other arrangement, and dropping the bag into the surgeon's lap, the Irishman hurried away to his place at the head of the column. All through two bloody days Dr. Sternberg carried that bag of gold with his surgical instruments, and it was a burden and embarrassment to him. He tried to get rid of it, but couldn't find any one willing to accept or even to share the responsibility, and he couldn't throw it away for the sake of the "ould folks at home."

Toward the close of the second day the surgeon was taken prisoner. He lost his surgical instruments and his medicine case, but clung to the gold, and, making a belt of his necktie and handkerchief, tied it around his waist next to his skin to prevent its confiscation by his captors. During the long, hot, and weary march that followed, the gold pieces chafed his flesh, and his waist became so sore and blistered as to cause him intense suffering, but he was bound that the "ould folks at home" should have the benefit of that money, and by the exercise of great caution and patience, managed to keep it until he was exchanged with other prisoners and got back to Washington. There he found his regiment in camp, and one of the first men to welcome him was the Irish sergeant-major, who was so delighted to learn that the doctor had saved his money that he got drunk and gambled it all away the first night.

The Jacobi Dinner.—We learn from the committee of arrangements that gentlemen who have not received application blanks may apply for them by addressing Dr. A. G. Gerster, chairman, P. O. box 3032, New York. The dinner is to be given at Delmonico's, on Saturday evening, May 5th.

The Only Woman Physician Allowed to Practise in the Turkish Empire returned recently, according to the *Evening Telegram* for April 21st, to this country from Syria in the person of Dr. Mary Pierson Eddy. She is said to have founded the only ophthalmic hospital in Syria, and to have traveled from one end of the country to the other, penetrating far into the interior with only Syrian attendants, rendering surgical aid to Bedouin encampments, Circassians, and Turcoman tribes.

The Mount Sinai Hospital Dispensary.—On Saturday, April 21st, a dinner was given to Dr. Edward J. Messemer by the staff of the Mount Sinai Hospital Dispensary, to celebrate the completion of the twenty-fifth year of his connection with that institution. Over thirty gentlemen sat down to the table, at which Dr. Henry S. Stark acted as toastmaster. Toasts were responded to by Dr. G. Mannheimer, Dr. M. Rosenberg, and Dr. N. Oppenheim. Original verses apropos of the occasion were read by their authors, Dr. S. M. Brickner and Dr. Rheinthaler. Dr. Messemer responded in felicitous terms, giving a history of the dispensary from its organization to the present day.

The Medical Fraternity of Omega Upsilon Phi established on April 12th, at the medical department of the University of Cincinnati, a chapter with twenty-one charter members. The fraternity was organized at the University of Buffalo, in November, 1894, and is confined to medical students and practitioners. The chapter roll at present includes the University of Buffalo, the University of Denver, the New York University, the University of Cincinnati, and Trinity University, of Toronto, Canada, together with three graduate or alumni chapters.

The Western Ophthalmological and Otolaryngological Association held its fifth annual meeting in St. Louis on the 5th, 6th, and 7th of April. The president, Dr. W. Scheppegrell, of New Orleans, opened the meeting with a paper on The Rise of Specialism, in which he controverted the oft-repeated charge that specialism in medicine was a modern innovation. He cited historical data dating several centuries before Christ in which distinct references were made to specialists in diseases of the eye, of the stomach, and of the head. He commended specialists in medicine, as they promoted more detailed study and thereby led to higher attainments.

Dr. J. W. Bullard, of Pawnee City, Nebraska, read a paper entitled Two Classes of Eye Cases that Give me a Great Deal of Trouble. Chief among them were those in which irritation and dryness of the conjunctiva persisted in spite of every attempt to correct errors of refraction.

Dr. Edwin Pynchon, of Chicago, in a paper entitled Slight Irregularities of the Nasal Sæptum, advocated the removal or correction of such irregularities when there were disturbances of the nasal functions on account of their presence.

Dr. C. R. Holmes, of Cincinnati, read a paper on Foreign Bodies of the Orbit, with a Report of Cases. The most interesting case reported by the author was one in which a knife blade about an inch and a half long had been in the orbit thirty-two years without causing much inconvenience. It was imbedded in a fibrous capsule and was but slightly rusted.

Dr. B. E. Freyer, of Kansas City, read a paper on Railway Trauma of the Eye, with the Report of a Case and its Legal Aspects.

Dr. M. A. Goldstein, of St. Louis, presented several cases of primary tuberculosis of the ear and of the larynx.

Dr. William L. Ballenger, of Chicago, read a paper on The Physiological Tests of the Organ of Hearing as Aids in the Differential Diagnosis of Lesions of the Ear. While these tests were not absolute guides to a correct diagnosis, they were, he said, together with all other means of diagnosis, the best at our command, and should invariably be used.

Dr. O. J. Stein, of Chicago, reported a case of symmetrical, or double, osteoma of the nose, occluding the nasal chambers and extending to either side for a considerable distance, whereby the patient was given the typical frog-face appearance.

Dr. John J. Kyle, of Indianapolis, read a paper on Sympathetic Inflammation and Sympathetic Irritation of the Eye.

Dr. Adolph Alt, of St. Louis, read a paper entitled Studies concerning the Anatomy of the Eyelids, especially their Glands. The purpose of the author was to report the result of an extensive examination made of the tissues of the eyelids in which he had found mucous glands located in positions where they were not usually found. He also stated that in all his examinations, with one exception, the tarsal cartilages had not been found to be of true cartilaginous tissue.

Dr. H. W. Loeb, of St. Louis, showed one hundred and seven polypi removed at one sitting. They were uniformly pedunculated and varied greatly in size. They had been removed with an electro-cautery snare devised by the author.

Dr. J. O. Stillman, of Indianapolis, read a paper entitled Removal of the Middle Turbinate for the Cure of Some Forms of Inveterate Eye Disease, in which he reported his observations as to the relationship of nasal and eye diseases and the results he had obtained in allaying eye symptoms by the treatment of nasal conditions, more especially the removal of the turbinate.

Dr. Goldstein, as chairman of the local committee of arrangements, had arranged for a museum of pathological and anatomical specimens.

The officers elected for the ensuing year were as follows: President, Dr. M. A. Goldstein, of St. Louis; vice-presidents, Dr. Würdemann, of St. Paul, Dr. C. R. Holmes, of Cincinnati, and Dr. Fayette C. Ewing, of St. Louis; treasurer, Dr. W. L. Dayton, of Lincoln, Nebraska; secretary, Dr. W. L. Ballenger, of Chicago. Dr. C. R. Holmes was made chairman of the local committee of arrangements for the meeting to be held next year in Cincinnati, and Dr. Loeb, of St. Louis, chairman of the membership committee.

The New York Genito-urinary Society has been organized with the following officers: President, Dr. Ramon Guitéras; vice-presidents, Dr. Winfield Ayres and Dr. Otis K. Newell; treasurer, Dr. George W. Blanchard; secretary, Dr. A. D. Mabie; corresponding secretary and stenographer, Mr. Samuel Bennett, 161 Garfield Place, Brooklyn, from whom information as to terms of membership, etc., may be obtained. It is intended to confine the membership to medical men engaged in active clinical work in connection with one branch or another of the specialty. Meetings will be held monthly, when cases will be reported and papers read. Correspondence is invited from specialists in other parts of the country and abroad.

The Examination of School Children's Vision.—According to the *Chicago Medical Recorder* for April, a department for examination of the eyes of Chicago public-school children has been added to the child-study system of the Board of Education. Hereafter parents of children with defective vision are to be warned of the possible danger thereof to their children. A similar rule was made two years ago, but has not up to the present time been strictly enforced.

Public Recognition of the Military Medical Services in South Africa.—According to an editorial in the *Lancet* for March 31st upon the recent debate on the army estimates in the House of Commons, the medical profession has every reason to be satisfied with the tone and spirit manifested on the occasion and with the eulogistic terms in which the services rendered by the Royal Army Medical Corps and by the civil consulting element during the present campaign were recognized. Dr. Farquharson was able to declare that the army medical service had not been made the subject of a single complaint throughout the war operations in South Africa and that the more they heard of what was going on at the front the more they were filled with admiration for the pluck, devotion, and skill which had been displayed and the hard work which had been successfully carried out by its officers. Mr. Price said that the medical profession had done honor to itself and to the country during the war, and he added that he had the more pleasure in saying this because he had prognosticated an evil condition of things in connection with the army medical corps. Many members spoke in a similarly eulogistic strain, while there were no dissentient voices to the proposition that the Royal Army Medical Corps had done admirable work.

The Late Dr. W. MacNeill Whistler.—The *Journal of Laryngology, Rhinology, and Otology* for April reproduces from the *British Medical Journal* a most appreciative obituary notice of Dr. W. MacNeill Whistler, who died in London on February 27th at the age of sixty-three. It was while Dr. Whistler was in England as a medical officer of the Confederate army bearing dispatches that the downfall of the Confederacy changed all his plans, and ultimately led to his taking English qualifications and settling in practice in London as a laryngologist. He became one of the physicians to the Throat Hospital in Golden Square, London; and when, owing to some differences between the staff of that institution and the late Dr. Morell Mackenzie, the London Throat Hospital was founded, Dr. Whistler, as one of six or seven seceding physicians, took part in the foundation of the latter hospital, and was to the time of his death its senior physician. The following remarks of the writer of his obituary notice are a well-deserved tribute to the man, and should be gratifying to us as showing the respect and affection which one of our own physicians earned among his British *confrères:*

"Dr. Whistler was a man of singularly lovable character; it was impossible to come within the range of his personal influence without feeling his power of attraction. He had a delightful gift of quiet humor, and his varied experiences of life and wide knowledge of men and cities supplied him with a wealth of amusing stories, which he told with great effect. He was a man of wide intellectual interests and had a highly cultivated taste in art. His very oddities—the slowness in his speech and the extreme deliberateness of all his movements—which in another man might have been irritating, somehow added to Whistler's charm. Of the attachment felt for him by patients a remarkable proof was given two or three years ago. Four of his old comrades in his campaigning days, who had benefited in one way or another by his skill, sent him their photographs in a group, with a letter testifying to their ever-living gratitude to their skillful surgeon. The feeling must have been deep which thus found expression after thirty-three years.

"Among his professional brethren Dr. Whistler was held in the highest respect, both for his intellectual powers and for his perfect integrity. His name was honored by laryngologists throughout the world, but it never came prominently before the public. He lacked the 'pushfulness' which is supposed to be characteristic of his countrymen, and, indeed, he hated the 'public means which public manners breeds.' His death has robbed the profession to which he belonged of a most capable physician and a thoroughly honest man."

A United States Naval Surgeon Decorated by Venezuela.—The *New York Times* for April 19th states that according to the *Venezuela Herald* for April 19th, General Castro has decorated Surgeon William C. Braisted, of the *Detroit,* with the order of Bolivar for his distinguished and devoted services to the Venezuelan wounded at the taking of Puerto Cabello in November, 1899.

THE NEW YORK MEDICAL JOURNAL, MAY 5, 1900.

Original Communications.

GENERAL REMARKS ON
THE PATHOLOGY AND TREATMENT OF STRICTURE OF THE URETHRA.*

BY CHARLES GREENE CUMSTON, M. D.,
BOSTON.

GENTLEMEN: I have recently had occasion to show you two cases of stricture of the urethra, and it is my intention to-day to discuss the pathology and treatment of this interesting surgical affection. By the term stricture of the urethra we mean an acquired and permanent stenosis of the canal, resulting in a diminution of its calibre, due to pathological changes in the walls. From this definition it is evident that strictures of the urethra are pathological processes which are always dependent on the existence of some previous lesion which has been limited either to the walls of the urethra or to some portion of the genito-urinary system. It is also evident that the term stricture can not be applied to a congenital narrowing of the urethral canal, and in this case it would only be proper to term the condition a congenital stenosis.

A stenosis of the urethra which is produced by some acute infection, and which occurs during the course of the latter, can not be called a stricture, because this narrowing of the canal is simply temporary and will disappear as soon as the predisposing cause subsides, and is therefore not a permanent lesion, but only a process complicating the acute affection. . The pathological processes which are the ætiological factors of stricture are either a traumatism, a chemical irritant directly applied to the mucous membrane, or an infectious process. The diseases of the urethra which are produced by infectious processes are the most frequent fundamental causes of stricture, and of all gonorrhœa is the most prominent in this respect. This latter affection is so frequently the cause of stricture that of all cases that come under observation seventy to ninety per cent. may be traced back to a former gonorrhœa.

The other diseases of the urethra which may be causative factors in the production of stricture are the soft chancre, syphilitic and tuberculous abscesses, perforating periurethral abscesses, and non-gonorrhœal inflammation of the urethra, of which, you know, there are many varieties. All these lesions may, as I have said, without doubt produce stricture, but, considered as a whole, they play an unimportant part in the ætiology of this affection. Severe injuries resulting in stricture are, practically speaking, of rare occurrence.

On the other hand, stricture of the urethra produced by traumatism is more common, although far less so than that of gonorrhœal origin, and it is safe to say that about ten per cent. of all cases of stricture are produced by trauma. Now, if gonorrhœa stands first and foremost among the ætiological causes of stricture, traumatism certainly holds the second place, while the other causes already enumerated occasionally give rise to it. You will, however, from time to time meet with patients who certainly are afflicted with stricture who do not present either in their history or from the objective point of view any clews to the ætiology of their condition, and in these cases the origin of the stricture must naturally remain doubtful. As ætiological factors which might explain the presence of stricture in these obscure cases, some peculiar pathological causes have been recorded in medical literature from time to time, such as sexual excess, especially masturbation, an abnormal chemical composition of the urine, and constitutional diatheses, such as gout, rheumatism, and scrofula.

Regarding these alleged causes of stricture, I might say in the first place that urine of abnormal chemical composition may possibly give rise to the formation of stricture, as has been asserted by a number of competent English and German authorities. In certain cases where gonorrhœa or traumatism can not be found in the patient's history, Thompson calls attention to the fact that the patient may be afflicted by gout or present a remarkably acid urine. Otis, I believe, goes so far as to assert that those strictures occurring in gouty or rheumatic subjects are produced by the passage of an abnormal urine, and that the lesion is practically of the same character as that resulting from gonorrhœa or traumatism, and that in the case of the former they may only be distinguished by their more chronic course.

It is not easy to understand how an intensely acid urine can irritate the urethral mucosa to such an extent that a severe inflammatory process resulting in an extensive formation of exudate is set up, because the urine is only in contact with the mucous membrane for a very short time, while the mucous membrane of the bladder rarely reacts against a very acid urine, although, to be sure, the lining of the bladder is less sensitive than that of the urethra. We can much more readily understand that the mucous membrane of the urethra may be injured by the passage of gravel or a small calculus, and we all know that the uric-acid diathesis, with its extremely acid urine, is the one that gives rise to calculus formation.

The next class of odd ætiological factors comprises constitutional disturbances, and among these Thompson mentions scrofula, although he does not offer any proof for the correctness of his assertion. It is evident that other authorities assert that anomalies of the general constitution may produce stricture formation, yet we can not admit that this disease is guilty of producing strictures as long as no proof is given. As regards sexual excess being responsible for the production of stricture—and we can not deny that under certain circumstances excessive masturbation can produce certain phenomena of irritation in the urogenital apparatus—it may be said that Gross has spoken in favor of the fact that a large number of strictures may be produced by this unfortunate habit; but, on the other hand, we should remember the fact that it is most surprising, considering the frequency of such excesses, that they are very rarely if ever mentioned as ætiological factors of a stricture. This may possibly be due to the fact that observers have not been careful in obtaining the patient's avowal of this habit, but personally I must admit that it is with difficulty that I should be led to consider masturbation as an ætiological factor of urethral stricture. It would only be in those cases where nothing else could be found in the patient's history that sexual excess could possibly explain the production of stricture from this cause, and in these cases we really have a chronic hyperæmia of the urethral mucosa, which forms the basis for the development of stricture.

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* A post-graduate lecture, delivered January 8, 1900.

Now, if the remaining cases of stricture whose ætiology is so difficult to explain are not due to the above-mentioned causes, which I have endeavored to point out are practically valueless in themselves, I have certainly imposed a task upon myself of making an attempt to explain the probable cause of just these very cases. Bacteriology has given us an insight into those processes whose cause was formerly unknown. Inflammation of the urethra occurring in little boys is certainly in a large proportion of cases nothing more than an ordinary acute gonorrhœa, because the presence of Neisser's organism in the pus has been demonstrated. Just how the disease occurs in little boys is difficult oftentimes to find out, but it nevertheless does take place, although it may be of rather infrequent occurrence. As the disease runs the same course in children as it does in adults it may result in stricture later on.

The formation of gravel or uric-acid calculi in children is far from being infrequent, and should also be considered as an ætiological factor of stricture from their passage over the mucosa of the urethra, and there is no doubt in my mind but what a certain proportion of strictures met with in the adult, and where no good explanation is given for their presence, are probably due to this, and a careful inquiry into the patient's early history should be made in order to elucidate this point if possible.

Since the interesting researches of Engel have been published we know much more than formerly about congenital stenoses of the urethra, and on account of the difficulty in their diagnosis I desire to say a few words regarding them. These defects are practically nothing more than folds of the mucous membrane, which act like valves, thus impeding the passage of the urine. These valves form pouches which are either directed toward the bladder or toward the urethral orifice. The former are the only ones that are likely to interfere with the passage of urine, while the latter greatly hinder the passage of a catheter, and thus may lead to an erroneous diagnosis of stricture. Most frequently they are situated just behind the external orifice, and if the meatus is separated with the fingers they can be seen in the form of a thin, transparent membrane, very similar in structure to the hymen.

Congenital stenosis is also frequently found either behind or in front of the verumontanum, but is also infrequently found at other portions of the urethra. These valves may also become the starting point for the formation of diverticula. Their presence may be ascertained by the passing of an olive-pointed sound or by the endoscope.

Another congenital defect which sometimes occurs is a cylindrical stenosis, and is simply a narrowing of a certain portion of the lumen of the urethra; the defect includes the mucous membrane as well as the underlying connective tissue.

As regards the formation of these stenoses nothing very definite can be said at the present time, but they are apparently of very rare occurrence. To make a diagnosis it is necessary to have seen them with the endoscope, and here the method of exclusion is of no value in making a diagnosis.

As regards the pathogenesis of stricture of the urethra due to gonorrhœa, it may be said that our former erroneous ideas have been cleared up by the use of the endoscope and pathological researches. The gonorrhœal ulcer, which was formerly considered as a frequent lesion, is now known to be a very exceptional condition. On the contrary, a stricture is generally produced by a cell infiltration, which occurs more especially in the periglandular spaces and which later on undergoes a connective-tissue change. Strictures due to the process of cicatrization should be considered as rare.

Gonorrhœal stricture may be divided into two principal stages: First, the stage of exudation, in which the mucous membrane presents an inflammatory round-cell infiltration. It is thickened, hypertrophied, and at times granular, but it retains its normal red color. Secondly, we have the connective-tissue stage, which runs through the following stages of development: (*a*) It is first confined to the mucous membrane, which is thickened and of a pale hue. (*b*) The massing of connective tissue has extended to the surrounding soft parts, and if you palpate you will readily recognize that the urethra is surrounded by a stratum of connective tissue. This may be termed the callous stage. (*c*) The development of the connective tissue next enters into the stage of regression; the mucosa has lost its characteristic qualities, and the walls of the urethra are felt on palpation like a bit of thin, hard cord. This is termed the atrophic stage.

A traumatic stricture, of course, always presents cicatricial tissue, which is either confined to the mucous membrane alone or extends to the surrounding deeper structures, and in some cases may be so extensive as to choke up the urethra and the underlying tissues along a considerable extent of the canal. As to the proportion in the frequency between traumatic stricture and gonorrhœal stricture, it may be said that the former is relatively more frequent, but we see a far larger proportion of cases of gonorrhœal stricture, for the simple reason that gonorrhœa occurs far more frequently than traumatism.

The most frequent site of gonorrhœal stricture is the fixed part of the pars cavernosa—in other words, the pars perinealis, at the junction of the latter with the pars membranacea—then the pars cavernosa, while the pars membranacea itself is but very seldom attacked, while the pars prostatica is never the seat of stricture. Several strictures are rarely present, but when this is the case they are usually due to gonorrhœa.

Patients afflicted with stricture will always show changes in micturition, but these changes take place so very gradually that for some time the patient's attention will not be directed to them until they have reached quite a marked degree. Very frequently difficulty in emptying the bladder—which usually arises after violent efforts, riding or driving on bad roads, sexual excess, or the ingestion of liquors—is so slightly present, and disappears spontaneously or on taking a hot bath, that the patient forgets its occurrence when questioned by the surgeon.

We usually do not see these cases until the effort to empty the bladder becomes extreme and the stream of urine is very small and projected with little or no force, or it may be voided by drops. On the other hand, when the patient starts to urinate, the urine may first come away drop by drop, then flow slowly, and the act be finished by another series of drops. A very good question to ask these patients is whether they wet their boots. The urine will be found cloudy. When questioned, the patient will tell you that he has noticed all these symptoms as they developed, but that he did not pay much attention to them because he was never subject to pain.

No matter how much this symptom of change in the evacuation of urine will lead you to suppose that a stricture is present, it will in no way give any clew as to the seat or the extent of the lesion, because the force with which the bladder is emptied varies according to the amount of extensibility of the urethra; the bladder contractions increase in direct proportion to the amount of impediment present to the passage of the urine, and consequently, provided the stricture does not suddenly occlude the lumen of the urethra, a muscular hypertrophy of the bladder walls will result. This fact explains why in cases of traumatic stricture, which reach a very high degree in a short time, the bladder has not had time to undergo hypertrophy and has simply become distended, which is shown by the fact that it is in a state of functional insufficiency.

Now, from the fact that the urine trickles away after the bladder is emptied, we may naturally assume that behind the stricture the urethra has undergone dilatation and forms a pocket. Some patients will have learned to empty this quickly by pressing the urethra with the hand from behind forward. The dilatation is sometimes central. A continual trickling away of the urine occurs when there is a functional insufficiency of the bladder, and also in those infrequent cases where the obturators have become impaired by pathological changes; consequently, where the seat of the stricture is in the pars posterior. Temporary retention of the urine is very frequent in stricture, but complete retention very rarely occurs.

The ejaculation of the sperm is often very difficult, only takes place in drops, and very frequently is accompanied by pain, which the patient locates at the seat of the stricture. In more advanced stages of the affection it may happen that no sperm makes its exit through the meatus, but it flows directly back into the bladder, and is thence expelled with the urine later on. It goes without saying that these subjects are inapt for generation.

Secondary changes in other parts of the uropoietic apparatus will take place and depend entirely upon the length of time that the stricture takes in its development. Extension of the trouble to the portion of the urethra between the stricture and the bladder will occur, and Cowper's glands may become involved as well as the emunctories of the prostate, which may become inflamed and undergo suppuration. Infiltration of urine, the formation of fistulæ, and even death may result.

The changes in the bladder are either a dilatation and insufficiency from the very beginning of the trouble, or hypertrophy of the bladder walls, to which dilatation and insufficiency are finally added. Diverticula are then not infrequently found. The formation of connective tissue takes place in the bladder walls and there will be more and more residual urine, because the bladder becomes more and more incapable of expelling its contents. The ureters and the renal calices become dilated, owing to the back pressure of the urine; the renal tissue becomes atrophied, or the urine, which long since has become alkaline and contains pus, produces a suppurative process in the renal parenchyma. Finally, uræmic symptoms predominate, or the patient develops a particular form of neurasthenia with a strong tendency to hypochondria.

At the same time that the changes of the bladder and of the kidney occur the urine also undergoes certain alterations, which may be divided into two stages. In the first stage there exists a functional sufficiency of the bladder, and in the beginning the urine is practically not changed; but in direct relation to the increase of hypertrophy of the bladder, which is always accompanied by a hyperæmia of the mucous membrane of the organ, the urine takes on a catarrhal character, although it contains no pus. Its reaction is still acid, the specific gravity is normal, but it is cloudy, and after it has stood in a test glass for some time a thick deposit is formed, which does not dissolve by heating, and a tendency to alkaline fermentation is present. The pathological condition of the bladder is demonstrated by the fact that catheterization, if not performed with absolute surgical cleanliness, is at once followed by the development of an acute cystitis, which in all probability would not occur if the organ was perfectly normal.

In the second stage there exists a functional insufficiency of the bladder and there is residual urine after micturition. First, alkaline decomposition takes place in the bladder; the urine has an ammoniacal odor, pus is present, and at times a certain percentage of blood, and albumin will be found in direct relation to the amount of pus present. The sediment is thicker, pus cells are present, and carbonate of ammonium also.

Secondly, we have putrefaction of the urine in the bladder. The urine has a brown or greenish color and a very strong odor, and contains a considerable amount of albumin, hæmoglobin, and other abnormal constituents.

The usual symptoms of catarrh of the bladder are, of course, met with in addition to those to which the stricture itself gives rise, and the patient will present a certain amount of fever and more or less severe pain in the bladder. The mucous membrane of the organ is eroded and ulcerated.

As to those changes which take place in the kidney and which begin with a catarrhal process in the calices, their presence can only be surmised from the condition of the urine, provided that it is not in a state of decomposition, because in this case the renal casts are disfigured, so that microscopically they can not be diagnosticated.

The catarrhal process in the calices is then followed by a desquamative nephritis, which is indicated by the presence of epithelial casts in the urine, and then, after a while, the characteristic symptoms of interstitial nephritis make their appearance. Pain in the lumbar region is not infrequent, but much caution must be used if this symptom is taken for the diagnosis, and as an illustration I would here relate the following rather interesting case:

The patient was a man of fifty-one years who had contracted gonorrhœa about twenty years previously. A few years later symptoms of stricture made their appearance, and were treated successfully in the beginning by the use of bougies. For the last few years, however, the jet of urine had become smaller and smaller and the desire to micturate had become more ardent; finally, the urine became most offensive. About nine years ago the patient had for the first time chills and fever, which recurred frequently about every three months, but it was only during the last two months that these attacks became more frequent.

A fortnight before the patient was seen a swelling of the right testicle occurred which was very painful, and three days before had suppurated and discharged a certain amount of pus.

Examination revealed a slight œdema of the lower extremities and puffy eyelids. The urine had a very decided greenish-yellow color and a very putrid odor; the percentage of albumin was quite high. The right testicle was about the size of a large hen's egg and on the anterior aspect of the scrotum a large fistula was present, which led directly down into the testicle. What was remarkable, however, was that at this time there was hardly any elevation of the temperature. Examination of the urethra with metallic sounds revealed the presence of a stricture deep down in the perineal portion of the canal.

Free incisions were made to give exit to the pus, but the patient died about two weeks later. An autopsy revealed the following pathological conditions: There was a chronic bronchitis in the lower lobes with bronchiectasis, which was particularly evident in the lower lobes. The right kidney was absolutely riddled with small foci of suppuration. The left kidney was abnormally small and sclerotic. False membranes lined the calices. A perforation was found at the lower end of this kidney, which had given rise to a purulent collection the size of an orange under the peritonæum covering the organ. The bladder was hypertrophied, its mucous membrane was of a dirty gray color, and at several points tenacious false membrane was present.

Another case is that of a young man, twenty-five years of age, who had a congenital stenosis of the external orifice which gave rise to a chronic infiltration of the urine. Into the bargain was found a stricture in the perineal portion of the urethra. In this case the prognosis of course becomes more serious the longer the affection has been present, and consequently the greater will be the secondary changes. No matter how important the symptoms already mentioned may be, the certainty as to the presence and the seat of a stricture, its degree, and the amount of dilatation which may be obtained by instrumentation can only be ascertained by an objective examination, which is procured partly by the use of sounds and in some cases by the use of the endoscope.

There is no doubt that for the examination a cylindrical metallic sound is not the best one to use, for it must be of a calibre that just passes through a normal meatus, the average size of a normal meatus being about eight millimetres—in other words, a No. 24 Charrière. This is very evident, because even if one could hardly fail to notice a stricture that had already formed, this would certainly be the case with regard to those that were only developing, and you can see that it would be impossible to detect a stricture in the bulbous portion of the urethra which had already reduced the greatest limit of dilatation to three millimetres, so that the calibre would still amount to at least ten millimetres, and if a sound of eight millimetres were employed it would pass with ease. It is quite possible that a long experience might count for something in these cases, but a certain diagnosis of stricture in the stage of exudation can only be arrived at by means of the endoscope.

In the later stages, which are practically the only ones that come under observation, examination by means of a sound is quite sufficient. If you palpate the urethra at the point where the end of the sound has been arrested you can easily ascertain the location of the stricture. The degree of the stricture—that is to say, the amount of dilatability that it possesses, such as is found durng examination—is ascertained by passing the largest sound that will go through it. The length of the stricture is easily demonstrated by means of an olive-pointed sound, the largest size that will go through the stricture, so that when the instrument is withdrawn the length of the stricture can be approximately measured. Again, palpation will prove of service.

As to the diagnosis of the stage at which the stricture has arrived, it may be said that external palpation will give you all the indications required, because in the connective-tissue stage there will be a thickening of the urethra and the surrounding tissues, while in the atrophic stage the canal will feel like a thin and hard cord. The stage of exudation can only be diagnosticated by urethroscopy.

The diagnosis of a traumatic stricture scarcely ever gives rise to any difficulties.

Those strictures that allow the urine or a sound to pass through them are called permeable strictures; those which prevent the passage of urine or instruments, impermeable strictures.

(To be concluded.)

NITROUS OXIDE; ETHER; CHLOROFORM.

By S. ORMOND GOLDAN, M.D.

(Concluded from page 634.)

INDICATIONS FOR THE ANÆSTHETIC.—While in many parts of this country one anæsthetic is given almost entirely, to the exclusion of others, the best interests of the patient can never be promoted by such a plan. I have often conducted narcoses where first gas, then ether, then chloroform and ether were used successively, and so obviated the deleterious effects of the too long use of either anæsthetic. Those who use ether as a matter of routine notice certain cases in which chloroform, there being no special counter-indication, is preferable, as operations upon the brain—chloroform causes an anæmia; ether, a congestion and venous oozing; operations about the eyes, face, mouth, etc., as the anæsthetic, if necessary, may be administered with a tube or catheter, introduced through the nose or mouth; when a cautery is used about the face; conditions which interfere with normal interchange of the gases of the blood, as obstructive diseases, tumors of the larynx, trachea, abdominal tumors and distention, pyothorax, etc. From the increased venosity of the blood, the respiratory and vasomotor centres are stimulated and chloroform is well taken. It often happens as a result of these abnormities that the patient stops breathing just at the time the condition is relieved, when the anæsthetic (particularly chloroform) should be removed, for the reason that when an obstruction to respiration is removed, the patient will often take a deep inspiration and stop breathing. Respiration in most cases, after a few seconds, is spontaneously resumed. It can readily be seen, were a saturated chloroform mask over the patient's face during the deep inspiration, he might take in an amount which, if actually measured, would be very small, yet sufficient to cause death by an overdose. This fact should never be lost sight of.

In acute pulmonary conditions, particularly if associated with venous congestions, chloroform is to be preferred. In diseases of the circulatory system, as acute endocarditis, arteriitis, atheroma, and aneurysm, chloroform is to be preferred, as blood pressure is lowered and liability to rupture an artery lessened. Where compensation has occurred, ether is preferable. Alcoholics, and those addicted to the use of morphine, cocaine, etc., are particularly resistant to the influences of anæsthetics, especially ether. Chloroform is to be preferred; after the patient is anæsthetized, a change to ether may be made, and if the patient does not do well, chloroform may be readministered. It occasionally happens that alcoholics can not be anæsthetized either with ether or chloroform alone; in these instances gas, ether, and then chloroform may be tried, with ideal results. Chloroform may be substituted where ether has repeatedly occasioned bad symptoms, as marked cyanosis, not associated with any removable obstruction to respiration, those particularly resistant to ether developing coughing, vomiting, etc.

In obstetrics, chloroform, because of its superior convenience, is preferred. Where surgical narcosis is necessary, particularly if hæmorrhage is present, it is contraindicated, nitrous oxide and ether being preferable as maintaining vasomotor tone and counteracting uterine dilatation to a greater extent than does chloroform. Chloroform should not be used at night, as decomposition takes place when the vapor is brought in contact with any open flame, resulting in the formation of carbonyl chloride, which splits up into carbonic and hydrochloric acids in moist air. The coughing due to the irritating vapors generated at this time is familiar to all, and dangerous alike to the patient and those about him. Ether can be used at night with perfect safety if the light is above the patient and closed inhalers are used, care also being taken of the ether container.

Chloroform is often employed as a precedent to ether in very nervous subjects if nitrous oxide is obtainable; its use in this class of patients is particularly indicated and satisfactory. Chloroform is often used in hospitals as a preliminary to ether, because of its rapidity. This could be obviated if institutions would instruct their internes in the use of nitrous oxide.

In emergency cases, as hæmorrhage, shock, etc., chloroform is usually selected as the anæsthetic. It should not, however, be used. Ether alone, or preceded by nitrous oxide, is to be preferred, as it is a cardiac and vasomotor stimulant, which is directly the reverse of chloroform.

Age.—It is said that chloroform should be given to very young and very old people, because ether predisposes to bronchitis. Ether, if properly given, can be used in these patients. If combined with nitrous oxide, there is no better method. In old people, there being no contraindication, ether has an advantage in stimulating cardiac and in vasomotor tone.

THE AFTER-TREATMENT OF A PATIENT WHO HAS BEEN ANÆSTHETIZED.—The patient should be returned to a bed previously warmed; he should be covered with woolen blankets and fresh air admitted to the room. Washing out the mouth with plain water, in which there is a little lemon juice or peppermint, will remove the unpleasant taste and odor of ether, of which patients occasionally complain. Persistent nausea and vomiting, in my experience, have been rare. Usually, the patient vomits once, and ceases to do so afterward. This should be encouraged rather than otherwise, as it empties the stomach of saliva and mucus redolent with the anæsthetic. Nausea is best treated with hot water in which ten to twenty drops of lime juice or peppermint, or the bicarbonate of sodium, has been dissolved. As to the length of time before a patient regains consciousness, this usually depends upon the length and depth and method of the anæsthetization and operation. Here, again, if the anæsthetic is properly administered, consciousness is quickly regained.

EMERGENCIES ARISING DURING ANÆSTHESIA, AND TREATMENT FOR THE SAME.—Any condition interfering with the free ingress of air will cause asphyxia, the preliminary symptoms of which are cyanosis of the skin and mucous membranes and undue venous condition of the blood. The conditions may be mentioned in the order of their frequency.

The Tongue.—When anæsthesia is complete the relaxed condition of the muscles of the tongue permits it to fall backward upon the epiglottis, effectually closing the superior aperture of the larynx, preventing the entrance of air. The simplest method of treating this, which answers in most cases, is to extend the head and press the lower jaw forward at the angles. This tenses the muscles of the jaw connected with the tongue and hyoid bone and also the ligaments of the epiglottis, drawing it forward and upward, while tongue forceps or tenaculum may occasionally become necessary. A better practice, and one I have never before seen mentioned, is to slightly depress the lower jaw, when the tongue will appear at the teeth. It can then be grasped with the finger and thumb and held between two layers of gauze, similar to the practice of the laryngologist when examining the throat. This will also permit the effectual swabbing out of the pharynx of mucus and saliva, which in themselves occasionally obstruct breathing. Regarding the passage of a silk thread through the tongue, it is permissible when the tongue repeatedly falls back, due to an abnormally large state of the organ. The thread should be passed a good distance from the tip, and directly through the centre. It is sometimes necessary to forcibly separate the jaws before the tongue can be withdrawn. This is best accomplished with a periosteal elevator or wooden wedge, introduced at the site of the bicuspids. The gag can then be easily introduced, and as far back as possible. The supports of the gag should always be protected with rubber, preventing the fracture of brittle teeth.

Posture.—Various positions of the patient interfere with respiration. Trendelenburg's, which interferes with the action of the diaphragm and respiratory movements, sometimes causes cyanosis. The prone position, necessary in some operations, frequently occasions cyanosis, particularly in old subjects. The defects are obviated by resuming from time to time the horizontal in Trendelenburg's position, and turning the patient to one side when the prone posture is employed. Too great flexion of the head can cause an obstruction to breathing, and too dependent position of the head causes a cyanosis, due to pressure on the great arterial trunks. Both these conditions are remedied by keeping the head fairly extended, on a level with the body, and to one side; as before stated, this permits the mucus and saliva to flow from the mouth, and that in the pharynx to pass into the œsophagus instead of the trachea.

The lips, by their valvelike action, sometimes prevent respiration. This often occurs in old people as a result of atrophy of the alveoli of the jaws and of the muscles of the face. During inspiration the lips are drawn together and expiration does not effectually separate them, and cyanosis develops. The treatment here consists in separating the lips with the fingers. This condition may be overlooked if the inhaler is not at intervals removed from the patient's face.

Spasm of the Glottis; Spasm of the Chest Muscles; Spasm of the Muscles of the Lower Jaw.—These conditions are frequently associated, and occur at the beginning of an anæsthesia from a too concentrated vapor and when the patient is regaining consciousness, due to the efforts at vomiting and swallowing when neither are accomplished. It also occurs during rather advanced narcosis from abnormal reflex action. The last is the most serious. As cyanosis develops the condition subsides, due to the stimulation of the respiratory centre. If, after waiting a reasonable time, breathing does not commence, the jaws should be separated, traction on the tongue employed, and the epiglottis irritated with the finger. Breathing will, in most cases, be resumed; if not, artificial respiration should be employed.

Vomiting.—This occurs most frequently after the patient is anæsthetized and allowed to return to a lesser depth of narcosis. It is usually preceded by spasmodic movements of the diaphragm, chest, and abdomen, gulping, contraction of the muscles of the lower jaw, grating of the teeth, dilatation of the pupils, and cyanosis. Vomiting is best avoided by deepening the narcosis rapidly with ether, gradually with chloroform. If vomiting occurs, the head should be lowered, the patient turned to one side, and the mouth cleansed before recommencing the administration.

Foreign bodies, as loose teeth, particles of vomited food, etc., are particularly dangerous, as the laryngeal reflex is in abeyance. These objects may easily become impacted, resulting in respiratory obstruction and cyanosis, and, if not removed, will cause asphyxia. The removal of foreign bodies is usually accomplished with the finger or forceps; if not successful, completely inverting the patient and vigorously slapping the back usually answers; if this does not dislodge the substance, immediate tracheotomy becomes necessary.

Insufflation of blood into the larynx can cause asphyxia. This is best avoided by proper prophylaxis about the mouth; operations, if prolonged, are preferably preceded by preliminary tracheotomy, the pharynx being packed with sponges.

A few words regarding operations in children for removal of tonsils and adenoids may not be out of place. The head of the child should be slightly dependent, but supported by the hand, and narcosis deep and sufficient to permit the entire operation being concluded before consciousness returns. Where chloroform is used, it should be replaced with ether before beginning the operation. Ether is certainly far safer, particularly in this class of patients, throughout the narcosis. At the completion of the operation, by inverting the patient and turning him to one side, blood will flow from the mouth and nostrils, instead of into the trachea. Breathing frequently stops at the completion of the operation because of the anæsthetic and more or less insufflation of blood into the larynx. By removal of blood with sponges, and employing treatment as before stated, if ether is employed, dangerous symptoms are invariably averted. Chloroform is particularly dangerous, because even after its discontinuance there is a residual quantity of vapor in the air-passages. As soon as bleeding occurs, respiration is impaired, this residual chloroform is absorbed and acts as an overdose, and circulatory depression, evidenced by pallor and absence of the pulse, results, the breathing in these instances being shallow and gasping. In the treatment of these cases, artificial respiration should be performed with the patient upon the side (not upon the back), the head extended, and the patient inverted.

It will be seen that the emergencies mentioned are due to conditions with which the anæsthetic, in most instances, has nothing directly to do.

Dangerous symptoms resulting from the too sudden, prolonged, or excessive administration are most serious, and with ether are connected principally with the respiratory function, and are of an asphyxial nature. Collapse in most cases is gradual; for this reason prompt treatment rarely fails to afford relief. Direct paralysis of the respiratory centre is rare with this anæsthetic. Depression of the circulatory apparatus, through either the vasomotor centres or the heart, though possible, is very rare, and occurs secondarily.

The factors in the causation of chloroform syncope are (1) depression and paralysis of the vasomotor centres, permitting a great fall in arterial blood pressure; (2) more rarely paralysis of the heart. The respiratory centre is secondarily involved as a result of anæmia of the medulla, due to the great fall in arterial tension. Obviously, any condition interfering with the integrity of the circulatory apparatus must affect the respiration, and *vice versa.* Therefore, careful administrators watch unceasingly both the respiration and the pulse.

In collapse from hæmorrhage, there is an anæmia of the medulla quite similar to depression by chloroform, but with hæmorrhage treatment rarely fails to restore the patient. In surgical shock (vasomotor paralysis) there is a paralysis of the vital centres, not only from simple anæmia, but also from the anæsthetic, and treatment most frequently does no good whatever. Collapse from ether rarely occurs without warning, the symptoms being shallow, gasping, possibly high-pitched respiration, with or without cyanosis; the pulse at first will not be noticeably altered, but gradually becomes small, rapid, and irregular.

With chloroform, the most frequent observable symptom of danger is an ashy gray pallor, with rapid failure of the pulse. It is said chloroform frequently gives no warning of approaching collapse. While possible at the commencement of anæsthesia (even then I think faulty administration the cause in most cases), during narcosis, after the operation is completed and the inhalation discontinued, pallor will frequently arise, with disappearance of the pulse, but prompt treatment usually restores the patient. During a large experience in chloroform administration in adults and children I have had cases, usually those with adenoids and large tonsils, which showed dangerous symptoms, not at the beginning or during the anæsthesia, but at the end of the operation, and after the anæsthetic had been discontinued for some minutes, and an exceedingly small quantity of the anæsthetic used, all the patients recovered. One of these patients was restored after the most persistent treatment of twenty minutes. The causes of these symptoms I have before mentioned, and they are undoubtedly due to the residual vapor in the air-passages. Remembering this, it is always well to use alternate compression and relaxation of the chest with the child upon the side and inverted—that is, treat the danger before it occurs.

ARTIFICIAL RESPIRATION.—By this it is endeavored to introduce fresh air into the lungs by artificial means, at the same time removing the anæsthetic-laden air from the blood. In order that artificial respiration may be effective, the air-passages should be unobstructed, the patient's head extended and drawn to one side, the tongue drawn moderately out and allowed to fall to one side and to the dependent angle of the lips. If oxygen is to be employed this is the time for it, as there can be introduced as much oxygen during one inspiration as during four inspirations with atmospheric air. Of course, if the patient will not breathe, all the oxygen obtainable will be of no avail. As to the method of artificial respiration, Sylvester's is to be preferred in most cases. In operations about the mouth, or where blood or vomited material has been insufflated, Sylvester's method is not the best, as, in drawing air in, blood and other foreign material may be sucked into the larynx and trachea, and instead of relieving the condition it may be intensified. In these cases the patient should be turned to one side, when artificial respiration can be effectually performed, at the same time permitting the foreign material to gravitate to the hollow of the cheek and flow from the mouth.

Artificial respiration can be performed by forcibly introducing air into the lungs by means of a bellows, or by the use of a catheter introduced into the larynx, the anæsthetist using his own lungs to inflate those of the patient. I have had two successful cases in children so treated.

Grasping the abdominal wall outward will cause a negative pressure in the lungs and lead to inspiratory efforts, not reflexly, as is usually said, but this condition will also increase vasomotor depression. If chloroform has been used the device should not be employed.

INVERSION.—Hill has shown that in vasomotor paralysis the mechanisms which compensate for the hydrostatic effects of gravity are abolished. This permits a great fall in arterial tension, by which the blood is all located in the veins of the splanchnic area. By inverting the patient the blood is permitted to gravitate to a certain extent to the vital centres in the medulla, and directly to the heart, which stimulates it to increased action. It should be borne in mind that the heart may be overfull, when inversion, instead of correcting the evil, will increase it. Here the patient should be placed in the feet-down position for a moment or so, permitting the heart to empty itself, then again changing to the inverted posture.

By means of alternate compression and relaxation of the chest, both the circulation and respiration are affected. This is done very rapidly, or at the normal respiration rate, by pressure upon the lateral portions of the chest, one hand causing pressure directly over the heart. This device mechanically influences the blood in the cavities of the heart and moves it onward, and at the same time permits of inflation of the lungs.

If dangerous symptoms occur in the earlier stages of anæsthesia, restoring the patient by means of reflex action may be of benefit, but in profound narcosis much good can not be expected, though this means should, of course, be tried. The rhythmic traction of the tongue, about eighteen times a minute, is said to stimulate respiration reflexly. Laborde, who devised this method, used it in most cases in the earlier stages of anæsthesia, where the reflexes were not entirely abolished. Stretching the sphincter ani causes inspiration efforts, associated with the peculiar inspiratory stridor familiar to all. This is also of use during the earlier stages of narcosis, and has no influence during profound anæsthesia. Manipulations in Douglas's *cul-de-sac* act in the same way. Forcibly slapping the abdomen with hot wet towels has been found to be of some use, as well as ether or ice poured upon the abdomen. Applications of cloths wrung out of very hot water and placed over the heart are said to stimulate it reflexly, and should be tried.

Regarding drugs, it may be said they will be found of little benefit if there is no circulation; further, when they are used, care is necessary that the dosage is not too great and too often repeated, for when the circulation becomes active the aggregate of the remedies used may act in an overwhelming dose, and in itself be the cause of collapse. If a fair-sized dose of any drug employed does no good, it is safe to say a large dose will not do so.

When drugs become necessary in anæsthetic emergencies there is usually, but not always, a condition of vasomotor depression in which the circulation is at a standstill. This is probably the reason the large doses of drugs we read about having been employed exerted no influence upon the patient. Drugs usually used for anæsthetic emergencies are whisky, ether, ammonia, strychnine, atropine, digitalis, and amyl nitrite.

The instances in which I have seen whisky and ether employed have been with emergencies early in the narcosis, when anything used would probably restore the patient. Even in these cases I have always felt that artificial respiration and inversion were the real causes of improvement. When syncope occurs early in the narcosis, or before little or no anæsthetic has been inhaled, whisky or ether will certainly stimulate the heart. During profound narcosis they should never be used, and Wood has justly condemned the practice of administering these drugs during anæsthesia.

Ammonia.—This is employed by inhalation to stimulate respiration or intravenously to stimulate the heart. It is capable of doing much harm to the respiratory apparatus if too strong. Some good results from its use when introduced directly into the circulation if still fairly active.

Strychnine is, everything considered, the best circulatory and respiratory stimulant. If, after using a fair-sized dose, improvement does not result, no further dependence should be placed on it.

Atropine is a respiratory and vasomotor stimulant. It is also said to paralyze the cardio-inhibitory apparatus; to be effective, it should be given early, as soon as the patient shows the least sign of approaching collapse. Atropine is slow in its action and frequent fair-sized doses are to be preferred to one large dose.

Digitalis may be employed, but, as with other drugs, will be of little benefit if there is no circulation.

Regarding amyl nitrite, it may be said it increases vasomotor depression and does more harm than good; therefore it should not be used if chloroform was administered; it is of use when nitrous oxide has been employed.

Saline infusion will be found of the very greatest benefit in the treatment of shock where more or less blood has been lost. In urgent cases the fluid may be introduced directly into the circulation, the temperature being 115° F.; in less urgent cases, by means of the colon. In surgical shock resulting from prolonged operations, and when the anæsthetic is also a factor, much good can not be expected from saline infusion. Complete inversion of these patients with compression of the abdomen and the introduction of the saline solution directly into the colon, or hot coffee at the temperature of 120° F., with any drugs desirable, rarely fails to do good. While the introduction of the fluid into the colon is simple, few really know how to do it. A Wales's canalized bougie—in adults, size 7 will usually answer—is introduced, the fluid being pumped in by means of a bulb syringe attached to the end. By this means the intestine is pushed away from the tube as it goes upward; the fluid introduced into the colon quickly passes into the portal venous system and is correctly modified before going into the general circulation. Soft rubber tubes should not be used; they rarely pass the sacral promontory and never pass through the sigmoid, whereas the Wales's tube will never fail to do so if properly used.

The introduction of hot fluid into the colon is not practised to any extent. There is no better way of treating urinary suppression and shock from sepsis, and at the same time thirst may be allayed by it.

If patients were given a course of treatment by this means for, say, a week before any serious operation was to take place, surgical shock from prolonged operations would develop decidedly less frequently than it does. Even in emergency cases it does not fail to do some good.

Complications. — The following complications—bronchitis, pneumonia, suppression of urine, nephritis, paralysis—occasionally occur subsequent to the narcosis. The anæsthetic is usually blamed—faulty administration and improper care of the patient is undoubtedly the real cause. Consider bronchitis and pneumonia, for instance: after the patient is removed to bed his chest is exposed; added to this, he is obliged to lie upon the back continually. It is well known that patients who have been recumbent from illness and who had not taken an anæsthetic often develop a secondary pneumonia. This, I think, explains the cases of pneumonia developing days or weeks subsequent to the operation. It is rather significant that in patients under my direct supervision as an interne some years ago in a very active surgical and gynæcological service in a New York hospital, during a period of eighteen months, not one case of post-operative pneumonia occurred. The greatest precautions were observed in the care of these patients before and after operation. Nephritis or suppression of urine, I do not doubt, can occur as a result of supersaturation with anæsthetics. I have seen it following not only ether and chloroform, but also where either no anæsthetic or a local anæsthetic was used, particularly in operations upon the genito-urinary apparatus and sometimes prolonged operations, as a result of surgical shock, where the quantity of the anæsthetic used was remarkably small.

Casts and albumin I have seen following both ether and chloroform narcosis, usually disappearing in a few days.

Paralysis may be: 1st. Peripheral, due to faulty posture or apparatus for maintaining the position of the patient. It should be remembered that when a patient is anæsthetized the centres which control the unconscious movements of the body preventing injury are in abeyance. A careful administration will prevent pressure paralysis by slightly moving the patient from time to time and taking due care of the extremities, and thereby avoid pressure upon any one part for too long a period.

2d. Central paralysis due to a rupture of a blood-vessel is, in my opinion, most frequently due to improper administration of the anæsthetic and occurs at the commencement of anæsthesia as follows: From a too great concentration of the vapor the patient takes a deep inspiration, holds his breath, tenses his muscular system, congests his venous system; as a consequence there occurs a great rise in blood pressure, and as a result rupture of the vessel.

In conclusion, I think no one will deny that it is more the method employed and skill displayed in administering anæsthetics than the particular anæsthetic used that in most cases leads to the favorable termination of and rapid recovery from the operative procedure, whether long or short, in which the anæsthetic is more or less a factor. This is fully realized by anæsthetists, but rarely by the occasional administrator, who, as a rule, pays little attention to details upon which so often the patient's life depends.

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WHAT IS THE BASIS OF MODERN MEDICAL CONCEPTIONS?

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THE mere lapse of days and years is not all of life. To eat, drink, and sleep, to pace round in the mill of habit and turn thought into an implement of trade, this is neither life nor scientific attainment in the abstract. In all this but a small fraction of the conscious possibilities are awakened, and the sanctities still slumber which make it worth while to grind out the mechanism of existence.

In this discussion I do not refer alone to the scientific specialist who, oblivious to all other things, invests his whole being in the discovery and demonstration of new truths, and from whose efforts we certainly do get the greater part of our exact knowledge, but I refer as well to him who is in general practice, far removed from the constant influence and encouragement of the laboratory and clinic, for he as well as his brother in the city contributes his share to the sum total of the medical world and its conceptions.

The past few years have been largely a deductive and selective period, in which the fallacies and errors of the past have been put to the crucial test of scientific and practical investigation. I do not intend to elaborate a complete basis for a medical system, but rather to call attention to a few of the many pertinent facts that have been demonstrated in the past few years in the natural evolution of the science. I (nor you) do not know that these same facts were not known to the Egyptians or the older Levitical practitioners, but we do know that much has been recently added to or taken from medicine, which additions have been to all intent and purpose elementally new. These ideas have been put to the test of accurate investigation, and indubitable proof has been always demanded by this critical age; fortunately, too, the most learned experimenters and the most original thinkers were to be found registered in the ranks of the medical profession. The problems of our profession are not only the most intricate and delicate, but as well, since medicine is so dependent upon and a part of almost all other sciences, the fact that it has not progressed more speedily in the development toward perfection, is not a matter for legitimate criticism; rather, indeed, we should wonder that we have been able to lay aside so much empiricism, and take new courage for further steps in the same direction of progress. We ought to be thankful that we do not live in a day when the pernicious fetters which bound down and hemmed in the physician of a century ago were active. We are thankful that these are but memories of dead orthodoxies.

When medicine was in its infancy it appeared to the physician only as the various symptoms and their results were or became evident and demonstrable. It, perforce of the fact that recoveries under certain lines of treatment did occur, naturally developed a limited therapy, which therapy and its more or less skillful application were the then acme of medical science. Such, indeed, was the plane upon which it seemed to take a rather protracted *siesta* lasting for more than two hundred years. But being satisfied with a simple knowledge of the symptoms and history of a disease was not sufficient for the philosophical and intellectual mentality of the men of medicine, and they began seeking for the real causes of those conditions. For the next half century busy toilers were forging ahead of one another in their attempts to bring certainty out of probability; to establish the real in the realms of the ideal; to demonstrate as entities germ causes of disease, and to thus lift medicine from the honorable and honored position of one of the arts to the more honorable one of an exact science.

Skepticism has infested medicine as it has religion, until it sometimes seems to almost repudiate all the aids and accessories to the cure of disease; but it nevertheless has more frequently been an incentive to the busy delver after truth, both aiding and forcing him to establish his ideas on the scientific basis of fact.

The element of uncertainty which characterizes most medical questions has so instilled into the profession a certain degree of skepticism regarding pathological innovations particularly, and medical novelties generally, that they have thereby possibly, but quite properly, somewhat retarded the progress which might have been. The announcement that a specific for any condition has been discovered no longer startles us as once it did. Medical men generally have attained a safe and creditable conservatism in approving new steps in development. They seem to have come to the conclusion that if the suggestion really is a fact it will easily stand the test of experience, which baptism it must receive before it can be accepted as a suitable stone to form one of the steps in the grand stairway approaching the temple of truth which medical men are so busily building. If by this tireless toil and the many hours spent in experiment and investigation, even though the endless detail of the same may have seemed almost senseless and useless to some, the tireless investigator is able to reclaim some fact from the realm of chaos or uncertainty to that of scientific order, he has thus added a stone to the foundation of this same temple of truth. In this connection I would refer to the fact that there is a wealth of good, valuable experience, immeasurable in quantity, lost to the profession, and through them to the world, because so many otherwise capable physicians, under whose observation annually come floods of rich and varied fact, never show the least appreciation of their opportunities by reporting the same to the medical fraternity, nor even, indeed, for their own good by keeping more than a passing note of it upon the delusive tablets of memory.

All systems and sects of medicine should be compelled to prove and demonstrate the truth of their tenets before the bar of established scientific fact. Popular opinion, so easily influenced and so vacillating in its attachments, is not a criterion of scientific value.

As there is presumably a single object in the existence of all sects in medicine, so there should be a unity of effort and purpose in the work of preventing and healing disease; for no system or sect in medicine which is founded only on the symptomatology or therapeutics of disease can in the light of medical progress logically and legitimately claim to be representative of the most progressive medical thought. Wide and enduring reputation as an especially capable physician, while not always a safe criterion of one's real worth scientifically, is not usually gained as a result of purely mental attainments, but rather by a careful and scientific study of the subject both objectively and subjectively by the methods of modern physical diagnosis, thus lifting him above the common, furnishing him a logical basis for his professional act, and making him worthy of the compensation demanded. But we must remember that no veneer of pretended scholarship, no verbose command of rhetoric, nor any trickery of logic can ever give us a positive basis for a permanent idea, much less an enduring foundation for the science of medicine. Too often the narrow mind is the source of the broadest assertion concerning scientific matters. We can not afford to base our medical opinions upon the dissolving visions of some dreamer. "We are a thousand times more impressed with the truth that we have discovered ourselves than by the thousand truths that have been told us." Give the powers of observation a chance, and make a practical application of the theories learned from investigation and reading, and we shall soon have a safe foundation for our medical views, though it be a subject as broad as human life itself, and as various as are its actual or possible combinations. Among those who are most potent in the creation of a basis for ideas, in the development and demonstration of new truths, are the men who are not bound down by the dogmatic theories of any sect or school. They are men who have an independent mentality and a distinct individualism impelling them to original investigation.

What, then, are the means by which, and the ways in which, our ideas and concepts concerning the science of medicine are formed and effected? 1. College preparation and study. 2. The microscope and instruments of precision. 3. Post-graduate study and research. 4. Professional experience. 5. Already admitted facts. 6. Nature. 7. Intelligent discussion. 8. Literature, both medical and general. 9. Personal inclination and character.

Recognized medical schools are at the present day so nearly all of practically the same grade that there is by no means that difference in the opportunities afforded which was to be observed a few years ago. Any who have the inclination to do good, careful, scientific work in the study of medicine can find ample opportunity to encourage and gratify their ambition in any one of the hundred high-grade medical institutions in this country. On the whole, I am not willing to admit that foreign colleges offer so much superior advantages to the general practitioner of medicine, though to the specialist and he who intends to devote his time to the more intricate departments of medicine, undoubtedly the course abroad presents some decided advantages. In any instance it is not so much the institution as the man himself, his character, and his desires.

The excellent work of the past few years in the field of bacteriology has done more to revolutionize the whole system of medicine, and at the same time place it upon a firm scientific basis, than has any other single factor in medical progress.

Much of our medical theory of to-day rests upon the microscope and its revelations. Through it we have followed to their minutest cells all the forms of tissue: pathologically, that we might discover the foes of life and their modes of action; histologically, that we might find the principle of life itself. With this latter hope in view hundreds of the brightest minds have spent their lives, and the problem remains to-day in many respects an unsolved one to us. Whether we agree with the archæus of Paracelsus, the vital force of Hunter or Darwin, the *vitæ propria* of Virchow, or any other one of the many theories of life, we are not alone. But when some fortunate as well as brilliant mind has discovered the true principle of life, and demonstrated its entity and its laws of cellular action, then will a thousand anatomical and physiological enigmas in our existence be revealed, for we shall have a scientific basis on which to found our medical ideas. Then, too, will in all probability easily and naturally follow the solution of that problem for which all the world waits in hopeful expectancy—I refer to the problem of immunity from disease; and I may also add its twin sister, artificial immunity. If with our present knowledge of bacteriology we could combine a perfect, complete, and exact knowledge of all the various and delicate anatomical and physiological structures and processes, then our solution of the problems of medicine would be swift and certain.

To one who has high conceptions of life and its possibilities, the very nature of the training in his study of medicine comes as a valuable drill in acuteness and a discipline in accuracy, as well as being also a constant stimulus to logical and reasonable deduction. And while with many of us necessity compels a certain amount of devotion at the throne of "cash," it in no wise affords excuse for the "Bob Sawyers " who may be found in the ranks of the profession to-day.

We are morally and legally responsible not alone for what we know regarding medicine as a science, but as well responsible for what we ought and should know regarding the latest and best experience of others. Perforce of being physicians, and having assumed the Hippocratic oath, we are, by the force of that fact, recognized as authority to a greater or lesser extent along medico-scientific lines; now, if we have, by a dexterity both physical and mental, combined the art of practice with our scientific acumen, we can discharge those responsibilities without fear of serious error or discredit.

Too much credit must not be given to the specialist for the progress made in medicine. It has not all been the work of his brain. Not a few of our really good and progressive ideas have emanated from the mind of the busy general practitioner in village, country, or city. His varied experiences, many of them seriously perilous circumstances, force him to be a reader and a thinker, and with his reasoning at all times a practical man. "Careless guesswork or shallow reasoning can have no place in his daily life." It is, however, quite evident that no one mind can possibly grasp the almost infinite details of all the different branches of medicine. It is only under high-pressure tension that the brightest minds can pretend to keep up with modern medical progress in a creditable manner. In so speaking I do not condemn the general practitioner in any way; I rather offer an excuse for the existence of the specialist.

Physicians are, as a rule, conservative regarding those matters which have passed through the crucible of experience; they will at the same time hail with delight anything new bearing evidence of usefulness or advantage. The late Dr. Hamilton said: "We have reached a zone of settled fact in medicine and surgery which, if we appreciate and maintain, will open to us that discoverable but undiscovered zone of truth which lies just beyond, though it may seem to us as an unknowable region."

Is it likely or even possible that a science which could practically obliterate the terrors of small-pox, diphtheria, rheumatism, cholera, syphilis, leprosy, typhoid, inflammatory conditions of the abdomen and pelvis, pyæmia, and tumors—discover and appropriate the immaculate quartette anæsthesia, vaccination, antiseptic surgery, and antitoxine, and have almost conquered tuberculosis—can be founded on a fallacy? How much more evidence will the dear public require before they will willingly follow the advice of the medical profession? Reasoning on the record of humanity generally, we might be inclined to say: Only when the entire profession has become an eleemosynary adjunct to Bellamy's *Looking Backward* period of history.

For the sake of comparison, let us recall the grandly humanitarian and passionately pseudo-philanthropic cant we frequently listen to presidential addresses and commencement orations; in which we hear of the nobility and grandeur of the profession, and of how the fresh young doctor is destined to go forth from the college walls and hush the agonizing groans of thousands with the joy of health. Compare, if you please, all this with Locke's definition of the highest plane of action of the human mind—"to rectify prejudice, to undermine established error, to excite a fearless spirit of inquiry, to diffuse a proper mode of thinking, and yet all to be contained within the boundaries which Nature has set to the human faculties." Such, fortunately, represents a large proportion of the members of the medical profession, inasmuch as it is not an inviting field for drones or for those who know only enough to "put a drug of which they know little, into a body of which they know less, for a disease of which they know nothing."

Intelligent Discussion.—One of the most important elements in the development as well as the diffusion of truth, either medical or general in character, is by intelligent discussion. It is the refining process by which errors are discovered and corrected, by which falsehood is refuted and exposed, and the scientific deductions of fact and truth made apparent and comprehensive.

The forum of this discussion may be in the medical society, either special or general, either small or large, but there the promulgator of any new truth can have the temper of his steel most thoroughly tried by a test which will prove conclusively whether or not his idea is either tenable or new to the world.

The second forum for this discussion is in the medical press. This is undoubtedly one of the most important elements in the formation of our medical opinions. With the professional work of the whole world spread out before us each week or month, every medical novelty is there compelled to pass the judgment of the editorial tribunal as well as of the readers of the publication, and it is indeed a critical judiciary, whose approbation or condemnation will usually place a very deserved value upon any medical innovation. But while it may be a very critical and exacting judge, no one will deny that the science of medicine is deserving of the purest and best work that its journalism is able to develop.

When medical journals become more and more the trusted sponsors of new ideas, because there has been established between contributor and editor a mutual bond of sympathy, interest, and confidence, so that only that which is of real value to the profession will be found in its columns, then will it have attained its real dignity as a sponsor of medical opinion. When, with increased requirements and more thorough education in the colleges, we have demonstrated that medicine has kept pace with the other sciences; when medical teaching is no longer commercialized; when the government recognizes the supreme importance of the health of the people, and grants more encouragement and assistance to original investigation, which should most certainly be enthusiastically indorsed, fostered, and paid for by the government; when only those who should be authors write books; when authors write for legitimate financial reasons and not merely as newspaper wolves in medical literature clothing, then shall we be able to point to our literature as the criterion by which can be judged the basis of our medical conceptions.

Secular literature, possibly the most reliable mirror of popular opinion, constantly reflects evidences of the ever-increasing reverence in which the profession is held. Compare in mind, if you please, the ancient secular writers with the Dr. Benassis of Balzac, the Doc. Sifers of Riley, or the Dr. MacLure of *Beside the Bonnie Brier Bush*, each of which contains vastly more to us than the interest which attaches to the story told by the text.

However much we may pride ourselves as being self-made men, it is undoubtedly true that we are greatly influenced, not only in our action, but as well in our very ideas and beliefs, by the general trend of public opinion. Popular fads have some influence on physicians not less forcibly than upon other equally intelligent victims. But wisdom will teach us our capacity, while prudence will restrain us from overstepping it; ambition will spur us on to further efforts and renewed application, while good judgment will keep us modest.

But these are not all the elements which markedly influence our ideas. The personality and individuality are factors most important in the consideration. Knowledge, honor, truth, and devotion, as well as the other virtues, are what give vitality to the mechanism of our otherwise monotonous professional life, and at the same time lend to our ideas the impress of positiveness and authority.

What is to be the limit, the end, the result of all this study, this discovery, this development, this establishment of fact and truth? Have we almost reached the ultimatum of man's physical and mental existence? And do we find our theories agreeing with laws of the Infinite? This agreement, scientifically established, leaves no room for the skeptic, for, notwithstanding the almost reckless disregard for theory undemonstrated, so usual among thinkers to-day, it is not more marked than is the profound reverence they have for scientifically established truth, coming from any source it may.

The mere fact that we can not furnish an immunity from all the ills of life, or, by the administration of some preservative elixir vitæ, give to each newborn a guaranteed passport to centenarian felicity, does not establish an apostasy on our part with reference to legitimate and scientific medicine.

I am sometimes skeptical enough to wonder whether or not we really want a perfect and complete science of medicine. It would be so foreign to modern intelligence, and especially to American energy and inquisitiveness, that the ever restless spirit of medical science, with its incentive to action removed, would become indolent, selfish, incongruous, and ere long verily ignorant of the established principles themselves, which rather pessimistic prognosis is eminently proved by the history of other lines of thought. Our hope is that there may be such a general dissemination of knowledge from those who discover and demonstrate it that we may be led along near enough to those pioneers to be in close touch with them and their progress.

The profession must now be prepared to be not only dispensers of therapeutic relief in severe cases, but also, quite as important, must be competent sanitarians; health officers; inspectors of mines, food, factories, schools; insurance examiners; railway surgeons, etc.

Hygiene especially demands the closest attention from the medical profession. Empiricism is fast falling into the shades of the forgotten past, and specific therapy is speedily becoming enthroned as the ultimatum of internal medicine. It seems not too much to hope that medicine will soon have advanced to the point where it is fearlessly able to handle the microbe after the body has become infected in any of its parts; then will success depend entirely upon the physician, and his skill can not be judged by the criterion of empiricism.

Men of acknowledged genius and ability, men with talent, culture, and scientific acumen enough to make for themselves a world-wide reputation, have spent their lives, their minds, their time, all the momentum of their existence in the solution of medical problems. Yet, notwithstanding this, as well as the varied array of discoveries for the benefit of mankind referred to above as creditable, does it not seem an exorbitant expenditure of human life and human effort to win so small a heritage?

Who will question the scientific basis that has been builded by surgery, obstetrics, ophthalmology, otology, dermatology, or bacteriology? Much in the line of internal medicine has an equally solid basis scientifically. Immunization is one of the most wonderfully scientific facts of history. In the same connection, too, should be mentioned preventive medicine in general, that for which we all make our lives a paradox indeed.

Medicine is so nearly a scientifically established fact that we can say there is good and sufficient reason for claiming that our medical conclusions have a firm basis. And the very fact that so many of the specialties have reached so nearly the limit of possible scientific progress bids fair assurance that a like possibility of development awaits all other departments as well.

103 STATE STREET.

AN APPEAL FOR SYSTEMATIC TREATMENT OF THE CONSUMPTIVE POOR.

By JOHN F. RUSSELL, M. D.

WHEN a poor man, after a few weeks or months of coughing, as the case may be, suddenly has a hæmoptysis, and in alarm presents himself at a dispensary for advice and treatment, he is commonly told that he has consumption, and the best thing he can do is "to get into a different climate as soon as he can." In addition, he may be presented with a bottle of creosote and one of cod-liver oil.

Or, being greatly alarmed, and feeling that the occasion justifies the expense, he consults a "private" physician. The latter, recognizing the futility of such advice under the circumstances, either remains silent about the gravity of the attack, and in kindness tries to allay the patient's fears, or, from a sense of duty and a forlorn hope that somehow he may be able to follow it, repeats the advice about climate.

In both instances it is perfectly understood that the patient is still in the curable stage of the disease if he could but receive proper treatment, and in both instances the physicians feel that they can not supply it.

The man can not leave his family and his work. His hæmorrhage soon ceases, his alarm subsides, he even feels better than before the attack, the cough seems insignificant, and he drifts along without further counsel until the golden opportunity for treatment has passed. He has probably been told to be careful about his sputum, but, understanding imperfectly or not at all the necessity, he becomes a constant menace to his family and associates. When he next appears for treatment he receives more creosote and cod-liver oil and less advice about climate.

There are exceptions, of course, but we must admit that the foregoing is about what happens, as a rule. For instance, during October, 1897, one of my friends, whose life is devoted to deeds of charity, told me the following story: A poor woman in whom she was much interested had just been discharged from one of the hospitals with the information that she had consumption, and that the only hope was for her "to go to the Adirondacks." Her family consisted of five children, the youngest three years and a half old, all dependent upon her labor for support. It was impossible for her to go to the Adirondacks or anywhere else, and she was in despair. "Could nothing be done for this woman here, and, if not, what is to become of the children?" It was explained that if my friend would undertake to carry out the plan detailed further on in this paper something might be accomplished. To this she readily consented, and for five months, twice each day, did these things, with the result that her charge was restored to health. For two years this patient has not had a single symptom, rational or physical, of disease, is in vigorous health, and, her two oldest daughters having secured work, the combined incomes of all three enable them to live in such comfort as they have never before known.

We probably all agree that present methods of treating the consumptive poor are imperfect, and I shall attempt to show not only how they may be improved, but that it is inexcusable to allow them to continue.

Toward the close of January, 1898, I called upon one of the members of the executive committee of the Post-graduate Hospital and laid before him in detail my personal experiments in combating malnutrition, and suggested that, if the results impressed him as being sufficiently encouraging to warrant further experiment on a large scale, he lay the matter before the full committee, with the object of obtaining permission to use one of the rooms of the dispensary for this purpose. In the event of their favorable consideration, it was decided that cases of pulmonary tuberculosis in the early stage should be selected from among the poor as representing the most typical examples of malnutrition; and further, in order to relieve the experiment of any possible bias from my personal interest or enthusiasm, the executive committee were to appoint a committee of inspection composed of doctors to examine and observe the patients under treatment, and from time to time report the results of such observation to them.

These details having been arranged and the necessary permission given, this work was begun at the dispensary March 14, 1898. Since then two reports have been made by the committee of inspection. The first, dated July 19, 1898, enumerates five cases in which all physical signs of disease had disappeared; the second, dated July 21, 1899, reviews the previous cases reported (with the result that four are cured and one relapsed) and adds five more cases of apparent cure. With the exception of four patients at present under treatment, these ten represent practically all the suitable cases that I have been able to collect. There is no difficulty in securing cases in which the disease is too far advanced to be relieved by this or any other treatment, and I doubt if any one who has not attempted to get together a number of people suffering with uncomplicated pulmonary tuberculosis in the early stage can understand the great difficulties of such an undertaking. The great prevalence of the disease, the unusual number and ability of writers engaged in spreading information concerning its nature and prevention, and the universal interest in the general subject would appear to make it the simplest of tasks. It seems probable that no single physician comes into professional relations with a large number of these cases in the course of the year, but that the profession as a whole see a very large number there can be no doubt, and it is with the object of attracting general interest among physicians in New York to aid in carrying this experiment to a conclusion that I make this appeal. The reasonable expectation of success offered as a justification for this appeal is based upon the wide acceptation among medical men that the general plan of treatment here advocated, when applied under other conditions, yields the best results (both for the relief of the disease and in affording protection to the healthy), and upon the ten cases so far reported. The patients belong to the poor, who can afford no other than dispensary treatment; almost all of them work, are treated without interruption to their work, and are therefore maintained as self-supporting. If not relieved by this or some similar plan they and their families finally become dependent upon the charity of relatives or friends or the city.

The success and feasibility of the plan having been demonstrated, the problem of caring for the self-supporting consumptive poor who can not seek relief in sanatoria has in considerable part been solved, and it seems to me that dispensaries for this purpose should be multiplied throughout the city, so that in the progress of knowledge the average person who now believes the disease to be incurable will early seek relief for his cough, instead of, as at present, concealing his fears and working on in the desperate hope that his illness is not consumption, until finally, too ill to work and too far advanced to be relieved, his family scattered, he becomes a public charge. Surely a dispensary could have no higher purpose than this.

At the beginning of the experiment a letter addressed to the gentlemen of the committee of inspection explained the general purpose and plan briefly as follows:

That the object of the experiment was to prove uncomplicated pulmonary tuberculosis in the early stage among the poor curable by dispensary treatment.

That patients were to report every morning and every evening, and receive a preparation of digested mixed fats, the hours being arranged especially for those who labored. The only requirements exacted of the patients were that they should come twice each day and that they should have sufficient means to obtain their ordinary food regularly at home.

That, as very far advanced cases were considered incurable under the most favorable conditions, we should restrict membership in this class to patients in whom the disease was not far advanced; excluding all cases with cavities, all cases in which a large amount of lung tissue was involved, even though there were no cavities, tuberculous laryngitis, kidney and liver diseases, etc.

That no cases would be treated which the members of the committee regarded as doubtful cases of pulmonary tuberculosis. "They must all agree that each case is one of undoubted pulmonary consumption."

Usually it is not difficult at a first examination to determine whether a case is suitable or unsuitable for treatment. There are, however, a number of applicants whose lungs show extensive disease without cavities which has lasted often a year or more, of whom the prospect of relief can not be judged by a single examination, and in such instances they are allowed to come for three or four weeks on probation, during which time, from repeated examinations and observations, a decision is reached.

When applicants are accepted, they are told that they have consumption; that the treatment lasts for many months, and that the hope of cure rests with them in faithfully carrying out all the instructions, which are:

1. That they must come to the dispensary twice each day, Sundays and holidays included, without regard to weather.

2. That they must eat regularly and all they can of what they have, being guided in their selection of food as far as possible by our suggestions. Tea and coffee are allowed but once a day, and all alcoholics are forbidden.

3. That they must keep their feet dry and warm and avoid overclothing. Corsets are forbidden.

4. That they must sleep with windows wide open in all weather; that they are to keep in the open air, avoiding overexertion or exercise as much as possible; that they must not go to places of amusement, keep late hours at night, etc.

5. That they are to have a satisfactory movement of the bowels each day. No medicines except cathartics are used.

A copy of the following, which is made up in greater part from the leaflet of Dr. J. B. Russell, Medical Officer of the City of Glasgow, and in lesser part from the *Information for Consumptives and those living with them* of the New York Health Board, is given each patient:

It is expected that every patient will read carefully and preserve this paper, and observe the instructions which it contains, and any others given with the same end in view.

Consumption is an acquired, not an hereditary, disease. What a child may inherit is not the seed, but the "good ground" in which the seed will grow readily. This is known as an "hereditary predisposition to consumption." Special care ought to be taken to protect persons possessing it from any chance of catching the disease. Colds, sore throats, infectious diseases, intemperance, overcrowding, darkness, dampness, stale air—in short, whatever lowers health produces a predisposition to consumption altogether apart from pedigree.

Consumption of the lungs is only one of the many forms of disease caused by a minute living creature (germ or microbe)—the bacillus of tubercle. Every case of consumption has received this bacillus, either from man or beast, and may pass it on to man or beast. Good health, local and general, is like a coat of mail against the attacks of the bacillus of tubercle.

Every person suffering from consumption suffers from a disease which may be communicated to other persons. This takes place through the spit, which contains bacilli. So long as the spit is moist it can do no harm, unless under such circumstances as are dealt with in Rules 6 and 7.

The spit is gravely dangerous only when allowed to dry, become dust, and so infect the air we breathe.

The surest way to form infectious dust is to spit in a handkerchief and put it in the pocket or beneath the pillow, or to spit upon the floor, wall, or stove.

The same result follows if spit is smeared over hands, bedclothes, night dresses, etc., or, in the case of men, over mustache or beard.

Practically, then, a case of consumption may be made perfectly harmless by preventing the spit from becoming dust.

1. *Indoors.*—The greatest care is necessary. Dust in closed places is the dust which infects. Use a spittoon containing a little water (not sand or sawdust), or spit into a rag or piece of paper, to be burned at once or thrown into the water-closet.

2. *Out of Doors.*—Dust is not so dangerous outdoors, as it is disinfected by sunshine and fresh air. It is therefore better to spit on the ground than into a handkerchief or into anything which is to be put into one's pocket, except a special spit bottle or paper cup. Paper cups are better than ordinary cups or bottles, as they, with their contents, may be burned after use. A cheap and convenient form of paper cup for this purpose may be purchased at many drug stores. Failing this, spit into the gutter; never on the pavement, and never in a street or railway car, 'bus, cab, or carriage. Never swallow the spit; it may infect the bowels.

3. If a handkerchief or other article is soiled with tuberculous spit, keep it wet until it can be boiled and washed.

4. Empty the contents of the spittoon down the water-closet, and clean the spittoon with boiling water. A little carbolic acid will keep the flies away; these carry off infective matter.

5. In cleaning rooms occupied by consumptives, capture the dust with damp dusters and tea leaves or damp sawdust used in sweeping. Do not chase it about or stir it up. Boil the dusters; burn the sawdust and tea leaves.

6. No spoon, cup, or other article which has been applied to the mouth of a consumptive ought to be used by a healthy person until it has been carefully washed in boiling water. The remains of food left by a consumptive ought not to be used by the healthy.

7. No consumptive ought to kiss or be kissed, except on the cheek or brow.

8. No consumptive mother should nurse her child.

9. Consumptive persons ought to have a bed to themselves.

10. Sunlight and fresh air are never-failing disinfectants. Use them freely.

N. B.—Consumption is not communicable by the breath or perspiration.

If the matter coughed up be properly destroyed, a person suffering from consumption may frequently not only do his usual work without giving the disease to others, but may also thus improve his own condition and his chances of getting well. And if all these precautions are attended to, there is no danger to the healthy in the ordinary intercourse of the family or society.

It will be observed that the whole plan of treatment, as before stated, is based upon what is generally accepted as the most rational method for the relief of this dread disease—viz., fresh air and sunlight in abundance, good food, plenty of sleep, regulated exercise, all as far as possible under the circumstances, and attention to the small things of daily life which are known to influence nutrition favorably. The only novelty is its application to dispensary practice; to a class of people who otherwise would receive practically no systematic treatment or instruction at all.

Some of my friends predicted that patients would not go to a dispensary twice a day, or, if they did for a few weeks, they would finally grow tired, and either stop coming altogether or, at best, go irregularly. Our experience proves this to be untrue. I never knew a patient voluntarily to give up the treatment or fail to report regularly. Our only difficulty in this respect has been in sending away those patients who after a preliminary trial have proved hopelessly diseased. This is always an unpleasant time for us and the patients, as they invariably wish to continue treatment.

It must be obvious that the coming of the patients to the dispensary twice each day gives the doctor and nurse an opportunity to educate them how best to live according to their means. They come ostensibly only to drink digested fats, but in reality, in addition, to be cross-examined, to have faults of living corrected, to receive cathartics—in short, to be taught the lesson of fresh air and wholesome food, and how to make the most of them. The freedom from reserve that comes from such constant association, covering months of time, gives an opportunity to accomplish such results in this direction as are impossible outside a sanatorium. The larger part of this work falls upon the nurse, but it is easily within the capacity of any one having the necessary interest, tact, and patience.

The morning hour the patients call, drink their digested fats, and hurry to work. But in the evening, the day's work over, they sit, talk, sip their hot drink, and seemingly enjoy it as a sort of social relaxation.

The treatment is a long one at best, extending over months, and often the most enthusiastic grow weary and a little discouraged. This is true particularly of those who make decided gains at first, and then for a few weeks either only hold their advantage, often owing to the development of new spots of infection, or progress very slowly. To these the daily support of the doctor and nurse and the encouragement from those who are nearly well is helpful.

All patients are weighed and examined and notes made of their condition on Sunday morning from nine to ten o'clock. Sunday was selected for this work because for the majority it is not a workday, and they therefore lose no time. The men are weighed naked, the women in night dresses. Regular weighing is important for several reasons: it serves as a measure of the patient's general progress and a spur for greater effort, and it enables the doctor, in case of loss and the absence of a reasonable explanation in the condition of the chest, to question the faithfulness of the particular patient in carrying out instructions.

It should be remembered that these people earn small wages. While many of them could ordinarily pay an occasional small fee to a physician, it would be out of the question for them to pay fees, however small, covering a long period. The outlay in fees, if at all possible, would certainly cause a shortage in proper food and clothes. Many are married and have families, and others, though unmarried, have some one dependent upon them for support. In order to live they must therefore labor uninterruptedly. Under present conditions systematic treatment is a luxury which they can not afford. If they are to be treated at all, it must be done during the hours before and after work. These hours range from 7 or 8 A. M. to 6 P. M. How can such people seek treatment at the ordinary dispensary, the doors of which do not open until after nine o'clock in the morning and are closed before six o'clock at night? Every time they go to such a place means perhaps the loss of a half-day's work, and to some the loss of their position.

It is fair to say, in conclusion, that this article is not inspired by a desire to further the interests of the Post-graduate Dispensary or the preparation which bears my name, but solely in the interest of the particular class of consumptives described. Any movement looking to this end should come through medical men. It is distinctly their burden. If physicians are satisfied that the results so far obtained warrant the extension of this plan to the present organized dispensaries of the city and form classes for this purpose, I shall feel amply rewarded for my labor of the past two years. If they wish to pursue these investigations further, and will send patients to me at the Post-graduate Dispensary, I am willing and glad to go on. If they decide that the general plan is worthy of adoption, but that the use of digested fats is unnecessary—that the same or better results may be obtained from the use of undigested fat or other means—I shall feel that this is a great step in advance of present methods, since the administration of this preparation forms but one feature of the plan. But in all candor I must say that with me it is no longer a matter of speculation, but conviction, that the use of fat is essential, and that the average consumptive is unable to digest it in sufficient quantity unaided. The responsibility of deciding such matters rests with physicians.

Briefly summarized, I have attempted to show:

1. That a large number of poor people suffering with pulmonary tuberculosis in a curable condition can not go to sanatoria for treatment.
2. That dispensary treatment is practicable, successful, and comparatively inexpensive.
3. That curable pulmonary tuberculosis by dispensary treatment is confined to the early stage.
4. That without organized effort such cases are difficult to attract for treatment, owing largely to ignorance of the disease and a belief that it is incurable.
5. That the treatment covers a long period and patients require daily supervision.
6. That the majority of dispensaries at present make no adequate provision for such treatment.
7. That it is the duty of such dispensaries to organize classes for this purpose.

The advantages to be derived from the general adoption of the plan of treatment outlined are as follows:

Many are cured.

All are benefited.

All are educated and made capable of protecting and teaching others.

All, laboring and idle alike, can come for treatment.

In the end it will break down the deep-rooted belief that pulmonary tuberculosis in all stages or any stage is incurable and lead to the application for relief early in the disease.

21 West Eleventh Street.

MANAGEMENT OF THE HAIR DURING AND AFTER FEVERS.*

By GEORGE THOMAS JACKSON, M.D.,
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It is well known to both physicians and the laity that after fevers and parturition, as well as after some non-febrile but exhausting diseases, the hair is prone to fall out. The reason it does so is that during the illness the nutrition of the hair is interfered with, the hair receiving its blood supply from a deep plexus of vessels, and its nutrition sympathizing actively with the state of the general nutrition of the body. During the illness we shall be asked if we can not do something to prevent the falling out of the hair. Unfortunately, we can do nothing except try to keep the scalp in good condition. If the patient is very ill, we are unable to do anything active, but the attempt must be made to brush, or at least comb, the hair daily. If the patient is a man, that will be comparatively an easy task; if a woman, our task is much harder. Still, even then a nurse with deft fingers can comb out a little of the long hair at a time, and thus keep it from snarling. If the patient is not so ill as to preclude it, in addition to the daily combing of the hair a little oil or vaseline should be rubbed into the scalp once or twice a week.

As a rule, the hair does not begin to fall until some six weeks or more from the beginning of the illness. If the patient recovers with her hair in a snarl, should she be a girl under fifteen, the easiest course to pursue is to have it cut off as short as necessary to rid the mass of all the entangled hair. If the patient is more than fifteen years old, or even if she is younger and can command skilled care, the snarled hair must be disentangled by quiet and persevering effort. There is probably no snarl that will not yield to patient and persevering combing and manipulation.

It is during convalescence that the patient's friends, and perhaps the patient herself, are urgent for permission to have the scalp shaved and cross shaved. They will cite cases where this has been done and magnificent heads of hair have resulted, even straight hair coming in curly. It is useless to deny that such things do happen, but they are not consequent upon the shaving. I have seen more than one woman whose hair has come in curly, although lost after a fever, and without shaving. We should advise against shaving, explaining to the persons interested that it means a good deal of discomfort from wearing a wig, especially while the hair is growing, and a good deal of useless embarrassment on account of having to go about for months with short hair, to say nothing of the cost of the wig—a no small item. We should tell the patients that there is no way of foretelling how much hair will fall out, and that it is usually not enough to prevent "doing up the hair" so as to present a respectable appearance; and that if they will follow out directions they will have just as fine a head of hair as if they had shaved, and be saved all the by no means trivial annoyances that follow upon shaving.

We should direct that the hair be brushed and combed daily, telling them that they need not be worried because this will pull out a good deal of their hair, as it is only the diseased hair that can be so pulled out, and the sooner it is out the better. Once or twice a week a little pomade containing a drachm of precipitated sulphur to the ounce of a good cold cream should be well worked into the scalp. Or we may use daily a three-per-cent. lotion of resorcin in oil and alcohol. Personally I prefer the pomade. Many prefer a liquid preparation. Once in two or three weeks the hair and scalp are to be washed. Of course, this will pull out a lot of the damaged hair, which is a matter of no consequence. For the shampoo, we may use any good soap, though the most convenient kind is a liquid one, such as the tincture of green soap. If the latter is used, we should direct the patient to invert the bottle on a piece of flannel, dip the flannel in warm water, and use just as little soap as will make a good lather. So used, the soap will not convert the hair into a mass of strings. If too much soap is used, it will be difficult to wash it out. The soap should be all washed out, and the best way to do this is to have the patient place her head under the full stream of the bath-room faucet, or a hose attached to the same. After washing, the hair is to be carefully dried, and a little of the pomade rubbed into the scalp to take the place of the natural oil removed in the washing.

I feel sure, from seeing the results of this plan of treatment, that if these directions are carried out the patient will regain all the hair she lost, and often get more; she will be saved all the discomforts of having to wear a wig, and she will rejoice and give thanks to you.

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* Read before the Society of the Alumni of the City (Charity) Hospital, February 14, 1900.

EFFEMINATE MEN AND MASCULINE WOMEN.

By WILLIAM LEE HOWARD, M. D.,
BALTIMORE.

Weak physiological traits, like moral traits, can be increased or decreased by education, training, and example. Environment plays a most active and powerful rôle in this development. The child born of parents in the prime of physiological life, each one having strong sex characteristics, is apt to show these characteristics in its development and growth, regardless of environment and education. But not so the unfortunate child born of unstable parents; of those who have assumed the responsibility of parentage when life is on the wane, or whose physical or mental activities have been in channels far removed from anticipation and thoughts of married life. Such parents belong to the physiologically degenerate class. They forget that the tendency is, in all animal life, to degenerate rather than improve. This goes on, generation after generation, unless care is exercised to introduce improved blood on one side or the other.

When a child demonstrates in its acts and tastes an indifference to the natural preference and inclination of its sex, it should be strictly confined to the companionship of that sex. Its education should be along the same lines, and every encouragement given it to develop its normal attributes. An indifferent boy who grows up an effeminate man should be allowed to share the ridicule and contempt thrust upon him with his parents, the mother being given the major part. This same mother, who shields her son from physical harm, will bring him up in the nursery with embroidery; take the poor creature, dressed up in linens and velvet, to exhibit him to female admirers; shift him off to the nursery of her hostess, where he is left to dress dolls and have his hair curled by the female attendants, and sit down to a make-believe tea party with his little girl playmates.

He grows up psychically unsexed, detested by the vigorous male, utilized as a willing servitor by the society woman, and sternly admonished by a true father if he finds him dancing attendance with all his mincing manners upon a daughter. The female with masculine ambition is always amusing and often pitiable; but the attenuated, weak-voiced neuter, the effeminate male: pity him, but blame his mother for the false training, and give scorn to the father for his indifference. Even the woman, when she meets such a man, should passionately and involuntarily exclaim: *"O! surgit amari aliquid."*

The female possessed of masculine ideas of independence; the viragint who would sit in the public highways and lift up her pseudo-virile voice, proclaiming her sole right to decide questions of war or religion, or the value of celibacy and the curse of woman's impurity, and that disgusting antisocial being, the female sexual pervert, are simply different degrees of the same class—degenerates. These unsightly and subnormal beings are the victims of poor mating. When a woman neglects her maternal instincts, when her sentiment and dainty feminine characteristics are boldly and ostentatiously kept submerged, we can see an antisocial creature more amusing than dangerous. When such a woman marries, which she often does for the privileges derived from attaching Mrs. to her name, the husband is certain to be one she can rule, govern, and cause to follow her in voice and action. Should this female be unfortunate enough to become a mother, she ceases to be merely amusing, and is an antisocial being. She is then a menace to civilization, a producer of nonentities, the mother of mental and physical monstrosities who exist as a class of true degenerates until disgusted Nature, no longer tolerant of the woman who would be a man, or the man who would be a woman, allows them to shrink unto death.

The female who prefers the laboratory to the nursery; the mother quick with child who spends her mornings at the club, discussing "social statics," visiting the saloons and tenements in the afternoon, distributing, with an innocence in strange contrast to her assumptions, political tracts asking the denizens to vote her ticket, is a sad form of degeneracy. Such females are true degenerates, because they are unphysiological in their physical incompleteness. The progeny of such human misfits are perverts, moral or psychical. Their prenatal life has been influenced by the very antithesis of what the real woman would surround her expected child with. The child born of the "new woman" is to be pitied. If it could be taken away from its environments, kept from the misguidance of an unwilling mother, nurtured, tutored, and directed along the sex line Nature has struggled to give it, often would the child be true to its latent normal instincts and grow to respected womanhood or manhood. Unfortunate it is that this development does not take place. The weak, plastic, developing cells of the brain are twisted, distorted, and a perverted psychic growth promoted by the false examples and teachings of a discontented mother. These are the conditions which have been prolific in producing the antisocial "new woman" and the disgusting effeminate male, both typical examples of the physiological degenerate.

It is this class that clamors for "higher education" for the woman; that crowds public halls, shouting for the freedom of woman and demanding all the prerogative of the man. It is these female androids who are insulated in the dark umbrage of ignorance and delusion regarding their negative nature, who are faddist, 'ism'-ites, and mental roamers. Ideally mobile, they go from the laboratory to the convent, ever restless, continuously discontented, morbidly majestic at periods, hysterically forcible at times. They form sects and societies regardless of sense or science.

They demonstrate their early perverted mental growth by their present lack of reasoning powers. They form the victims of shrewder degenerates. They claim to know more about the science of medicine without study than the men who have devoted their lives to that science. They walk broadcast, superciliously flaunting our health laws and hygienic regulations in the faces of the assumed intelligent masses, and shout their incomprehensible jargon and blasphemous voicings from the portals of their money-making mosques.

Changes of Address.—Dr. H. Arrowsmith, to No. 147 Clinton Street, Brooklyn; Dr. Louis Fischer, to No. 65 East Ninetieth Street, New York.

PRACTICAL POINTS IN ETHER ANÆSTHESIA.

By C. FLOYD BURROWS, M. D.,
SYRACUSE, N. Y.

During the last few months my attention has been directed in current medical literature to frequent articles upon ether anæsthesia. Many of these monographs have been worthy of careful study by those interested in the use of ether. They have been written by men who stand high in our profession and are unquestionably accurate, but it has seemed to me that the practical side of its administration has been relegated to the background in favor of the scientific. Few physicians are specialists in the administering of ether. It is a task usually imposed upon the general practitioner; consequently it is befitting that he be tolerably expert in this branch of medicine. He knows not the minute or the hour when, in the course of his duty, he may be called upon to etherize, and to do this unskillfully may not only cost a life, but react in an unfavorable manner upon his otherwise brilliant reputation. It will be my effort in this article to follow closely the practical side of anæsthesia and not to drift into a scientific argument.

That ether is a powerful drug none will deny. A few drachms will cause unconsciousness; a few more will cause death. No remedy ever discovered, except, perhaps, chloroform or opium, has done so much to allay human suffering. How eminently necessary, then, is its proper use!

The preparation of the patient should be begun at least twelve hours prior to its use. Four drachms of sulphate of magnesium should be administered, and an hour previous to the inhalation an injection per rectum of a quart of warm water should be used. This will thoroughly cleanse the bowel and avoid future involuntary evacuations. All food should be restricted during the interval except, perhaps, milk, and even this should be discontinued for at least four hours previous to the commencement of the ether. Plenty of water, however, may be given, but the bladder must be emptied before etherization, either voluntarily or by the use of a sterilized catheter. False teeth and other foreign articles must be removed from the mouth and the patient's fears calmed as much as possible. Some authorities deem the hypodermic use of atropine and morphine prior to the beginning of ether beneficial, both to prevent mucus from accumulating in the throat and to deepen the anæsthesia. I have never observed any beneficial results from this practice. Cases in which atropine is used and no mucus collects do not prove its usefulness, for many times mucus does not develop if atropine is not used. When mucus has developed and atropine is used, it is not the effect of the drug which checks its further excretion, but rather an exhaustion of the mucous glands. No benefit is to be derived from morphine, for why combine this narcotic with one whose power is a hundred times greater? Surely polypharmacy has no place in anæsthesia!

In approaching a patient to begin the administration of ether, one should do so in a quiet manner. All superfluous paraphernalia should be kept out of sight and the nervous dread of excitable patients should be calmed gently. The pillows should be removed from under the head, clothing about the neck freely loosened, the body straightened, and, if possible, the patient should lie upon the back. The body, with the arms inclosed, should be wrapped in a woolen blanket, and an assistant should be at hand to help in case of struggling. A small amount of ether having been placed upon the cone, this should be held at first a few inches above the face. Haste at this period always makes waste. Strive not to suddenly overwhelm the patient with a cone full of ether held tightly over the mouth and nose. Ether is an irritant to the respiratory mucous membranes; avoid this irritation by the gradual admixture of air. The few minutes lost in the effort will be more than saved by the diminution of the struggling which is sure to follow a too rapid inhalation. Do not be alarmed if the breathing stops in this early stage and cyanosis supervenes. Raise the cone and allow fresh air to strike the nares, and then, as respiration starts, close the cone down again. If asphyxia becomes severe at this point or later, a small amount of ether poured quickly down upon the bare breast will almost always start breathing at once. Use plenty of ether in the early stage and as the anæsthesia proceeds, but mix freely with air. Watch the respiration and the reflexes. Unless the heart is affected the pulse will care for itself. In the majority of cases the pupils will be found a sure test as to the depth to which it is safe to push the anæsthesia. In the early stages they are dilated and react readily to light. As the anæsthesia deepens, they contract to a small diameter, but react to light. When the ether is being pushed to the danger limit, or shock occurs, the pupils dilate, sometimes widely, and are irresponsive to light. An essential point is always to know the exact condition of your patient—that is, whether he is deeply, moderately, or superficially under the influence of the ether. The state of the pupils, taken in conjunction with the pulse, respiration, and color of the lips and skin, will always be a true guide, and by close scrutiny of these signs attacks of syncope, sudden asphyxia, cessation of respiration, etc., will be avoided, unless dependent upon shock, hæmorrhage, etc. Even these can often be anticipated and treated accordingly.

Always strive to keep a patient thoroughly anæsthetized. This is characterized by even, stertorous breathing, contracted pupils, and complete muscular relaxation. If there seems to be difficulty in the breathing, try holding up the angles of the jaws. If this does not suffice, use tongue forceps and draw the tongue forward. The size of different tongues varies as much as their use. Many a one will be found hypertrophied to a greater or less degree. This, taken in conjunction with the tendency from muscular relaxation and suction to fall backward, and often also with enlarged tonsils and nasal obstructions, makes it easy to see how respiration may be greatly impeded from this cause. And yet I have seen skilled operators pause during laparotomies and pelvic operations to roll a patient upon the side to overcome asphyxia, disarranging all aseptic technique, delaying the operation, etc., when the simple application of a tongue forceps would have prevented the whole trouble.

Withdraw the ether occasionally and allow a few breaths of air. Avoid the hypodermic use of strychnine, digitalin, nitroglycerin, and a host of other drugs. It is easy to transform an ether anæsthesia into a drug narcosis. Ether itself is a powerful heart and respiratory stimulant. When stimulation is necessary, use a little fresh ether upon the cone. The pulse and respiration will respond as quickly as though you had used a hypodermic; besides, you have reserved your other stimulants until such time as (the ether having been finally withdrawn and reaction being tardy, or shock succeeding) they are needed. Of course, when the heart fails from prolonged or sudden hæmorrhage, it is of no avail to resort to this measure; neither is it to resort to heart stimulants. Intravenous injections, etc., are then required.

Always keep the body wrapped as warmly as the convenience of the case will admit. A startling amount of energy is often lost by the unnecessary chilling of the body, evaporation of perspiration, etc. Conserve this, and you have unconsciously injected a powerful stimulant. When the anæsthetization is over, be as expeditious as circumstances will allow in removing the patient to his cot. If the pulse is weak and the face pale, elevate the foot of the bed, use a rectal injection of a hot saline solution, and apply hot bottles to the extremities and body, particularly about the cardiac region. If shock has been considerable, do not hesitate to use strychnine, a thirtieth to a fifteenth of a grain, or digitalin, one one-hundredth to one fiftieth of a grain, as the case demands or you deem necessary. Above all things, do not leave your patient until reaction has thoroughly commenced.

Before closing I wish to add a word concerning ether cones. There are about as many used as there are users. This shows clearly that there is no single one which stands universally preeminent. Ether cones may be divided into two classes, according to the principle of construction: those made to exclude air and those made to allow an admixture. Each one has some advantages over the other. However, if one understands the phenomena of anæsthesia and knows how to anticipate and avoid its dangers, it matters not to him whether he has at command an expensive Allis inhaler or a common cotton towel twisted into a cone. It is not this or that inhaler which should be particularly desired, but the practical knowledge of how to successfully use whatever may be at hand.

The views set forth in this article are based upon the scrutiny of over four hundred cases of ether personally administered by the author, and the observation of perhaps half as many more.

824 East Genesee Street.

Therapeutical Notes.

The Treatment of Adenitis, Conjunctivitis, and Dermatitis with Cupric Ointments.—*L'Ufficiale sanitario, rivista d'igiene e di medicina pratica* for November, 1899, says that in adenopathies of the neck, the groin, and the axilla Hoppe employs the following formula:

℞ Black oxide of copper	60 grains;
Lard	450 “

M.

Mosler uses an ointment with a stronger proportion of copper—viz.:

℞ Black oxide of copper	150 grains;
Vaseline	750 “

M.

The friction of the glands should be made very gently, so as not to set up any papular eruption or ulceration of the skin.

The same journal states that Luton prescribes the following ointment in scrofulous adenitis and that consequent on impetiginous cruptions:

℞ Neutral acetate of copper (or acetophosphate of copper)	15 grains;
Vaseline	from 450 to 1,500 “

M.

Calcium Peroxide in the Enteritis of Children.—Rochlowsky (*Semaine médicale*, November 11th; *Fortschritte der Medicin*, February 28th) reports good results from the use of this drug, given in daily amounts of from three to nine grains, in milk. It parts with its oxygen slowly in the alimentary canal, and so acts as a disinfectant, while the calcium exerts an antacid effect in the stomach.

For Amenorrhœa.—The *Gazette hebdomadaire de médecine et de chirurgie* for April 1st attributes the following to M. H. C. Bloom:

℞ Sulphate of strychnine	1⅘ grain;
Oxalic acid	9 grains;
Peptonate of iron, Lactate of manganese, of each,	120 “
Compound extract of colocynth	30 “

M. Divide into sixty powders. One powder to be taken about an hour after each principal meal.

Strontium in Exophthalmic Goître.—The *Riforma medica* for March 24th gives the following formula:

℞ Strontium bromide	6 parts;
Strontium iodide	12 “
Distilled mint water, Syrup of mint, each	20 “
Distilled water	40 “

M. A coffeespoonful three times a day.

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THE MEDICAL MISSIONARY.

The Ecumenical Conference on Foreign Missions which has roused a great deal of popular interest in the sessions it has been holding in New York did a most praiseworthy and judicious thing when it decided to devote considerable time to medical missionary work. We fear it must be confessed that the importance of such work is more thoroughly appreciated by the clerical missionaries, if not, indeed, by ecclesiastics in general, than it is by members of the medical profession as a body. Many of the missionary clergy recognize that their wards' physical needs come quite as distinctly within their sphere of ministration as their spiritual instruction does, and they freely admit that every missionary ought to have some medical knowledge. One gentleman who spoke is reported to have declared that a missionary "must always be ready to undertake the cure of any disease brought to his attention." We shall assume that he said, or meant to say, *care* instead of cure—the types do play such pranks with public utterances—for we conceive that the pretense of power to cure all diseases might easily prejudice the cause among the heathen, many of whom are capable of reasoning quite astutely; but surely every missionary should be capable of alleviating physical suffering, if nothing more.

We wonder that physicians have heretofore shown so little interest in the work of the medical missionary, and our wonder grows when we reflect that the medical missionaries have not been mere plodders in relieving individual cases of disease, but have striven to keep up with the advance of medicine and have even themselves contributed to it in no mean measure. We have often had occasion to reproduce material published in the *China Medical Missionary Journal*, for example, and we never look over an issue of it without finding something that entitles it to a place in medical libraries as well as in evangelical esteem. Moreover, there are eminent medical men engaged in missionary medical schools, and in the mission work itself there is many a man who would have been sure to achieve distinction in medicine had he stayed at home. But we hope that this conference will be found to have enlisted in behalf of the medical missionary the earnest cooperation of the great body of his professional brethren, and we are encouraged in this hope by the fact that the president of the New York Academy of Medicine and one of its ex-presidents were among those who took part in the proceedings of the conference. Other eminent physicians, too, both American and foreign, have taken a prominent part in the good work, and we feel sure it will have its effect.

THE CAUSE OF SCURVY.

A most interesting investigation is published in the *Proceedings of the Royal Society* for April 14th, in An Experimental Inquiry into Scurvy, by Frederick G. Jackson and Vaughan Harley, M. D. The various views hitherto held as to the nature and ætiology of that disease—viz., that scurvy was due to a deficiency of potassium salts or of organic salts in the blood; to reduced alkalinity of the blood consequent upon the absence from the food of malates, citrates, and lactates; to want of proper ventilation and of proper blood nourishment, causing anæmia, the real antidote being found in fresh blood; and, finally, and most commonly, to a deficient supply of fresh vegetables, the need of which could be replaced by lime juice—would appear to require modification as a result of the authors' labors. Their researches tend to amply confirm the views first advanced by Professor Torup, of Christiania, that scurvy is essentially due to poisoning by the ptomaines of tainted animal food. The authors first call attention to many observations which seem to indicate that the general reduction in scurvy during recent years is not, as is commonly supposed, due to, though coincident with, the introduction of lime juice as a substitute for a deficiency of fresh vegetables. In the Nares Polar Expedition an outbreak of scurvy occurred simultaneously among the members of the sledging expeditions, by which only a small quantity of lime juice could be carried, and among the crews remaining on both the *Alert* and the *Discovery*, where the prescribed allowance of lime juice was daily forthcoming; while in Mr. Leigh Smith's party, which, after the loss of the *Eira*, lived during nine severe months without lime juice and under the most unsanitary conditions on Franz Josef Land, no case of scurvy occurred. Their food consisted of freshly killed bear and walrus meat and frozen blood. Dr. Nansen and Lieutenant Johansen, after leaving the *Fram*, spent nine months, including the winter of 1895–'96, on Frederick Jackson Island in a rudely constructed hut, without change of clothing, with no possibility of washing, almost constantly in the dark, without exercise, in the most unsanitary conditions, and without either fresh vegetables or lime juice, and yet no scurvy occurred. They ate no salted or canned meats, but only bear and walrus meat, which, freezing as soon as it was killed, presumably remained fresh. Other remarkable experiences are given, notably that of Mr. Jackson himself in Franz Josef Land between 1894 and 1897, all tending to confirm the deduction that the use of tainted food is the chief factor in the causation of scurvy.

The experiments recorded by the authors in their search for confirmation or otherwise of this view were briefly as follows: Three groups of monkeys, numbering severally six, eight, and five, were fed with meat from a freshly opened can, a can slightly tainted, and the same can, but with the addition daily of apples or bananas respectively. Monkeys not being naturally carnivorous, it was necessary to mix the meat with some food not credited with antiscorbutic properties, for which purpose rice and maize were selected. The rice was well boiled daily, and, after it had become thoroughly softened, fifty grammes of meat were added to each portion, the mixture being thoroughly stirred and gently heated. A certain amount of maize was then added. To secure uniformity, the same brand of meat was employed throughout.

In the first group, in periods varying from three to sixty-two days, diarrhœa set in; but in no case did blood and mucus show in the stools, nor were the gums affected. Loss of weight occurred in all, but this was attributed to the diarrhœa. In the second group, however, in which meat that was slightly tainted was used, diarrhœa set in in from four to forty days, while in all but two cases there were blood and mucus in the stools, and in all but three the gums became spongy and bleeding, and in some cases ulcerated. The sponginess of the gums was most marked around the incisors and bicuspids, and, as a rule, did not occur around the molars at all. The monkeys sat in a cramped position with roughened coats, showing a marked disinclination to move or to take any interest in objects around them. They did not, however, display any tenderness to handling, and in only one instance was there any indication of bruising. In the third group diarrhœa set in from the eighth to the one hundred and fiftieth day, and blood and mucus appeared in the stools from the eleventh to the ninetieth day. Sponginess and bleeding of the gums were present, however, in only two cases.

A further experiment contrasts the analysis of the blood from a normal monkey with that from two suffering from artificially induced scurvy. The scurvy cases showed a deficiency in the red blood corpuscles, an enormous increase in the white, a marked diminution in hæmoglobin, a decrease in specific gravity and in total solids, a deficiency in proteids, and a marked increase in fibrin, with a consequent shortening of the time needed for coagulation.

The sum and substance of these experiments would appear to be that, while in the monkeys fed on fresh meat as well as maize and rice the only symptoms were wasting and diarrhœa, due, probably, to the meat being an unnatural food for them, but without marked muscular feebleness or general ill health, in those fed on slightly tainted meat, with maize and rice, there were marked prostration and loss of weight, diarrhœa with blood and mucus in the stools, and spongy and bleeding gums—in short, all the chief indications of scurvy. In the third group, which may be considered as "well fed," but whose diet contained some tainted meat, scurvy also appeared, though its appearance was somewhat delayed, and it was not altogether so severe. The authors conclude from the results of their experiments on monkeys, as a whole, that they afford important confirmation of the conclusion derived from Arctic experience—viz., that the absence of fresh vegetables or lime juice is not alone adequate to cause, or its presence sufficient to prevent or cure, scurvy, and that the condition of the food in general, and especially the state of preservation of the meat, must be regarded as the essential factor in the ætiology of the disease.

THE INFLUENCE OF INTERFERENCE ON THE DEVELOPMENT OF THE OVUM.

The late Professor John C. Dalton once made a remark to the effect that the ovarian ovum of a cat and the ovarian ovum of a woman could not be distinguished from each other, but that fecundation invariably caused the one to develop into a kitten and the other into a baby. This will remain true in spite of all the variations in the development of the ovum that may be traced to interference, and by interference we mean both the designed and the accidental application of chemical and physical influences. Nevertheless, some of those variations are so important and follow so constantly upon the precise form of interference brought to bear that they can not be overlooked in the study of development. Some of them were set forth in a paper by A. D. Mead, Ph. D., of Brown University, read at a meeting of the Rhode Island Medical Society on March 1st, and published in the April number of the *Providence Medical Journal.*

M. Maupas, says Dr. Mead, has shown that the sex of the rotiferous animal known as *Hydatina* may be determined almost to a certainty by subjecting the female parent to different temperatures while the eggs are being formed in the germaria, although after that period nothing of the sort can be accomplished. He then cites Yung's experiment of stuffing tadpoles with highly nutritious food, which resulted in the development of ninety-two per cent. of them into females. Certain abnormities may be brought about by interference. For example, Professor Hertwig, of Berlin, has found that when frogs' eggs are allowed to become overripe before being fecundated they frequently develop into embryos with spina bifida, and a subsequent observer has shown that embryos with that defect may readily be obtained from normal eggs by two different methods, the one chemical and the other physical. Perhaps a more wonderful result is the production of double monsters, twins, and even a whole litter from a single normal ovum by interfering early with the process of segmentation.

From theoretical considerations Dr. Mead has been led to believe that the segmentation of the ovum is induced by the spermatozooid, " not by conveying into the egg a new mechanism for division, but by stimulating the mechanism already there," and, indeed, he has been able to start the segmentation process in unfertilized eggs by adding a small amount of potassium chloride to the water in which they were kept, although the process did not go on to the development of an embryo. Some results in this direction attained by Professor Loeb, of Chicago, are even more astounding. Working with unfertilized eggs of the sea urchin, he is said to have succeeded by the use of a little magnesium chloride in producing the actual formation of an embryo, but we are not told that such embryos advanced to maturity. It is reported that Loeb's experiments have been successfully repeated in Naples. Dr. Mead's concluding remark is: " After all, the most remarkable and impressive feature of embryonic development is the ingenuity and persistency displayed by the organism in striving to reproduce the form and character of its parent." Probably it is this very persistency that will forever stand in the way of radical variations as the result of interference.

THE DISPENSARY TREATMENT OF POOR CONSUMPTIVES.

We would call particular attention to Dr. John F. Russell's article entitled An Appeal for Systematic Treatment of the Consumptive Poor, which we publish in this issue. Dr. Russell's two years' work in the dispensary of the New York Post-graduate Medical School and Hospital, while it might not make much impression in a table of results, goes far to show that the consumptive who is too poor to avail himself of rest and climatic treatment may, nevertheless, if his disease is incipient and he is properly managed, be restored to health. Both Dr. Russell and the directors of the school are to be credited with an act of positive philanthropy.

THE MILK BOYCOTT OF SYRACUSE.

It seems to us that the dealers who have heretofore supplied the city of Syracuse with milk are very injudicious in allowing the dairymen's discontent at being required by the health officials to allow their cows to be subjected to the tuberculin test to lead them to cut off the supply. According to the reports, unlicensed venders are now bringing milk to points a little outside of the city limits and there selling it to persons who go from the city to get it, but the dairymen's association will not allow its members to sell to anybody except representatives of the hospitals or persons in special distress. If this is not conspiracy to deprive Syracuse of an absolutely necessary article, we do not know what would be.

A REPORTED IMPROVEMENT IN RÖNTGEN-RAY EXAMINATIONS.

As we are about going to press the newspaper dispatches announce that Professor Trowbridge, of Harvard University, has succeeded in so managing the electric current used in Röntgen-ray examinations as to give remarkably improved definition to the views obtained of bones and other anatomical structures. If this turns out to be true, it will undoubtedly prove of immense value in examinations with the x ray.

A GOOD EXAMPLE.

When so many are fond of looking across the ocean for all that is of value in medical science and discovery, and fail to see anything meritorious in "home products," it is refreshing to read in the *American Journal of Surgery and Gynæcology* for April a letter from Dr. Carl Beck, who takes exception to a writer who, in describing his views on appendicular inflammation, has classed him among German medical writers. Dr. Beck says: " While I have no reason to regret my German birth and education, I am none the less proud that I selected the United States as my home, among all the lands of the world. And having striven to the best of my ability to do a share in the advancement of surgery in this, my adopted country, I naturally prefer to be considered an American surgeon." We heartily applaud these sentiments, and should like to see the spirit pervading them gain ground among some who are wont to look abroad for all that they expect to find of value in scientific work.

THE STATE EXAMINATION OF SPUTUM FOR TUBERCULOSIS.

A great public advantage, in addition to the benefit derived by the patient, through the State examination of sputum in suspected cases of tuberculosis is pointed out in the *Monthly Bulletin* for February, which journal is the official organ of the Rhode Island State Board of Health. The actual discovery of a living entity in the sputum as the cause of tuberculosis has been shown to exert an educating effect upon patients, convincing them more, perhaps, than any amount of argument that, unless great care is exercised, they may not only disseminate the disease among those near and dear to them, but may also reinfect or light up quiescent disease in themselves by the inhalation of dried sputum dust. Private practitioners might advantageously use this moral lever, illustrating it by an exhibition of the stained specimen to engage the active cooperation of their patients in the proper disposal of their secretions.

THE MEDICAL OFFICERS' RISKS IN WARFARE.

THERE is, or rather there has until recently been, a popular impression that military medical officers do not essentially share the dangers of warfare to an extent in any way commensurate with that of "combatant" officers, and that therefore they can not, strictly speaking, be considered soldiers. The *Indian Medical Record* for April 4th gives a list, "complete as far as possible," of the members of the medical profession killed in action, dead from disease, and wounded in the South African campaign. From this we learn that four medical officers have been killed in action, three have died from disease, and fourteen have been wounded up to March 10th. Surely this is no mean proportion, considering the relative strength of the medical corps in regard to the rest of the army.

SUPERSTITIOUS BURGLARS.

A NOVEL use for the anatomical skeleton is in evidence. It may on occasion do service as a burglar alarm. According to the *New York Times* for April 30th, burglars recently entered the cottage of Dr. L. E. B. Silvers, of Rahway, New Jersey, and after appropriating some jewels attacked the closet in the doctor's bedroom where the silver was kept. An anatomical skeleton, however, which was in the closet seems to have scared them, for they beat a precipitate retreat, leaving the silver behind them. As most families possess "a skeleton in the closet," one can only murmur *O si sic omnes!*

INFECTIOUS DISEASE IN THE PUBLIC SCHOOLS.

THE principal of one of the New York high schools complains, in the *New York Times* for April 25th, that, out of twenty cases of measles in his school, only three, and out of seven cases of scarlet fever, only two, have been reported to him. The complaint has given rise to a newspaper controversy between the school principal and certain officials of the board of health, in which statements are made on the one hand and denied on the other. It is to be hoped that the exact truth will be arrived at speedily, and cordial cooperation between the health and the school authorities established. The matter is too important to be left in dispute.

THE DANGER OF SELLING HEROINE EXCEPT ON PRESCRIPTION.

IT seems that heroine is sold to laymen in Germany, and the danger of the practice is pointed out by Dr. E. Harnack, of the Halle Pharmacological Institute (*Münchener medicinische Wochenschrift*, 1899, No. 27; *Centralblatt für innere Medicin*, April 14th), who in experiments on animals has convinced himself that heroine is more dangerous than morphine. He admits that it is not always safe to reason from such experiments when it comes to the case of the human subject, but he properly insists that the maximum dose of heroine for adults, which the manufacturers state to be 0.075 of a grain, is in danger of being exceeded by lay purchasers of the drug.

MUSCULAR INJURIES DUE TO CONVULSIVE ACTION.

WE are familiar with fractures caused by violent muscular action, but it is doubtful if the frequency with which muscles themselves and their fasciæ are ruptured during epileptic paroxysms is generally known. Dr. C. Féré (*Revue de chirurgie*, January; *Centralblatt für Chirurgie*, April 14th) finds such injuries common among the epileptic insane, and states that they are very often symmetrical.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported for the two weeks ending April 28, 1900:

DISEASES.	Week ending Apr. 21.		Week ending Apr. 28.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	7	3	10	8
Scarlet fever	176	18	165	13
Cerebro-spinal meningitis	0	10	0	3
Measles	716	27	714	27
Diphtheria	240	55	224	43
Laryngeal diphtheria (croup)	18	5	10	4
Tuberculosis	201	182	202	204
Chicken-pox	14	0	0	0
Small-pox	5	0	2	0

The New York Academy of Medicine.—At a stated meeting, on Thursday, May 3d, the order for the evening was a paper by Dr. Max Einhorn, entitled Remarks on Hyperchlorhydria, and a Report on the Occurrence of Mold in the Stomach, which was followed by a general discussion.

Marine-Hospital Service Health Reports.—The following cases of small-pox, yellow fever, cholera, and plague were reported to the surgeon-general during the week ending April 28, 1900:

Small-pox—United States.

Mobile, Ala	Apr. 14–21	12 cases.	
Washington, D. C	Apr. 14–21	2 "	
Jacksonville, Fla	Apr. 14–21	1 case.	
Aurora, Ill	Apr. 1–7	1 "	
Chicago, Ill	Apr. 14–21	4 cases.	
Evansville, Ind	Apr. 14–21	5 "	
Indianapolis, Ind	Apr. 1–21	8 "	
Wichita, Kan	Apr. 14–21	11 "	
Thirty-three towns and counties in Kansas	Mar. 1–31	456 "	5 deaths.
Covington, Ky	Apr. 14–21	7 "	
Lexington, Ky	Apr. 14–21	2 "	
New Orleans, La	Apr. 14–21	75 "	19 "
Portland, Me	Apr. 14–21		1 death.
Detroit, Mich	Apr. 14–21	1 case.	
Omaha, Neb	Apr. 14–21	2 cases.	
Cleveland, Ohio	Apr. 14–21	15 "	
Philadelphia, Pa	Apr. 21	1 case.	
Pittsburgh, Pa	Apr. 14–21	2 cases.	
Greenville, S. C	Apr. 13–20	3 "	
Salt Lake City, Utah	Apr. 14–21	3 "	
Spokane, Wash	Apr. 14–21	3 "	
Wisconsin	Apr. 14	1 case.	

Small-pox—Foreign.

Prague, Austria	Mar. 24–31	5 cases.	
Ghent, Belgium	Apr. 1–7		2 deaths.
Cairo, Egypt	Mar. 18–Apr. 1		16 “
Liverpool, England	Apr. 1–7	8 “	2 “
London, England	Apr. 1–7	2 “	
Southampton, England	Apr. 1–7	1 case.	
Paris, France	Apr. 1–7		2 “
Gibraltar	Apr. 1–8	4 cases,	1 death.
Athens, Greece	Apr. 1–7	4 “	2 deaths.
Bombay, India	Mar. 13–20		163 “
Bombay, India	Mar. 20–27		138 “
Calcutta, India	Feb. 24–Mar. 3		21 “
Kurrachee, India	Mar. 11–25	24 “	12 “
Chihuahua, Mexico	Apr. 1–14		2 “
Vera Cruz, Mexico	Apr. 7–14		6 “
Odessa, Russia	Mar. 24–Apr. 7	9 “	3 “
St. Petersburg, Russia	Mar. 18–24	30 “	3 “
Warsaw, Russia	Mar. 18–31		2 “
Madrid, Spain	Mar. 24–31		8 “
Straits Settlements, Singapore	Mar. 3–10		3 “

Yellow Fever.

Limon, Costa Rica	Apr. 20	1 case.	
Vera Cruz, Mexico	Apr. 7–14		2 deaths.

Cholera.

Bombay, India	Mar. 13–27		11 deaths
Calcutta, India	Feb. 24–Mar. 3		70 “

Plague—United States Insular.

Honolulu, Hawaii	Mar. 26–Apr. 2	3 cases,	3 deaths.
Honolulu, Hawaii	Apr. 9	1 case.	

Plague—Foreign.

Rio de Janeiro, Brazil	Apr. 20	6 cases,	6 deaths.
Bombay, India	Mar. 13–27		1,428 “
Calcutta, India	Feb. 24–Mar. 3		411 “
Kurrachee, India	Mar. 11–31	292 “	223 “

The Buffalo Academy of Medicine.—At the last regular meeting of the Section in Surgery, on Tuesday, May 1st, the order for the evening included the following papers: Fitting Glasses on Children, by Dr. Arthur G. Bennett, and Abscess of the Lung, by Dr. Edward M. Dooley. In the discussion which followed, Dr. Mynter, Dr. Parmenter, Dr. E. A. Smith, Dr. Phelps, and others took part.

The St. Louis Medical Society of Missouri.—At the last regular meeting, on Saturday, April 28th, the following papers were presented for discussion: The Enucleation of an Eye, with Implantation of a Glass Ball into the Orbital Cavity—The Use of a New Form of Artificial Eye, by Dr. J. Ellis Jennings, and Fifty Years' Study and Practice of Rhinology—Events of the Years 1868 to 1872, by Dr. Thomas F. Rumbold.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 21 to April 28, 1900:*

Bevans, James L., Acting Assistant Surgeon, United States Army, will proceed to Seattle, Washington, for assignment to duty.

Echeverria, R., Major and Surgeon, United States Volunteers, is assigned to duty in charge of such part of the United States Military Hospital, No. 1, Havana, Cuba, as has been retained by the military government of the island.

Gardner, Edwin F., Major and Surgeon, United States Army, is assigned to temporary duty, with station in San Francisco, awaiting transportation to the Philippine Islands.

Kennedy, James M., Captain and Assistant Surgeon, United States Army, is relieved from further duty in the Department of California, to take effect on or about May 10, 1900, and will report in San Francisco, for transportation on the first available transport for Manila.

Woodhull, Alfred A., Lieutenant-Colonel and Deputy Surgeon-General, United States Army, will report to the surgeon-general of the army for duty in his office.

The following-named medical officers are detailed to represent the medical department of the army at the ninth annual meeting of the Association of Military Surgeons of the United States, to be held in New York city, from May 30th to June 2d: Byrne, Charles C., Colonel and Assistant Surgeon-General; Borden, William C., Captain and Assistant Surgeon, and Gandy, Charles M., Captain and Assistant Surgeon.

The following-named medical officers are detailed to represent the medical department of the army at the meeting of the American Medical Association, to be held in Atlantic City, New Jersey, from June 5th to 8th: Woodhull, Alfred A., Lieutenant-Colonel and Deputy Surgeon-General, and Stephenson, William, Captain and Assistant Surgeon.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending April 28, 1900:*

Delancy, C. H., Assistant Surgeon. Detached from the *Amphitrite* and ordered to the *Essex.*

Farenholt, A., Passed Assistant Surgeon. Ordered to return to the United States by the *Concord.*

Grunwell, A. G., Assistant Surgeon. Detached from the *Yosemite* and ordered to the *Brooklyn.*

Leys, J. F., Passed Assistant Surgeon. Detached from the *Essex,* on reporting of relief, and ordered home to await orders.

Lippitt, T. M., Assistant Surgeon. Detached from the *Baltimore* and ordered to the *Oregon.*

Morris, L., Passed Assistant Surgeon. Detached from the *Brooklyn* and ordered to the *Baltimore.*

Ohnesorg, K., Assistant Surgeon. Detached from the Naval Academy and ordered to the *Newport.*

Pigott, M. R., Passed Assistant Surgeon. Detached from the Naval Academy and ordered to the *Chesapeake.*

Stoughton, J., Passed Assistant Surgeon. Detached from the *Bennington* and ordered to the *Castine.*

Thompson, J. C., Assistant Surgeon. Detached from the *Castine* and ordered to the *Bennington.*

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the United States Marine-Hospital Service for the Seven Days ending April 26, 1900:*

Gassaway, J. M., Surgeon. Granted leave of absence for five days from April 23d under the provisions of Par. 179, Regulations, M. H. S.

Wertenbaker, C. P., Passed Assistant Surgeon. Detailed to represent the service at the meeting of the Association of Military Surgeons of the United States at New York from May 30th to June 2d.

Stimpson, W. G., Passed Assistant Surgeon. Granted leave of absence for ten days from April 28th.

McMullen, John, Assistant Surgeon. Granted leave of absence for seven days. Upon expiration of leave of absence, to proceed to the Gulf Quarantine Station, Mississippi, and report to the medical officer in command for temporary duty.

GOLDBERGER, JOSEPH, Assistant Surgeon. Upon being relieved from duty at the Immigration Depot, New York, to proceed to the Reedy Island Quarantine, Delaware, and report to the medical officer in command for duty and assignment to quarters.

EAGLESON, J. B., Acting Assistant Surgeon. Granted leave of absence for three days from May 8th.

RODMAN, J. C., Acting Assistant Surgeon. Granted leave of absence for four days from April 23d.

OLSEN, E. T., Hospital Steward. Upon being relieved from duty at Wilmington, North Carolina, to proceed to the Mullet Key Detention Camp, Florida, for duty.

CROWLEY, C. F., Hospital Steward. To proceed to Wilmington, North Carolina, and report to the medical officer in command for duty and assignment to quarters.

Promotions.

PERRY, T. B., WOODWARD, R. M., and VAUGHAN, G. T., Passed Assistant Surgeons, commissioned as surgeons.

Appointment.

CROWLEY, CHARLES F., of Nebraska, appointed junior hospital steward.

Society Meetings for the Coming Week:

MONDAY, *May 7th:* New York Academy of Sciences (Section in Biology); German Medical Society of the City of New York; Morrisania Medical Society, New York (private); Brooklyn Anatomical and Surgical Society (private); Corning, New York, Academy of Medicine; Utica, New York, Medical Library Association; Boston Society for Medical Observation; Boston Medical Association (annual); St. Albans, Vermont, Medical Association; Providence, Rhode Island, Medical Association; Hartford, Connecticut, Medical Society; South Pittsburgh, Pennsylvania, Medical Society; Chicago Medical Society.

TUESDAY, *May 8th:* New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private); New York Obstetrical Society (private); Buffalo Academy of Medicine (Section in Medicine); Kings County, New York, Medical Association; Rome, New York, Medical Society; Medical Societies of the Counties of Albany (annual), Delaware (annual), Greene (annual), Onondaga (annual—Syracuse), Rensselaer (annual), Seneca (annual), and Steuben (annual), New York; Newark (private) and Trenton, New Jersey, Medical Associations; Camden (annual—Camden), Morris (annual), and Sussex (annual), New Jersey, County Medical Societies; Clinical Society of the Elizabeth, New Jersey, General Hospital and Dispensary; Norfolk, Massachusetts, District Medical Society (Hyde Park—election); Franklin, Vermont, County Medical Association (annual); Northwestern Medical Society of Philadelphia; Practitioners' Club, Richmond, Kentucky; Richmond, Virginia, Academy of Medicine and Surgery.

WEDNESDAY, *May 9th:* New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Society of the Alumni of the City (Charity) Hospital; Society for Medical Progress, New York; Medical Society of the County of Allegany, New York (annual); Pittsfield, Massachusetts, Medical Association (private); Franklin (annual — Greenfield), Hampshire (annual — Northampton), and Worcester (annual—Worcester), Massachusetts, District Medical Societies; Philadelphia County Medical Society.

THURSDAY, *May 10th:* Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; Medical Society of the County of Cayuga, New York (annual); South Boston, Massachusetts, Medical Club (private); Pathological Society of Philadelphia.

FRIDAY, *May 11th:* Yorkville Medical Association, New York (private); Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties, New York.

SATURDAY, *May 12th:* Obstetrical Society of Boston (private).

Births, Marriages, and Deaths.

Married.

BELL—BECKHAM.—In Kershaw, South Carolina, on Thursday, April 26th, Mr. R. Lather Bell and Miss Maud Beckham, daughter of Dr. Robert S. Beckham.

BISHOP—DONALD.—In New York, on Thursday, April 26th, Dr. James Bishop and Miss Margaret M. Donald.

CRAWFORD—WETMORE.—In Brooklyn, on Wednesday, April 25th, Dr. J. D. Crawford and Miss Alma Wetmore.

DOUGHTY — AVERELL. — In Brooklyn, on Friday, April 27th, Dr. I. Lynton Doughty, of Corona, Long Island, and Miss Ellie Roby Averell.

FINCH—QUICK.—In Brooklyn, on Wednesday, April 25th, Dr. William Young Finch and Miss Jennie A. Quick.

HARRINGTON—AHLERS.—In Flatbush, Long Island, on Thursday, April 26th, Dr. Burt Davis Harrington and Miss Bessie Marion Ahlers.

HILL—INGE.—In Greensboro, Alabama, on Thursday, April 26th, Dr. T. Bowen Hill, of Mobile, and Miss Lida Inge.

KNOLLE—SCHWARTZ.—In Schulenburg, Texas, on Tuesday, April 24th, Dr. R. L. Knolle, of Industry, Texas, and Miss Lena Schwartz.

McCARROLL — CREIGHTON.—In Morristown, New Jersey, on Monday, April 23d, Dr. Henry Bruce McCarroll and Miss Edwina Stringham Creighton.

McKEWN—FAIREY.—In Branchville, South Carolina, on Wednesday, April 18th, Dr. W. F. McKewn and Marie L. Fairey.

McKIM—LEE-JONES.—In New York, on Thursday, April 26th, Dr. William Duncan McKim and Mrs. E. Lee-Jones.

NORWOOD—BETHUNE.—In Lynchwood, South Carolina, on Wednesday, April 25th, Dr. B. Lucas Norwood, of Lucknow, South Carolina, and Miss Mary C. Bethune.

SANFORD—WHITNEY.—In New Haven, Connecticut, on Thursday, April 26th, Dr. Leonard Cutler Sanford and Miss Sarah Tracy Whitney.

Died.

Bronson.—In Brooklyn, on Tuesday, April 24th, Dr. Charles H. Bronson.

Brown.—In New Orleans, on Thursday, April 26th, Dr. William E. H. Brown, in the seventy-first year of his age.

Haring.—In Nyack, New York, on Monday, April 16th, Dr. Isaac C. Haring.

Harris.—In Huntsville, Alabama, on Thursday, April 26th, Dr. George M. Harris, in the eightieth year of his age.

McCloskey.—In White Plains, New York, on Tuesday, April 24th, Dr. David W. C. McCloskey.

Price.—In Banner, Mississippi, on Tuesday, April 24th, Dr. John R. Price, in the sixty-first year of his age.

Todd.—In Barkwell, South Carolina, on Saturday, April 28th, Dr. George R. C. Todd.

Pith of Current Literature.

The Journal of the American Medical Association, April 28, 1900.

Peripheral Resection of Fifth Nerve. By Dr. W. W. Keen and Dr. William G. Spiller. — In spite of the transitory relief from these peripheral operations, their lower mortality would seem to give them the preference as against the Gasserian operations. Recourse to operative procedure should be had before the ganglion becomes involved. Very early operations (*e. g.*, after a month or two of ineffectual medication) may even cure permanently. The extraction of all the teeth seems to be an utterly needless sacrifice and productive of no good result.

Endothelioma of the Gasserian Ganglion; Two Successive Resections of the Ganglion: First, by the Extradural (Hartley-Krause) Operation, and, Secondly, by an Intradural Operation. By Dr. F. X. Dercum, Dr. W. W. Keen, and Dr. W. G. Spiller.

Method of Exposing the Gasserian Ganglion: Removal of the Superior Maxillary Nerve. By Dr. Gwilym G. Davis.

A Method of Total Extirpation of the Gasserian Ganglion for Trigeminal Neuralgia. (By a Route through the Temporal Fossa and Beneath the Middle Meningeal Artery.) By Dr. Harvey Cushing.

Congenital Aphakia and Irideremia. By Dr. Flavel B. Tiffany.

Treatment of Variola by Bichloride Baths. By Dr. H. A. Ingalls.—These baths are of a strength of 1 to 10,000, their temperature 103° to 105°. Patient to be immerged and sponged gently for ten or twelve minutes night and morning. Immediately after the bath a mixture of carbolic acid, bismuth subnitrate, and olive oil should be used as an anointment. Cases follow and the doctor's claims are: 1. There is practically no mortality. 2. The suppurative fever can be shortened four to six days. 3. Minimum of pitting, and absence of characteristic odor. 4. Desquamation period lessened. 5. Pain reduced. 6. Distortion of features eliminated to a great extent.

Medical Ethics and Medical Journals. By Dr. P. Maxwell Foshay.

The Smegma Bacillus. By Dr. Oscar A. Dahms.—Its significance in the diagnosis of tuberculosis and syphilis.

Boston Medical and Surgical Journal, April 26, 1900.

Splenic Pseudoleucæmia: Historical Sketch. By Dr. R. C. Cabot.—Splenectomy is a reasonable method of treatment in view of the fact that splenic enlargement seems to have preceded the anæmia in all recorded cases in which the question has been looked into thoroughly.

Splenic Anæmia. By Dr. John Lovett Morse.

Splenic Anæmia. By Dr. Henry Jackson.

Splenic Anæmia. A Case. By Dr. James Marsh Jackson and Dr. George Sumner Hill.

Medical Record, April 28, 1900.

Bottini's Operation for the Cure of Prostatic Hypertrophy. By Dr. Willy Meyer.—This paper treats at length the subject, and the writer is strongly in favor of the operation, the results of which so far have demonstrated: 1. That the urinary troubles of prostatics are the direct result of a true mechanical obstruction to the normal outflow of the urine at the neck of the bladder—viz., the enlarged prostate gland. 2. That by multiple division of the swollen gland with the galvano-caustic knife this obstruction may be overcome without any additional operation on the cords, testicles, or bladder. 3. That if the desired result of the operation is once thoroughly obtained the cure will be a permanent one. The technique follows. Operation with the bladder filled with sterilized boric-acid water is the preferable procedure. Filling the bladder with air is apt, under certain conditions, to result disastrously to the patient.

The Past and Present of Refraction. By Dr. Francis Valk.—An interesting review of the progress of refraction for the past twenty-five years, and of all these exact and useful objective methods, of all the advances in the examination of the eye, which, together with our better understanding of the ocular movements, have contributed to our present success in estimating in almost all cases the true and total refraction of the eye without depending upon the subjective tests. In fact, refractive error can now be corrected without asking a single question of the patient.

Progressive Pernicious Anæmia and Malignant Disease of the Stomach. By Dr. Albert Abrams.—The author's conclusions are that arsenic is a true specific in pernicious anæmia, given in Fowler's solution and pushed to the point of tolerance; assimilable food and rest are indispensable adjuvants. He believes that the use of intestinal antiseptics is a mere therapeutic refinement not sanctioned by bacteriological reasons, and that iron is not only useless, but is apt to create digestive disturbances. Bone marrow induces nausea and aggravates existing gastro-intestinal troubles. Stomach lavage is approved of, also the chemical analysis of the stomach contents to determine the character of the food ingested. Weak saline solution by the colon or in the subcutaneous tissue may be given to counteract the great reduction in the quantity of the blood. Relapses are best prevented by minute attention to dietetic and hygienic details.

The Medical News, April 28, 1900.

Some of the Reasons why the Surgical Treatment of Nasal Disease has been placed on a Conservative Basis. By Dr. Clarence C. Rice.—One reason why surgical operations on the nose and throat have been modified in frequency and in the severity of their character is that local causes of nose and throat disorder are now overshadowed in importance by ætiological influences proceeding from remote organs of the body.

Statistics of One Hundred Cases of Cancer of the Breast and the Results of Operation. By Dr. Clarence A. McWilliams.—The doctor's statistics lead him to assert that the feeling that this operation is merely palliative is a false one and calculated to do immense harm. He believes that it is incumbent upon us to impress upon the laity the necessity of an early and radical operation as the only hope of cure, as the smallest nodule in the breast may become a source of the greatest danger to life.

Cancer occurring in Acid Parts of the Body. By Dr. A. L. Benedict.

After-treatment of Tenotomy. By Dr. Alexander Duane.

Interesting Case of Syphilis; Epithelioma. By Dr. L. Blake Baldwin.

The Lancet, April 14, 1900.

Some Cirrhoses of the Liver. By Dr. W. B. Cheadle.—The third of the Lumleian Lectures. (See abstract of the *British Medical Journal* for April 14th in this number of the *Journal.*)

The Typhoid Bacillus and Typhoid Fever. By Dr. P. Horton-Smith—The third of the Goulstonian Lectures.

Plague Viewed from Several Aspects. By Dr. W. J. Simpson.—An address delivered before the Southwest London Medical Society.

A Case of Spontaneous Rupture of the Heart and Hæmorrhage into the Pons Varolii. By Dr. P. T. Goodman.—The writer reports a case of spontaneous rupture of the heart in a woman of middle age, following moderate indulgence in alcohol. When first seen the woman was profoundly comatose, her pupils being contracted and insensible to light. Death took place in five hours, and at the autopsy there was found a rupture of the left ventricle two inches and a quarter long, terminating at the apex of the heart over the sæptum. The rupture was complete only for a quarter of an inch at its lower end. There were no microscopic signs of fatty degeneration. There was also a hæmorrhage into the left side of the pons Varolii, as large as a walnut. The absence of præcordial pain was accounted for by the hæmorrhage into the pons having taken place before the cardiac rupture. Attention is drawn to the similarity of the symptoms of hæmorrhage into the pons Varolii to those of opium poisoning.

Experiments on Intestinal Suture. By Dr. W. Edmunds and Dr. E. C. Stabb.—The writers report the results of a series of experiments to determine the best method of circular suture of the intestine. The methods contrasted were Halsted's inflated rubber cylinders, Murphy's button, and Laplace's intestinal forceps. Seven experiments were made on dogs by each method. The results were entirely in favor of Halsted's method, all the dogs operated upon recovering. With Murphy's button only five recovered, with Laplace's forceps only four.

Gunshot Wound of the Head; Perforation of the Brain; Recovery. By Dr. D. Durran.—The writer reports the case of a boy who was shot through the head with the bullet from a Morris tube and recovered. The bullet entered in the neighborhood of the left parietal eminence and was extracted from under the scalp just above the right ear. Complete recovery took place in two months, the most persistent symptom being blindness of both eyes with widely dilated pupils.

Intestinal Obstruction Caused by Meckel's Diverticulum and Relieved by Operation. By Dr. H. J. Mackay.—The writer reports the case of a young woman, suffering from tuberculosis, who was operated upon for acute intestinal obstruction of two days' duration, with pain and stercoraceous vomiting. A knuckle of small intestine was found to be tightly bound down by a cordlike structure at the floor of the abdominal cavity. This cord was found to originate from the wall of the cæcum a little above the ileo-cæcal valve. This diverticulum was not patent; it was divided between ligatures and prompt recovery took place.

The Lancet, April 21, 1900.

The Modern Treatment of Uterine Fibroids, with Table of Sixty-eight Consecutive Cases of Hysterectomy. By Dr. W. Duncan.—After speaking of the frequency and symptoms of this affection (hæmorrhage and pressure symptoms), the writer considers the indications for operation. The following conditions call for interference: 1. Menorrhagia or metrorrhagia. 2. Marked pressure symptoms. 3. Increasing size of tumor, especially if near the menopause. For moderate hæmorrhage the administration of ergot may be tried. Electricity is rarely of service. The following surgical procedures are next considered in turn: Curettage of the endometrium; removal of the ovaries and tubes; vaginal enucleation or morcellement; myomectomy, and, finally, hysterectomy, which may be vaginal or abdominal, total or partial, extraperitoneal or intraperitoneal. The writer then gives a table of sixty-eight consecutive cases of abdominal hysterectomy for uterine fibroids, with four deaths. Three of the fatal cases died of cardiac failure, the fourth of pulmonary embolism. Where the operation is uncomplicated the writer does not think the mortality should be more than one or two per cent.

Coxa Vara. By Dr. C. B. Keetley.—The writer defines coxa vara as a deformity of the upper epiphyseal region of the femur in which the head of the bone sinks to a lower level than normal, in extreme cases almost touching the lesser trochanter. He discusses its symptoms, prognosis, and treatment, and states his belief that the affection is closely associated with, if not always due to, rickets. He claims priority for this latter view, having described a case of coxa vara as due to rickets in September, 1888.

Epileptic Attacks Preceded by Subjective Auditory and Taste Sensations, probably due to a Tumor of the Left Temporo-sphenoidal Lobe. By Dr. J. M. Clarke.—The writer reports the case of a woman, aged forty, who suffered from epileptic attacks, which were preceded by sensations of hearing a band playing, of a metallic or nasty taste in the mouth, etc. She also complained of headache, giddiness, and nausea, and was mentally dull. There was moderate optic neuritis, most marked on the left side, and distinct weakness of the right arm and leg. Syphilitic treatment gave no relief. She grew more and more drowsy, and finally became comatose and died. No autopsy. A diagnosis of tumor of the left temporo-sphenoidal lobe was made.

On the Causation of Nervous Symptoms in Typhoid Fever. By Dr. A. G. R. Foulerton and Dr. H. C. Thomson.—The writers discuss the causation of symptoms of cerebral irritation in typhoid fever, and state their belief that they are due to typhoid toxæmia. They found that even in cases with very marked cerebral symptoms, the ganglion cells of the cerebral cortex remain unaltered, or at most—and with meningitis as a complication—may show only slight departures from the normal. Experimental infection of guinea-pigs and rabbits with typhoid toxines and living cultures of the typhoid bacillus also failed to cause any constant and definite structural alterations of the ganglion cells of the central nervous system that could be demonstrated by Nissl's method of staining.

The Production of Local Anæsthesia in the Ear. By Dr. A. A. Gray.—The writer recommends the following solution as a most efficient local anæsthetic in diseases of the ear: Cocaine hydrochloride, five parts; dilute alcohol, fifty parts; aniline oil, fifty parts. A few drops allowed to run into the ear will penetrate and anæsthetize small polyps and granulations, and render all manipulations within the ear practically painless.

On Backache as a Symptom of Rectal Disorder. By Dr. E. H. Freeland.—The writer calls attention to the fact that backache is an important and often the only symptom of disease of the rectum. Its cause should always be investigated, and no such investigation is complete without a rectal examination. Backache is often caused by the formation and retention of scybala in the rectum; these soon cause catarrh, and so a vicious circle is created. He reports five cases in which backache had been almost the only symptom: one of rectal ulcer, one of rectal cancer, and three of retained fæcal masses.

Note on the Influence of the Temperature of Liquid Air on Bacteria. By Dr. A. MacFadyen and Dr. S. Rowland.—The writers make a further report on this subject, the various micro-organisms examined being exposed to the temperature of liquid air for seven days. As in the previous note (see abstract of the *Lancet* for March 24th in this *Journal* for April 7, 1900), there was no appreciable impairment of their vitality. The organisms employed were *Bacillus typhosus, Bacillus coli communis, Bacillus diphtheriæ, Bacillus proteus vulgaris, Bacillus acidi lactici, Bacillus anthracis* (sporing culture), *Spirillum choleræ asiaticæ, Staphylococcus pyogenes aureus, Bacillus phosphorescens,* a sarcina, a saccharomyces, and unsterilized milk.

The British Medical Journal, April 14, 1900.

Non-diabetic Glycosuria. By Dr. R. Saundby.—The writer reports twenty-two cases of glycosuria in which all other symptoms of diabetes (polyuria, wasting, and thirst) were absent and which he considers non-diabetic. In testing the urine for sugar he recommends filtering the urine several times through animal charcoal, such filtration removing all other reducing substances except sugar, while any reaction due to sugar is more marked than before. Of his twenty-two cases, six came under the head of alimentary or physiological glycosuria, there being no symptoms, apart from the state of the urine, that there was anything wrong. In four cases there was a history of alcoholic intemperance; in two of the four the sugar disappeared upon total abstinence from alcohol. In four cases the presence of sugar in the urine was associated with enlargement of the liver ("hepatic cirrhosis"), in two with gastric disturbances, in four with neurasthenia, and in two with senile decay of the aged.

Some Cirrhoses of the Liver. By Dr. W. B. Cheadle.—In the third of the Lumleian Lectures on this subject, the writer deals with the treatment of these disorders. With the exception of in the early stages of syphilitic cirrhosis, the most that can be hoped for is to maintain the *status quo.* Absolute abstention from alcohol is a prime necessity in all cases, even syphilitic. In the last stage of exhaustion, however, the withholding of alcohol hastens the end. Care should be taken that the diet is easily assimilated. Mercury and the iodides should be given steadily in all cases where the syphilitic factor may by any possibility be concerned, and continued for a long time. Where there are cardiac weakness and dilatation, digitalis is often of great service. In the treatment of ascites, diuretics and purgatives are of no value, but restriction of fluids in the dietary is sometimes of service. The only reliable method of removing the fluid is to draw it off by paracentesis. In many cases this operation is not performed early enough. The writer reports five cases (three hypertrophic alcoholic, two syphilitic) in which paracentesis was followed by apparent cure; the liver remained enlarged and hard in all, but the ascites did not return and the patients were able to lead ordinary lives. The writer has seen four deaths from peritonitis following tapping, two were before the days of asepsis, however. Only those cases which are kept under constant medical care after tapping seem to do well. The writer believes that "cardiac inefficiency, even when not advanced enough to disclose itself by the usual physical signs of heart disease or a general dropsy, is a factor in the causation of the more acute cirrhosis of the enlarged alcoholic liver and of the ascites which may accompany it."

On Diphtherial Stomatitis. By Dr. E. F. Trevelyan.—The writer reports two cases of primary diphtherial stomatitis, one in a man aged thirty-five years, and the other in a girl aged fifteen years. Such cases are very rare, the stomatitis being almost always secondary to faucial diphtheria. Of four hundred cases examined by the writer, in only two was the membrane stated to be in the mouth. A membranous stomatitis may be due to several different microbes, and it is impossible to differentiate one due to the diphtheria bacillus by mere inspection of the mouth. Hence the importance of bacteriological examination.

Swelling of the Eyelids with Intermittent Albuminuria in Children. By Dr. T. Fisher.—The writer reports three cases of swelling of the eyelids associated with the occasional presence of albumin in the urine, two cases of occasional swelling of the eyelids but without albumin in the urine, and one case of occasional swelling of the eyelids in which albumin was always present in the urine. In none was there a history of scarlet fever. It may be that such cases as these are early stages of the insidious form of nephritis with small white kidney, but the writer looks upon occasional albuminuria and swelling of the eyelids in children as evidence only of vasomotor instability or defective metabolism.

The Seat of Pain in Biliary Colic. By Dr. J. H. Keay.—The writer's observations have led him to conclude that the seat of pain in biliary colic is seldom, if ever, correctly described in text-books. When a calculus is trying to pass through the bile ducts, the pain begins about the tenth or eleventh dorsal vertebræ, gradually passes around, and, though not quite disappearing, gives place to excruciating pain in the right and often in the left hypochondrium, middle or lower abdomen, frequently above the right nipple, but practically never the right shoulder. Pain beginning in the right hypochondrium is not followed by the passage of gallstones. Under chloroform the distant or referred pains gradually cease, and there is left only a distinctly localized pain at the bile ducts. In doubtful cases the use of chloroform in this manner may furnish valuable information.

Notes on a Case of Bright's Disease Complicated with Gangrene. By Dr. A. D. H. Leadman.—The writer reports a case of chronic interstitial nephritis in a man, aged forty-six years, in which gangrene of both legs took place with resultant sepsis and death. Gangrene as a complication of nephritis is very rare.

A Case of Glandular Fever Associated with Erythema Nodosum. By Dr. B. Thornton.—The writer reports a case of glandular fever (*Drüsenfieber*) in a girl, aged five years and a half, in which a typical eruption of erythema nodosum appeared on the legs on the fourth day of the disease. Anæmia was marked and convalescence very slow. In this case the rheumatic poison causing the erythema nodosum is strongly suggested as being also the cause of the typical attack of glandular fever.

Gazette hebdomadaire de médecine et de chirurgie. April 8, 1900.

Nasal Obstruction in the Newborn.—M. Leopold Chauveau says that an eczematous impetigo may by its secretions occlude the nares of a newborn infant. An acute coryza may be responsible for the obstruction. For the latter condition, he advises the instillation three or four times daily of three or four drops of one of the following solutions, the head being held well back:

℞	Oil of vaseline	1½ ounce;
	Resorcin	15 grains.

or

℞	Glycerin	1 ounce;
	Biborate of sodium	1½ drachm.

Other causes of nasal obstruction may be a pseudomembranous coryza, or a coryza in an eruptive fever or due to a foreign body. Syphilitic coryza is a frequent cause and must be treated locally by means of instillations and generally by inunctions of mercury and the administration of iodide of potassium. Adenoid vegetations must be removed, and retro-pharyngeal abscesses, if they cause obstruction, must be opened. Congenital occlusion of the nares by a membrane is to be treated by excision of the membrane.

Gazette hebdomadaire de médecine et de chirurgie, April 11, 1900.

Gangrenous Lymphangeitis of the Scrotum in an Infant. By M. Broca.

Gazette hebdomadaire de médecine et de chirurgie, April 15, 1900.

Hereditary Symmetrical Anomaly of the Hands.—M. Klippel and M. Rabaud report the case of a man whose fourth metacarpal bone on each hand is very much shorter than his other corresponding bones. His five children have the same deformity as had his father, but his grandparents, so far as known, did not possess it. The authors regard the case as illustrating well the heredity of a characteristic recently acquired. They place the deformity under the group of ectrodactylics. Their article is interesting from an evolutionary standpoint, as they lay great stress upon the remarkable heredity of an acquired characteristic of the father being reproduced, by a perfectly formed mother, in all his children.

Ocular Complications of the Grippe. By M. Alphonse Pechin.

La Presse médicale, April 11, 1900.

Prophylaxis of Rheumatic Endocarditis.—M. Ernest Barié agrees with other writers that the salicylate of sodium must be given in sufficient doses at the beginning of every attack of acute articular rheumatism. The cardiac lesions common to this disease may be thus avoided at times. For the external measures prophylactic for endocarditis, wrapping the patient in flannel is advised in the acute stages, and warmth to the affected joint is counseled. Scarifying cups over the præcordial region are recommended, or some other form of counter-irritation. In the adult, iodide of sodium or potassium may be given, with a tonic diet to obviate the debility caused by prolonged use of the iodides.

Le Progrès médical, April 14, 1900.

On Hepatism.—M. F. Glénard means by hepatism a group of diseases—gout, obesity, biliary lithiasis, gravel, diabetes—the relationship of which is proved by the fact that they exist coincidently, or follow each other, appearing in one individual, or being transmitted by him, one or the other, to his descendants. A common morbid principle, which we call a diathesis, must lie at the bottom of this condition. The localization of this group of diseases of nutrition is in the liver. The characteristics of the diathesis are shown by regular periodical, daily or nightly, disturbances of the digestive apparatus of which the liver is the preponderating organ, acting with the periodicity of the digestive functions, disturbances of sleep, and anomalies of excretion. The causes are disturbed function of the liver; primarily, in the individual or his ancestors, disease of the liver, intoxications or auto-intoxications, infections, psychical shock or traumatism. The diathetic treatment consists of purgatives, alkalies, sometimes diuretics, dietetic regimen of the diseases of the liver. The author proceeds to prove his position by advising a regular systematic palpation of the liver in all nutritional diseases, by a minute analysis of the patient's subjective symptoms, and by a careful comparison of the subjective and objective symptoms of these diseases with diseases of the liver, at the same time indicating that the satisfactory treatment of these conditions is that of hepatic disease.

Lyon médical, April 8, 1900.

Deafness. By M. M. Lannois.

Anuria due to Calculus; Nephrotomy.—M. Rafin reports such a case in which a calculus was removed from the pelvis of the kidney by nephrotomy. The patient made a thorough recovery.

Lyon médical, April 15, 1900.

A Study of the Frequency of Goître at Different Ages.—M. Lucien Mayet finds that in general goître is most frequently seen between the ages of forty-six and fifty; in men alone between the ages of twenty-one and twenty-five, and forty and fifty; and in women between forty-five and fifty. It occurs oftener in women than in men, but appears later in life. Young men seem to be most susceptible, and it appears in them at the age when they usually begin the struggle of life in professional or mercantile careers.

Journal des praticiens, April 7, 1900.

Surgical Treatment of Ocular Complications of Facial Paralysis. By M. Albert Terson.

Mechanism of Intracranial Infection from Middle-ear Disease. (Review of part of M. H. Luc's book on *Suppuration of the Middle Ear.*)

Berliner klinische Wochenschrift, April 9, 1900.

The Plague in the Light of Recent Researches.—Dr. P. Frosch believes that with the knowledge of the present day, energetic measures scientifically and practically applied will suffice to overcome and stamp out the bubonic plague. He points out the positive knowledge of the life history of the plague bacillus as the means which sanitarians must employ to rid the world of the disease. (To be continued.)

Selected Points of Diagnosis and Treatment of Pulmonary Tuberculosis.—Dr. H. Senator points out that, although the demonstration of the tubercle bacillus in the sputum is the deciding element in the diagnosis of pulmonary tuberculosis, yet the diagnosis can be established in the absence of this proof by the leading symptoms of the disease. Hæmoptysis and an apical catarrh are two of the leading signs. The source of the appearance of the blood must be carefully sought in the nose, mouth, and pharynx, and hæmatemesis must be excluded. Injuries, circulatory disturbances, or inflammatory processes in the lungs must be carefully ruled out, and the examination must exclude neoplasms, aneurysm, the so-called "vicarious hæmoptysis," and parasitic invasions, as by actinomyces or aspergillus. An important point in the diagnosis of catarrh of the apex lies in the fact that dullness is rarely marked while the auscultatory changes are distinct. Syphilitic processes must be excluded by the history and the patient's appearance, although this sometimes offers extreme difficulty. (To be continued.)

Use of Apparatus in Diseases of the Central Nervous System.—Dr. Paul Jacob says the purposes of the use of apparatus in the treatment of diseases of the central nervous system are threefold: 1. To devise means by which groups of muscles which are functionless on account of disease may be replaced by apparatus until the patient is able to use the muscles voluntarily. 2. To support muscles which are not completely incapable of performing work. 3. To assist healthy muscles in carrying out the extra labor devolving upon them when neighboring groups of muscles suffer from paralysis or paresis.

Secretion of Water in Diseased Kidneys.—Dr. G. Kövesi and Dr. W. Rath-Schulz conclude a paper on this subject as follows: 1. In parenchymatous nephritis, the power of excreting the aqueous elements of the urine is diminished. 2. In contracted kidney, this power is usually entirely retained, sometimes more or less water being eliminated, as is the case (3) in the kidneys of cardiac disease so long as compensation is good. 4. Congested kidneys present in this respect a mean between the extremes of a chronic parenchymatous nephritis and a secondary contracted kidney.

Deutsche Medizinal-Zeitung, April 16, 1900.

Uterine Cardiac Disturbances. — Dr. E. Heinrich Kisch speaks of the cardiac disturbances of a functional nature reflected from the uterus, and calls attention to the organic diseases of the heart which may originate from a uterine tumor, especially a myoma. All these cases he finds markedly benefited by a thorough but careful system of treatment at a bathing resort. He points out that in the case of cardiac disturbances in women with no well-marked ætiological elements, the genitals must be carefully examined, for the fault frequently lies in the uterus.

Wiener klinische Wochenschrift, April 12, 1900.

The Relation of Korsakoff's Psychosis to Acute Hæmorrhagic Polioencephalitis (Superior). By Dr. A. Elzholz.

Contribution to the So-called "Retrograde Incarceration."—Dr. Dominick Pupovac recalls Maydl's definition of retrograde incarceration, in which a hernia of the appendix or Falloppian tube is found, one portion of the organ lying in normal condition in the hernial sac, the other part being incarcerated and lying toward or in the abdominal cavity. He reports two cases, one of a retrograde incarceration of the vermiform appendix, the other a similar condition of the omentum. Although that part of the organ, says the author, which lies in the hernial sac must be designated as the incarcerated part, its freedom from injury is due to the fact that the blood-vessels are constricted, exercising a circulatory disturbance in the portion lying in the abdomen or toward it, the afferent vessels leading to the sac not being compressed.

Die medicinische Wochenschrift, April 9, 1900.

French Views on the Treatment of Wounds. By Dr. P. Shober.

Die medicinische Wochenschrift, April 16, 1900.

Measure of Blood Pressure with Gärtner's Tenometer. — Dr. A. Fränkel speaks of the advantages and disadvantages of this new instrument.

Fermentation Saccharometer for Undiluted Urine. (Review.)—Dr. T. Lohnstein describes a new saccharometer which depends on the principle of Einhorn's apparatus, which is so arranged that undiluted urine may be used.

Prager medicinische Wochenschrift, April 5, 1900.

Auto-digestion of the Pancreas during Life.—Dr. H. Chiari reports a third case of auto-digestion of the pancreas during life, which he regards as not very rare as an agonal event. In the present case, the pancreas was a little larger than usual and was irregularly streaked red. On section, there was a sharply defined focus bluish-green in its centre, yellowish-brown in its periphery, of a soft consistence. Two other such foci were seen—one near the head, the other near the tail of the organ. All were marked by a surrounding hæmorrhagic infiltration. On further section, many such foci were observed. Microscopically, these areas showed necrosis in the acini and their surrounding tissue. Leucocytes in abundance were found at the edges of the areas, and in some places a profuse hæmorrhage was seen extending up to the surface of the pancreas. Here and there minute areas of fat necrosis were observed, but Chiari thinks this stands in no causal relation to the auto-digestion.

Vertigo.—Dr. Singer recommends for the treatment of vertigo the salicylate of quinine, but is not sanguine as to its benefits. He prefers the method of Trousseau for the so-called "gastric vertigo." A tonic diet is ordered and the patient must drink every morning an infusion of thirty grains of quassia to a cup of cold water, which has stood twelve hours. After each meal, this prescription is given:

℞	Bicarbonate of soda	1½ grain;
	Carbonate of magnesia	1½ grain;
	Prepared chalk	3 grains.

This treatment is continued for six days and is repeated at an interval of ten days. In the interval, an alkaline mineral water is administered and the appetite is stimulated by the strychnine preparations, if necessary. Singer has found the syrup of the hypophosphites useful in the treatment of vertigo in neurasthenia. If the vertigo is dependent on arterio-sclerosis, small doses of digitalis and iodide of potassium are useful. Diuretin and ergot are also of occasional benefit.

Wiener medizinische Blätter, April 12, 1900.

Septic Endocarditis following Acute Articular Rheumatism.—Dr. Alexander Waringer, in reporting two fatal cases, gives the two main groups into which septic endocarditis as a sequel of acute articular rheumatism may fall. The first division embraces those cases in which a sudden pericarditis or myocarditis, developing from a preexisting endocarditis, leads to sudden death. There are sudden attacks of asphyxia, collapse, and syncope. Or, the cardiac lesion may begin very mildly and suddenly assume a virulent character, ending with a fatal cerebral embolism. Sometimes acute cardiac dilatation kills the patient. In the second group of cases, the patients suffer for a long time from rheumatism with an old endocarditis upon which, as a basis, a new, septic endocarditis arises, characterized especially by a rapidly progressive invasion and by a tendency to necrosis, ulceration, and deposit of vegetations upon the valves. Dr. Waringer's two patients presented no previous cardiac disease, as a very careful examination proved, both developing a fatal septic endocarditis during their first attacks of rheumatism.

The Significance of Physical and Dietetic Methods of Treatment. By Dr. Julian Marcuse.

Surgical Treatment of Basedow's Disease. — Dr. J. Schulz continues his historical review of the symptoms and treatment of the disease.

Centralblatt für Gynäkologie, April 14, 1900.

A Reply to Karl A. Herzfeld's and Richard von Braun-Fernwald's Articles. By Dr. P. Zweifel.

Is the Occurrence of Adenomyomata of the Epoophoron Demonstrated? By Dr. Ludwig Pick.

On a Relation between the Sternum and the Conjugata. By Dr. J. Kurz.—Reflecting on the various proportions between different parts of the human body laid down by sculptors and figure painters, and conceiving the idea that rhachitis affecting the pelvis probably would affect the bones of the thorax also, the author has measured the distance between the junction of the manubrium with the body of the sternum above and the lower end of the body of the bone below in nearly five hundred women, and had several of his colleagues measure, in his absence, the conjugata vera. The result has been to show that in the vast majority of cases the measurements have corresponded almost exactly. In some instances it is not easy to ascertain the precise situation of the lower end of the sternum. In such cases the median point in a line drawn between the centres of the sternal articulations of the seventh ribs may be taken as showing it.

Centralblatt für innere Medicin, April 14, 1900.

Some Remarks on Aspirin. By Dr. Friedeberg.—The author's experience with aspirin (acetylsalicylic acid) leads him to the conviction that it is quite as efficient as salicylic acid, and sometimes more so, and is wholly free from unpleasant effects. It is more effective in acute articular rheumatism than in chronic rheumatism or gout. He has employed it with varying success in neuralgic affections. He has found it serviceable in the incipient stage of influenza in which the stomach was affected. In a case of sciatica it gave good results after salipyrine had failed. In a case of migraine it proved of no use. It is most valuable as a sorbefacient in cases of extensive effusion, as in serous pleurisy. It should always be employed with patients on whom salicylic acid exerts an unpleasant action and with those who have an irritable stomach or any disease of the heart or ears. In such cases it should be administered from the start, without first giving salicylic acid an opportunity to do harm. Nothing unfavorable results from its administration for weeks at a time in daily amounts of from sixty to seventy-five grains.

Centralblatt für Chirurgie, April 14, 1900.

A Head Clasp for Quickly and Surely Enveloping the Head with Sterilized Gauze, etc. By Dr. Karl Schuchardt.—The author's device is very simple, consisting of a light metallic spring reaching from a point just above the root of the nose to a point well down on the occiput. At each end there is a pad, and about midway between the occipital extremity and the vertex there is a little buttonlike handle. A large triangular piece of gauze is folded over the forehead and the hairy scalp, and a broad strip of the same material covers the face below the eyes, its ends being brought together at the back of the head. The clasp holds both securely in place without making uncomfortable pressure. It is suitable for women as well as men, as it clears the coiffure. It is meant to be used in furtherance of asepsis.

Rivista critica di clinica medica, April 7, 1900.

Concerning the Diagnosis of Rabies. By Dr. G. Daddi.—The writer emphasizes the importance of making an early diagnosis of rabies, and comes to the following conclusions regarding the best means of diagnosis: 1. That histologic examination is the best method of determining whether or not an animal that gives suspicious signs is hydrophobic. This is determined by the complex of alterations that is found in the brain, the cerebellum, the spinal cord, and the ganglia of the spinal nerves. The peculiar changes described by Van Gehuchten and Nelis in these ganglia may be of great assistance in diagnosis. 2. That a negative result is of greater absolute value than a positive. A normal nervous system can not be present in a hydrophobic animal. Such examinations are more conveniently conducted during the cold season than during the summer, for putrefaction changes the aspect of the tissues, especially those of the nervous system.

Concerning the Influence of Diet upon the Quantity of Ethereal Extract obtained from the Blood. By Dr.

Luigi d'Amato.—The study of the amount of fat contained in the blood is still an unexplored field in biologic chemistry. One of the most interesting questions in this connection, from a physiological as well as from a practical point of view, is the influence of various articles of diet upon the amount of fat in the blood. According to the researches of Hanriot, Camus, Cohnstein, and Michaelis, the blood has the property of saponifying the fat, and of destroying it—a function that is of prime importance in the metabolism of fat. The blood then must not be regarded as a liquid which is, so to speak, passive, and the fatty content of which is regulated by the amount that is absorbed from the chyle or that comes from the tissues, but it must be considered as a living tissue, capable of modifying and of partly destroying its fatty constituents. The author believes that experiments conducted in this line will clear up some of the problems of nutrition. He reviews the work of Lummert and Hepner, and declares that it is necessary to conduct these experiments with more accuracy than has been done by these observers. The writer's experiments were performed as follows: A dog is fed on a mixed diet of meat, bread, and a small quantity of fat. After a few days of such feeding, and twenty-four hours after the last meal, the dog is bled from one of the femoral arteries, and then again fed with the same diet in order to replace what he lost by the bleeding. After a few days the animal is fed upon rabbit's meat that has been deprived of all bones and visible fat. A few days later, and twenty-four hours after the last meal, a second bleeding. The mixed diet is then resumed in order to bring the blood again to its normal condition. Finally the dog is put on an exclusively carbohydrate diet for a few days, after which he is bled once more.

The writer used the methods of Dormeyer and of Derking for extracting the fat from the blood. These are the most exact analytic processes known for this purpose, but he obtained even more accurate results by employing dry extraction of the residue after using Derking's method. (To be continued.)

Riforma medica, April 6, 7, and 9, 1900.

Concerning the Bacteriology of Influenza. By Dr. Arnaldo Cantani.—Cantani, after a clinical and bacteriological study of a large number of cases of influenza in Cardarelli's clinic in Naples, concludes that there is no doubt as to the specific nature of Pfeiffer's bacillus. He gives a brief review of the literature of the subject, and states that in thirty persons who were in perfect health, and who had not had influenza for at least a year previously, he did not find the bacillus of influenza in the sputum. He concludes that the bacillus of Pfeiffer can not exist in the mouth of healthy individuals without giving "some account of itself." The frequency with which the bacillus of influenza is found in the sputum of tuberculous persons has been noted by many observers. Cantani found Pfeiffer's germ in seven cases out of forty tuberculous sputa examined—in other words, in 17.5 per cent.—and all the patients in whose sputum both germs were found had suffered at one time or another from influenza, the attack of grippe usually considerably aggravating their condition. The writer further examined the sputum of forty patients suffering from catarrhal broncho-pneumonia, and found Pfeiffer's bacillus in only ten of these. Consequently, it is not right to attribute to influenza so large a percentage of broncho-pneumonias as is commonly done.

Cantani also finds that there exist clinical forms of disease simulating exactly the picture of influenza, and yet due to other germs, as no influenza bacilli are found in the sputum. In such cases the examination of the sputum is the only means of positive diagnosis. In fact, headache, prostration, and rheumatoid wandering pains are common to a number of bacterial infections—for example, intestinal infection due to the *Bacillus coli communis*. Has not this latter so often and so well simulated influenza that some clinicians have named this condition the gastric type of influenza?

In speaking of the frequency with which the bacillus of Pfeiffer is found in influenza, the writer says that often a repeated examination of the sputum is necessary before a positive result is obtained. It is to be noted that the bacillus is not found with greater frequency in simple chronic bronchitis during an epidemic of the grippe. In one hundred and thirty cases he only found the germ eleven times, and always in patients that had previously suffered from influenza. The persistence with which the bacillus is found in chronic diseases of the air-passages is quite marked; in one case the writer found Pfeiffer's germ in the sputum of a person suffering for years from chronic bronchitis, seven months after the last attack of influenza. In typical cases of influenza, Cantani found the germ in twenty-seven cases out of thirty, in the sputum or in the nasal secretion. The examination of the blood, the urine, and the fæces for Pfeiffer's bacillus gave negative results.

In regard to the specific nature of the germ, Cantani performed the following experiment: He injected very small quantities of pure culture of the bacillus into a healthy man, and the resulting reaction showed that the intoxication produced by the germ probably depends upon the poisons contained in the bodies of the bacilli, as well as upon the action of the hypothetic toxines eliminated by this organism.

The writer does not believe that the agglutination test is of positive diagnostic value in influenza, either in the typical or the aberrant forms. He also found that Pfeiffer's classification into true and pseudo-influenza bacilli is not supported by experimental evidence. In old cultures the true germ often becomes so modified morphologically that it assumes the larger size, width, and other peculiarities of the so-called pseudo-bacillus.

He believes that it may be possible to transform the true bacillus into this modified form by cultural methods, and that the so-called pseudo-bacillus is merely a degenerate form of the true germ. It would be better to apply the name pseudo-influenza bacillus to certain other germs that occur in the sputum of grippe patients, and that are distinguished from Pfeiffer's bacillus and from his so-called pseudo-bacillus by the fact that they grow upon the ordinary culture media, and do not require the admixture of blood, etc., as do the former. He has found such germs occasionally, and describes two species. The first was a very minute organism that resembled in every respect the bacillus of Pfeiffer, so far as morphology was concerned. They were found in the mouth of a healthy person. He found that this germ grew (although not so abundantly as on blood-agar) on ordinary nutritive agar, and thinks it is identical with the recently described *Bacillus salivæ minutissimus*. The second germ was a trifle larger than the first, and resembled the bacillus of Pfeiffer still more closely.

It grew on both blood-agar and on ordinary nutritive agar.

Gazetta internazionale di medicina pratica, March 31, 1900.

A Contribution to the Doctrine Concerning Traumatic Hematomyelia. By Dr. M. Bernhardt.

Albuminuric or Ascitic Toxæmia. By Dr. G. R. Filocamo.—Dominicis has proposed the name albuminuric or ascitic toxæmia for those species of albuminuria that do not depend upon anatomic alterations in the kidneys, but upon qualitative changes in the blood in which the kidneys participate together with all other tissues or organs of the body. These alterations in the blood give rise to a tendency to ascites, in virtue of which there is an increase in the process of transudation all over the body, and therefore also in the kidneys, where this transudation appears in the normal secretion of this organ as albuminuria of great intensity. The kidneys in such cases do not assist in producing the albuminuria, and this condition therefore was styled by Dominicis hematogenous albuminuria, which is distinguished from nephrogenous albuminuria by the fact that the amount of albumin in the latter class of cases is not so great.

There are cases of pronounced albuminuria accompanied by marked œdema, effusions into the pericardium and into the pleura, etc., which disappear as soon as the cause is removed and again appear when the cause returns. Such cases can not be considered to be due to pathologic changes in the kidneys.

The writer emphasizes the fact that the alterations in the blood which produce the albuminuria and the ascites are due to the presence of toxines which are derived from the gastro-intestinal tract. This fact has been demonstrated beyond all doubt experimentally by Dominicis. In man intestinal antiseptics will cure such cases, and cause the albuminuria and the ascites to disappear. If the treatment is suspended for a time, and the patient allowed to eat beyond his digestive powers, these phenomena soon reappear. The writer relates three cases in which he observed the above conditions.

A New Method of Exposing the Ventricles of the Heart. By Dr. Prospero Guidone.—In operations upon the heart one must use that incision which will give the most rapid and convenient access to the part of the ventricle with which we wish to deal. If the proverb *Periculum est in mora* can be applied to all traumatic lesions of the vascular system, in those of the heart every minute gained is of inestimable value.

The author makes a transverse incision, from ten to twelve centimetres in length, in the fourth intercostal space on the right side, extending from the sternal border to the mammary line, and following the lower border of the fourth rib. From the inner extremity of this line a second incision is made, which follows the border of the sternum and is about twelve centimetres in length. These incisions are continued through all the tissues down to the rib cartilages, and the fifth, sixth, and seventh cartilages are resected with a bistoury. A third incision is then made from the lower end of the vertical one, skirting the lower border of the ribs for about eight centimetres. A rhomboidal flap is thus obtained. The advantages claimed for this operation are: 1. Its facility of execution. 2. It can be performed in old people as well as in young, owing to the elasticity of the cartilages resected. 3. It gives convenient access to both ventricles, and it is not followed by a deformity of the right side of the chest. The writer reports three cases in which this method was used.

A Case of Intestinal Obstruction due to Reduction en Masse of an Inguinal Hernia. By Dr. Carmello Mole.—The patient was a man sixty years of age, and had suffered from an inguinal hernia which was reduced by forcible taxis by a physician. Symptoms of intestinal obstruction developed, and laparotomy revealed the presence of a loop of intestine which was inclosed by a resistant ring of peritonæum. The gut was freed and the abdomen closed. The patient died of collapse a few hours later.

Vialleton's Hypothesis Concerning the Dilator of the Pupil. By Dr. C. Frugiuele.

Vratch, March 25, 1900, O. S. (April 7, N. S.).

Pianist's Cramp and its Prevention. By Dr. I. V. Zabloudovsky.—In speaking of this professional neurosis, the writer says that it differs in some particulars from the habit cramps of violin players and of writers. While in the latter forms the patient only experiences pain when he is using his fingers in writing or in playing the violin, in pianist's cramp the pain persists when the hands are idle, and more or less incapacitates the person affected for other occupations requiring the use of the fingers. In pianists the disease often develops suddenly, while in violinists it is almost always insidious. The cause of the pain is the constant and immoderate stretching of the tendons of the fingers. Acute cases will get well with rest and systematic massage. Sometimes the disease becomes chronic, and in rare cases the pain may involve the arm, the shoulder, and even the back. In addition to the affection of the sensory nerves, pianists are subject to disturbances of the motor nerves of the fingers, and a paresis of one or more groups of muscles may accompany the pain due to overexertion of the fingers in playing the piano. Finally, actual paralyses may occur in the most severe cases. Neurasthenia is a frequent accompaniment of this trouble.

Zabloudovsky further emphasizes the fact that the violinist is better off than the pianist in several ways as regards habit cramp. The violinist always owns his instrument, while the majority of young girls who study the piano in a boarding school, etc., have to take turns at using the same instrument with other pupils, and thus are constrained to employ whatever opportunity they get to practise while the instrument is not in use. Again, a violinist can secure an instrument that is suited in size to the development of his hand, all makes of fiddles, with the exception of the Stradivarius, being made in several sizes, while the youngest and most delicate girl pupil must use the same size keyboard that the virtuoso with an athletic hand employs. An attempt has been made by a Hungarian manufacturer, Janko, to introduce a form of keyboard that obviates the necessity of stretching the fingers in playing difficult chords, by the use of a series of keys arranged in tiers above one another. This instrument never came into general use, as it makes playing too mechanical and does not allow the artistic expression that is possible with the ordinary keyboard.

The writer proposes the introduction of a piano keyboard that is three twentieths of the normal size, and in which each key is three twentieths of the width of the ordinary keys of the present type. This will enable a young girl with delicate hands to play without unduly stretching her fingers, and will prevent the occurrence of pianist cramp, which at the present time is almost endemic in schools of music.

Some Hygienic Problems in the Secondary Schools. By Dr. N. A. Zolotavine.—Apropos of the recent circular of the Minister of Public Instruction of the Empire concerning the reform of the system of secondary schools in Russia, the writer discusses a number of questions relating to the physical and psychic welfare of the pupils. He urges the necessity of numerous reforms in the sanitary condition of the schools, particularly: 1. The proper illumination of the class-rooms, and the removal of the predisposing causes of myopia. 2. The proper ventilation of schoolrooms. 3. The proper construction of school furniture. 4. The number and duration of school exercises, and the assignment of home work, the frequency of examinations—in a word, the factors producing neurasthenia. 5. The proper adaptation of the subjects of study to the mental powers of pupils, and to their individuality. 6. Proper attention to the physical education of the children. 7. Inspection of schools and the prevention of contagious diseases.

The writer then discusses these problems at length. In summing up, he says that the two elements of mental overwork and unhygienic physical conditions lie at the root of the whole question.

Concerning the Regeneration of Ovarian Tissue. By Dr. V. I. Canell.—This preliminary communication of the writer deals with the question of the mode of repair of wounds of the ovary. Schmitz, in 1889, found that ovarian tissue regenerates but very slightly after wounds of that organ, and is for the most part replaced by connective tissue. Selesnjeff, in 1891, came to the conclusion after some experiments, which were, unfortunately, but few in number, that aseptic wounds of the ovary are usually followed by complete regeneration of the glandular tissue by means of caryomitosis of the ovarian cells. Rubinstein, in 1899, found that even if five sixths of the ovary is lost, a regeneration of the ovarian tissue may take place; but, unfortunately, this author only examined ovaries in which complete healing of the wound had taken place, and thus can not give us any information as to the process of repair.

Canell reports forty-four experiments upon the ovaries of rabbits. In some of these animals he wounded the ovaries under aseptic precautions; in others, he purposely infected the wound by smearing cultures of septic germs over the edges, or applied irritating substances, like turpentine, oil of organum, etc. After a period which varied from one to seventeen days he removed the ovaries and prepared sections for microscopical examination. In regard to *aseptic* wounds of the ovary, he came to the following conclusions: 1. The ovaries possess an enormous regenerative power. Superficial aseptic wounds heal after two days. 2. The healing of these wounds is not accompanied by the formation of granulation tissue, and no emigration of leucocytes is noted during the process of repair. 3. These wounds heal without scars. 4. The loss of substance is repaired by the multiplication of cells from the medullary portion of the organ, the cortex not participating in the process. The medullary cells multiply by caryomitosis. 5. The regenerative power of ovarian cells increases according to the degree of the wound. During the first few days after the injury no caryocinesis is noted. In slight wounds the fission-figures are present but feebly, while in the more severe forms the mitosis increases from day to day, and the number of figures reaches its maximum on the tenth day, after which it decreases. 6. Mitosis always occurs at some distance from the wound itself, showing that the cells nearest the injury undergo some change that robs them of the power of regeneration. 7. Mitosis is found not only around the site of the wound but throughout the organ.

Concerning the wounds that he had irritated by the application of turpentine or of sterilized culture of streptococci, he found: 1. That in these there is an emigration of cells in the first days after the injury. 2. That they heal by the formation of narrow scars. 3. The ovaries thus dealt with contain more mitotic figures, *cæteris paribus,* than do the aseptic wounds, because the irritants stimulate the reproductive activity of the cells.

In the ovaries that had been infected by virulent streptococcus cultures he found: 1. During the first days after the injury signs of inflammation are noted in the tissues around the wound. 2. There is more or less granulation tissue at the edges of the wound. 3. The necrosis which follows infection of the ovary affects certain areas of the ovarian tissue, at the periphery of which are found giant cells with numerous nuclei. 4. Such wounds heal by broad scars consisting of dense connective tissue. 5. Cells undergoing caryocinesis are found in the ovarian tissue beyond the areas of necrosis that surround the wound. The writer will communicate the further progress of his studies on the subject in a future paper.

Medical Statistics of Taschkent. By Dr. Schwartz. —Next to malaria, syphilis is the most common disease among the Kirgizes that constitute the native population of the city of Taschkent and the surrounding rural district. Very little is being done in the way of medical aid for this unfortunate, semibarbarous people. The district only boasts of one government physician, and has a few medical stations with only trained hospital stewards in attendance. The writer says that the whole race is literally perishing in the very sight of the Russian people.

Miscellaneous.

The Correlation of Sexual Function with Insanity and Crime.—Dr. MacNaughton Jones (*Medical Press and Circular,* January 31st; *Medical Age,* March 10th) arrives at the following conclusions: 1. The correlation of insanity and disordered sexual functions arising out of affections of the generative organs is a factor to be taken into serious consideration in the treatment of women mentally afflicted. 2. Where there is ground for the suspicion that some physical condition of the uterus or annexa exists which may produce or aggravate the mental affection, a careful examination, under an anæsthetic, if necessary, should be made. 3. In the investigation of criminal acts committed by women, either during the menopause or while the menstrual function is either active or suppressed, due weight should be given to the influence exerted by its irregularity or abeyance on the mind of the woman. In doing this her previous history and temperament have to be considered. 4. The special dangers of the climacteric period and the symptoms indicative of threatening climacteric mania must be recollected. The principal of these are moroseness and depression of spirits, attacks of hysteria, occasional hallucinations of sight and hearing (especially of smell), suspicions with regard to relations, unjust dislikes, unfounded apprehensions of some great crime committed or injury inflicted on them, and suicidal tendencies. Here again examination of the pelvic viscera is justifiable. 5. In operations on the female generative organs there is a greater predisposition to mental disturbance than after other operative procedures, but the post-operative insanity is generally of a temporary nature. 6. Women who have been previously insane are predisposed to a relapse by the development of disease in their sexual organs, and especially to such temporary recurrence of insanity after operation on these organs. 7. In order to anticipate suicidal impulse, and the commission of crime, the disordered mental symptoms exhibited at the menstrual epochs and at the climacteric should be carefully noted, and if the discharge or the cessation of the sexual function is attended by evidence of disease in the sexual organs, an examination of these should be made, when, if gross lesions are detected, operation should be resorted to.

Amputation of the Leg under Cocainization of the Spinal Cord.—Dr. William E. Lower (*Cleveland Journal of Medicine*, March) records a case of diabetic gangrene of the leg in which, on account of the great quantity of sugar in the urine, the age of the patient (sixty-four), and the very marked arteriosclerosis present, it was deemed advisable to amputate under local anæsthesia. With a long needle attached to an aspirating syringe he injected into the cord between the last dorsal and the first lumbar vertebra about four (? two—it is so stated in another part of the report) drachms of a solution of one fifth of one per cent. of cocaine. Immediately upon introducing the needle into the cord the patient felt a peculiar pricking sensation in the toes and in about three minutes had complete anæsthesia of both feet and legs. Motion was not entirely abolished, but Dr. Lower was able to go on and do the amputation, which was a circular amputation at the upper third, and was completed in twelve minutes, without the least evidence of pain. The patient knew nothing of the operation until Dr. Lower began to saw the bone, when he became conscious of what was going on and raised his head and looked at the operation. Not only was anæsthesia complete, but there was no shock whatever. All the afferent impulses were blocked and the pulse remained from 64 to 72 throughout the entire operation. Sensation was restored in twenty minutes. The author has been carrying on some experiments in this line, injecting the spinal cords of dogs and making examinations to see what would be the ultimate effect, whether there would be any impairment which would lead to bad after-effects. A fuller report is promised later. This is the first clinical case he has had opportunity to try.

The indications, says the author, as generally given, for local anæsthesia are merely the contraindications to general anæsthesia. While this is true it is not the only indication. Another and, it is believed, a more important indication is the prevention of shock incident to manipulation of the shock-producing areas—*e. g.*, in this case, the cutting of the large nerve trunks. Add to the shock produced by general anæsthesia that produced by nerve injury, in a case like this one, and the indications for local anæsthesia become paramount.

The patient suffered from headache during the night and showed a tendency to delirium several times. The temperature next morning was 100° F.; pulse, 90. The following day the temperature was normal and he was feeling quite well. He has progressed nicely since then and will be sent home in a few days.

In the discussion which ensued Dr. R. J. Wenner suggested that Dr. Lower referred to injection into the subarachnoid space, which method has recently been used in several laparotomies. He thought serious dangers might accrue from injecting into the substance of the cord; but Dr. Lower stated that injection into the cord in dogs had failed to materially affect the animals.

Proceedings of Societies.

THE SOCIETY OF THE ALUMNI OF THE CITY (CHARITY) HOSPITAL.

The President, Dr. William L. Stowell, in the Chair.

Meeting of December 13, 1899.

(*Concluded from page 663.*)

The Diagnostic Value of Lumbar Puncture in Meningitis.—Regarding this subject, Dr. Walter Lester Carr said that, as the direct connection of the subarachnoid space was recognized, it was known that the fluid between the membranes of the brain and the spinal cord could be withdrawn from one or from the other, but no particular clinical significance was attached to this fact for some time, until investigations were made to detect changes which had been produced by meningitis; then the so-called lumbar puncture was performed and the subarachnoid space tapped. The point selected for such puncture was usually in the lumbar region, and, therefore, the term lumbar puncture was used, but for all cases under general observation the second or third lumbar interspace was generally preferable.

To get the best position for such a puncture, the child was to be placed on the right side, with the spinal curve toward the operator, in this way spreading the vertebræ so that the greater angle between the vertebræ was toward the operator. In other words, the vertebræ approximated on the anterior surfaces and were separated on the posterior borders, so that in putting in the needle there was less risk of introducing its point into the vertebræ or into the side of the canal. A careful preparation should be made of the surface before the needle was introduced, the skin being carefully scrubbed and cleansed, an aseptic solution used, and the hands of the operator being in a state of cleanliness. The child then was on the right side with the prominence of the spine in such a position that the needle was easily introduced.

The ordinary hypodermic needle was not a safe instrument for making a puncture, because of the risk that it would be snapped off, and if the needle was imbedded in the bone it was almost impossible to get it out again. Some of the bad results in a few cases had been due to the use of small and badly constructed hypodermic needles. The antitoxine syringe gave the best form of needles; the best length was about four centimetres. The calibre of the needle was a millimetre and a half to one millimetre. The needle was to be perfectly sterilized. Wentworth and some others had noted that needles had been introduced when the lumen was not free, and it necessitated the removal of the needle and its reintroduction. In the selection of the needle and its preparation care should be taken that the operation was simplified as much as possible by having the proper instruments.

It was not necessary to give an anæsthetic except in rare instances with very nervous or impressible children, because the puncture was made so quickly that there should be no great disturbance. The needle was introduced a little to the right of the median line, following as much as possible the position of the child, and pushing the needle a little forward and upward; in this way the lower vertebræ were not apt to be impinged upon. As soon as the cavity was reached, the stylet was withdrawn and the fluid could be evacuated into a sterile tube, which was kept stoppered with cotton. If the stylet had been in position when the needle was introduced, the fluid escaped very readily when it was withdrawn. If the needle was put to one side of the canal and moved around in the soft tissue, it might sometimes give the impression that it was in the canal, but the fluid did not escape. Instead of trying to get it into the canal, it was better to withdraw it for a short distance and reintroduce it. In other words, make the puncture as simple as possible, rather than break the tissue around the vertebral column and cause hæmorrhage by lateral movements of the needle.

In cases of hydrocephalus it might be perfectly right to draw off a considerable amount of fluid, but in the simple meningeal effusions, and for diagnostic purposes, a small quantity of fluid would do for examination. Observations showed that in a number of cases the suction of a syringe had brought on very severe nervous phenomena, and in some few cases convulsions. In those cases where there was marked increase in the quantity of the cerebro-spinal fluid, it was possible to draw off the fluid without producing these symptoms. The quantity of the fluid allowed to escape was governed by the disease under observation and the condition of the patient, but should be sufficient for diagnostic purposes. Four or five cubic centimetres would be plenty for ordinary inspection and microscopical test. The wound should be carefully sealed with gauze and collodion. The fluid was not to be withdrawn unless an examination of it was to be made. A small number of tuberculous children, those that had meningitis, showed in the early stages no appreciable gross change in the cerebro-spinal fluid at the time it was withdrawn.

The examination to be made should always be planned for in advance, if there was to be any value whatever from the test. The normal fluid was almost like water; it was practically colorless, and there was no sediment. Sediment might be given it by the intermixture of blood, and also by the material due to the inflammatory product, but if we had an early tuberculous case, and made our test rest on the first inspection of the specimen, our result might be unsatisfactory. The test should depend not upon the puncture but upon the careful examination of the fluid. In some of the cases of tuberculous meningitis it was difficult to detect any flocculi until the fluid had stood for a time, but in all cases of more advanced tuberculous meningitis and in meningitis due to various inflammatory changes, flocculi and cloudy deposits would show when the specimen was held against the light. That would be perhaps the extent of the general appearance of the fluid, and the only determining way of ascertaining the actual change which had produced that flocculent deposit was by the staining of the specimen and the injection of rabbits and guinea-pigs. The test in doubtful cases should include all these means. The ordinary flocculent deposits might be stained and examined under the microscope for the specific organisms which caused the meningitis. The changes found in the fluid in the case of tumors had been noted by observers, and sometimes the fluid would show a percentage of sugar.

To recapitulate, in almost all cases of meningitis of tuberculous type we could get a positive and satisfactory evidence of the tubercle bacilli after the early period, but not always in the early period. In every case of inflammatory meningitis we should get the evidence of the meningitis in the fluid. In a certain number of cases of pneumonia we should get the pneumococci even when the disease was not accompanied by meningitis, and in conditions of inflammatory trouble in other parts of the body sometimes we got the evidence of the streptococci or other organisms that showed themselves in a general systemic infection, not necessarily always a tuberculosis.

The conditions which led one to try lumbar puncture were often so serious and so momentous that the question of the therapeutic value of this procedure had been considered by a number of careful observers. It was at first said that it was absolutely harmless, and that no ill result followed its use. It was used perhaps too freely, for it was found that in cases of simple pneumonia with meningeal symptoms the result was bad. It was also found that in a certain number of children who had no disease whatever, if the fluid was withdrawn rapidly it brought on nervous phenomena of one sort and another, but it was also observed in some tuberculous cases and in hydrocephalus that there was apparent relief and sometimes a good deal of comfort extending over quite a period by withdrawing a quantity of fluid, thus relieving the intracranial pressure. So far it did not seem that there had been any permanent satisfactory results. Meningitis of the tuberculous form had certainly not been benefited. We were reduced to the use of lumbar puncture as a means of diagnosis, and we might consider that lumbar puncture was of special diagnostic value in all cases of tuberculous origin, in cases of children who had meningitis complicating other diseases, in cases of children showing pseudo-meningitis, and those who had meningeal symptoms complicating inflammatory troubles of other parts of the body; but the puncture was always to be undertaken with due care. The examination should never be for mere inspection of the fluid, but should also include the microscopic test, and also sometimes the injection of rabbits and control experiments.

Dr. Edward D. Fisher said he had had some experience in lumbar puncture and agreed to all that had been said except that, for diagnostic purposes, it had not proved of great value. Mere loss of cerebro-spinal fluid had little effect on the patient. In operations on the skull, when a large amount of fluid was lost after opening the dura, he noticed little effect, and also in opening into the spinal canal, when considerable fluid was lost, it had little effect upon the pulse of the patient. With regard to removing a certain amount of fluid at one time for the relief of the patient, one could not expect much permanent effect, and one was hardly justified in subjecting the patient to the operation for that purpose, as cerebro-spinal fluid formed so quickly. Where there was a cyst in the brain and constant drainage kept up, the patient soon became used to it and little effect was observed; and when the drainage ceased, the condition was about the same as during the time of constant drainage. Lumbar puncture was of value in cases of tuberculous meningitis for diagnostic purposes. One claim made for it was that the existence of cerebral hæmorrhages would be evident if blood was detected in the fluid. This might be of slight value, but the other clinical symptoms would be so much surer that one would hardly have to resort to lumbar puncture to establish cerebral hæmorrhage.

Dr. T. S. Southworth spoke of the extreme difficulty at times in making out the turbidity of the fluid as it was withdrawn. The flocculi were sometimes very small, and it was often necessary to put a tube of sterile water beside the other, in order to show that there was a distinct turbidity in the fluid. Moreover, if the tube stoppered with the cotton was allowed to stand until the next day, one could often detect in the settling of the fluid and in the formation of the fibrin web at the bottom a deposit which had hardly been clear enough to see the day it was drawn. He did not use quite so large a needle as the one Dr. Carr exhibited, but one such as would be used in making an exploratory puncture of the pleura—longer than a hypodermic needle—and it was usually sufficiently large for use in the child. The ease with which the cavity was found seemed much greater than one would suppose. He made one or two punctures on the cadaver, and a number of months after performed the puncture, and was surprised at the ease with which he found the cavity. If one followed the direction and kept the fact in mind that one wanted to reach the median line, going a little upward and forward, there was suddenly a sensation as though the needle was passing through and into a cavity, and the fluid began to drop from the end.

Dr. Ramon Guitéras asked how much fluid could be taken from the canal in lumbar puncture in cases of meningitis or hydrocephalus.

Dr. Carr said he could not answer that question exactly. Three to four ounces had been taken off at a time for a number of days, and perhaps larger quantities than that had been drawn. He did not think, as a rule, though, that it was best to take out so much.

Dr. Guitéras asked how long it would take for three ounces to come out.

Dr. Carr said it flowed very rapidly in cases of hydrocephalus, but it would depend on the calibre of the needle. The needles he exhibited were a size larger than he used, but he would always prefer a large needle to a small one, because of the injury that would be done with the small needle should it be broken or left in the tissues.

The President (Dr. Stowell) alluded to a case of tuberculous meningitis with all the usual symptoms. The child was blind—had been so for two or three days when he saw him. He gave an unfavorable prognosis, but drew off some of the fluid and examined it for diagnostic purposes. He did not examine it for bacilli, but the bacteriologist did, and found one or two tubercle bacilli. That made the diagnosis apparently sure for tuberculous meningitis. The child improved steadily, was now perfectly well, and gradually regained his sight. The optic neuritis set up by the pressure finally disappeared. The diagnostic value confused him somewhat. Apparently, clinically and bacteriologically, it was tuberculous meningitis, yet after that the child recovered, and tuberculous cases were often alleged not to end in recovery.

Book Notices.

The Principles of Treatment and their Applications in Practical Medicine. By J. Mitchell Bruce, M. A., M. D., F. R. C. P., Physician and Lecturer on the Principles and Practice of Medicine, Charing Cross Hospital, etc. Adapted to the United States Pharmacopœia by E. Quin Thornton, M. D., Demonstrator of Therapeutics, Pharmacy, and Materia Medica, Jefferson Medical College, Philadelphia. Philadelphia and New York: Lea Brothers & Co., 1900. Pp. xv–614. [Price, $3.75.]

The author has been struck, he says, with the inability of highly educated students to give "a rational account of the principles" of prescribing and of treatment. They are competent as a rule, but their efforts in therapeusis are rather imitative than thoughtful. This condition, we must confess, is true in a very large number of cases, and we quite agree with the writer that it is unscientific. As corrective of this tendency, Dr. Bruce has been in the habit of directing the attention of his students "first and chiefly to the objects of treatment—and thereafter, and not until then, to discuss the selection of medicinal and non-medicinal measures calculated to effect the desired ends." "The present work," to quote the preface, "is planned on the same lines. It starts by assuming no therapeutical laws, but proceeds to find them in the familiar facts of ætiology, pathological anatomy, and the clinical characters of disease. These are carefully examined for the elementary principles of treatment; and in the course of the inquiry the student is taught how he may himself employ his observations as guides to practice. Having mastered the most simple therapeutical principles, the reader is led up to higher generalizations, which relate to the nature of disease and its proper relation to treatment."

The first portion of the work is devoted to the general considerations that have been alluded to, and is of great interest and instructive in a high degree. We quite agree with the author as to the prevalence of imitative therapeutics, and we believe that a work like this can not but promote independence of thought and procedure. In many respects this portion of the book resembles Fothergill's *Handbook of Treatment*, although its greater completeness is in keeping with the progress of later years.

The second part of the book is devoted to illustrations of the principles of treatment, and in it are discussed the detailed methods of treatment of a number of the more important diseases, based upon the generalizations that have preceded. This latter portion is a very considerable one, it is true, but it does not purport to be a complete treatise upon the subject of practical medicine; it is purely for the purpose of illustration, the essence and the reason of the work being contained in the first part. To say that the work is a worthy companion to the classic of Fothergill is sufficient praise.

Muscle, Brain, and Diet: a Plea for Simpler Foods. By Eustace H. Miles, M. A. (Camb.). New York: The Macmillan Company, 1900. Pp. xv–345. [Price, $1.]

Those of our readers who are familiar with the views of Dr. Alexander Haig as set forth in *Uric Acid as a*

Factor in the Causation of Disease will find in the work before us pabulum of the same sort, but presented this time by one of the laity. The testimony of Mr. Miles, however, while non-medical, is authoritative in the highest degree, for, as he is a man whose reputation in athletics is well known, his knowledge of training may be taken for granted. In another respect, too, he is eminently qualified to speak, for he was himself a sufferer as Haig was, and has proved in himself the dangers of the nitrogenous diet as well as the benignity of that which is relatively free from nitrogen. If one can bring himself from a condition of excrementitious accumulation and albuminuric debility into a state of physical vigor such as this gentleman possesses by rigid dietetic observances, his words must certainly be weighty. It may be that the application of the principles laid down by Haig and repeated by Miles requires modification by the individual, for Miles himself differs in the application with the older observer, but certainly in the present state of uncertainty as to uric acid and lithæmia (call the condition what we may), and in view of its very great prevalence, books like this can not but be productive of very great good.

Healthy Exercise. In Three Parts. By ROBERT H. GREENE, M. D. Illustrated. New York and London: Harper & Brothers, 1900. Pp. v–165.

THIS little work will amply repay a careful reading, and any one who is interested in the subject of healthy nutrition and exercise can profit from it. The work is not in any sense technical, be it noted, and the laity will find it quite as comprehensible as the physician will. Although it is primarily a work upon exercise, the ground covered is far from narrow, and healthy nutrition is the theme of the opening chapters rather than exercise *per se*. This subject is continued and elaborated in the second part of the book, and the relation of exercise to the healthy and the morbid states is clearly presented. The third part treats of the various forms of exercise in common use and explains their advantages and disadvantages. The work is most complete, and as a logical and satisfactory study of exercise for the enlightenment of the lay mind it is unexcelled.

Clinical Studies in Vice and Insanity. By GEORGE R. WILSON, M. D., Medical Superintendent, Mavisbunk Asylum. New York: The Macmillan Company; Edinburgh: W. F. Clay, 1899. Pp. xi–234.

TWENTY-SEVEN clinical histories of cases of alcoholism and insanity are the basis of this volume. They are written in vigorous and entertaining English and have the peculiar merit of showing how patients are affected in their personality by these conditions. The author cuts away so entirely from the conventional style of history-taking that he fails to present complete pictures; but the pictures drawn are, nevertheless, graphic, instructive, and well worthy of study. He finds many opportunities of giving his views on interpretation and treatment. These are always original, if not always in agreement with those generally entertained.

BOOKS, ETC., RECEIVED.

Ulcer of the Stomach and Duodenum, and its Consequences. By Samuel Fenwick, M. D., F. R. C. P., Consulting Physician to the London Hospital, and W. Soltau Fenwick, M. D. Lond., M. R. C. P., Senior Physician to the London Temperance Hospital, etc. Philadelphia: P. Blakiston's Son & Co., 1900. Pp. xiv–392. [Price, $3.50.]

On the Operative Surgery of Malignant Disease. By Henry T. Butlin, F. R. C. S., D. C. L., Hunterian Professor of Surgery and Pathology to the Royal College of Surgeons, etc. With the Cooperation of James Berry (The Thyreoid); W. Bruce Clarke (The Kidney); Alban Doran (The Ovary and Uterus); Percy Furnivall (The Stomach, Intestine, and Rectum); Walter Jessop (The Eye); and H. J. Waring (The Liver and Gall Bladder). Second Edition. Philadelphia: P. Blakiston's Son & Co., 1900. Pp. xii–426. [Price, $4.50.]

The Student's Handbook of the Surgery of the Alimentary Canal. Being an Abridged and Amended Edition of the Author's Treatise on the Same Subject. By A. Ernest Maylard, M. B., B. S. Lond., Surgeon to the Victoria Infirmary, Glasgow, etc. Philadelphia: P. Blakiston's Son & Co., 1900. Pp. xv–3 to 510. [Price, $3.]

Paralytic Deformities of the Lower Extremities. The Principles of their Surgical Treatment. By E. Noble Smith, F. R. C. S. Edin., L. R. C. P. Lond., Senior Surgeon to the Orthopædic Hospital, London, etc. With Fifty-one Illustrations. London: Smith, Elder, & Co., 1900. Pp. x–99. [Price, 5*s.*]

Le Rhumatisme articulaire aigu en bactériologie. Par H. Triboulet, Médecin des hôpitaux de Paris, et A. Coyon, Interne des hôpitaux de Paris. Avec 4 figures dans le texte. J.-B. Baillière et fils, 1900. Pp. 95. [Prix, 1 fr. 50.]

Die Untersuchung des Harns und sein Verhalten bei Krankheiten. Von Dr. med. C. Beier, Bauske (Curland). Mit 18 Abbildungen im Texte. Leipzig: C. G. Naumann, 1900. Pp. vii–249.

Pathologie und Therapie der Erkrankungen des peripherischen Nervensystems. Von Dr. med. Franz Windscheid, Privatdocenten an der Universität Leipzig. Mit 44 Abbildungen im Texte. Leipzig: C. G. Naumann, 1900. Pp. vii–244.

Untersuchungen über die Möller-Barlow'sche Krankheit. Von Dr. J. Schoedel, Assistenten, und Prof. C. Nauwerck, Prosector. Jena: Gustav Fischer, 1900. Pp. 159.

Atlas von Beleuchtungsbildern des Trommelfells. Von Dr. Kurd Bürkner, a. o. Professor der Medizin und Direktor der Universitäts-Poliklinik für Ohrenkrankheiten zu Göttingen. XIV Tafeln, chromolithographirt nach den Originalskizzen des Verfassers von Ad. Giltsch, in Jena. Dritte, verbesserte und durch eine Anleitung zur Ohrenspiegel-Untersuchung vermehrte Auflage. Jena: Gustav Fischer, 1900. Pp. 20.

New York Eye and Ear Infirmary Reports. Volume VIII. January, 1900.

Transactions of the American Dermatological Association at its Twenty-third Annual Meeting, held in the College of Physicians, Philadelphia, May 30 to June 1, 1899.

Immunity as against Heredity in Tuberculosis. By Lawrence F. Flick, M. D., of Philadelphia. [Reprinted from the *Journal of Tuberculosis.*]

The Control of Tuberculosis. By Lawrence F. Flick, M. D. [Reprinted from the *Twelfth Annual Report of the State Board of Health.*]

An Experiment in the Transmission of Syphilis to Calves. By Mazyck P. Ravenel, M. D., of Philadelphia.

[Reprinted from the *American Journal of the Medical Sciences.*]

Observations on the Treatment of Cancer. By A. R. Robinson, M. D. [Reprinted from the *Medical Record.*]

Gastroptosis. By Achilles Rose, M. D. [Reprinted from the *Post-graduate.*]

Bericht über die Thätigkeit des königl. Instituts für Serumforschung und Serumprüfung zu Steglitz. Von Prof. Dr. W. Dönitz. [Abdruck aus dem *Klinische Jahrbuch.*]

New Inventions, etc.

A DEVICE FOR CORRECTLY APPLYING "PASTERS" FOR BIFOCAL GLASSES.

By George T. Stevens, M. D., Ph. D.,
NEW YORK.

In the adjustment of bifocal glasses a common and practical difficulty is experienced in so placing the reading element that it shall be perfectly adapted to its purpose and at the same time avoid the confusion which arises from seeing the edge of the paster when the wearer walks or looks about.

So important is this difficulty that it is impossible in many cases to induce patients who require glasses of different values at distance and at near points to use bifocal glasses at all, or, if the patient is induced to use them, it is only to find that they are soon abandoned for separate spectacles.

Even when a bifocal arrangement is accepted, it is often a compromise on the part of the patient between the discomfort of such glasses and the inconvenience of being without them.

A few very simple principles and the exercise of a little practical skill will serve to avoid all the difficulty of these cases.

In the first place, it is important to have in mind the fact that only a very small angle is required for the visual range at reading distance. A paster of twelve millimetres in the longitudinal and of ten millimetres in the vertical diameter is abundantly large, and, if the glasses are set near the eyes and the pasters are very thin at the edges, the reading element may be even smaller without in any way interfering with the free use of the eyes at the near point. (A paster ten millimetres in diameter, three fourths of an inch from the eye, will give a field of ten inches diameter at sixteen inches. The field for both eyes will, of course, be larger.)

In order, however, to reduce these reading elements to this small size it is necessary to so place them that the line of sight of each eye shall pass through the centre of the reading elements respectively without unnecessary effort on the part of the wearer to bring the head into the proper relation to the page and the paster.

It is here that the optician encounters his practical difficulty, and it is from the optician's failure that the oculist is forced reluctantly to resign his purpose of insisting upon the use of the bifocal arrangement.

To overcome this important difficulty I long ago suggested to some of the leading opticians of this city the practicability of employing a pair of adjustable perforated screens which, by shutting out the field of vision except at the line of sight, would enable the optician to determine the point at which the centre of the paster should be placed upon the distance glass. As no progress, so far as I know, was made, I have myself devised a simple instrument, which is here described.*

In making the device practicable I have had the assistance of Mr. Paul A. Meyrowitz.

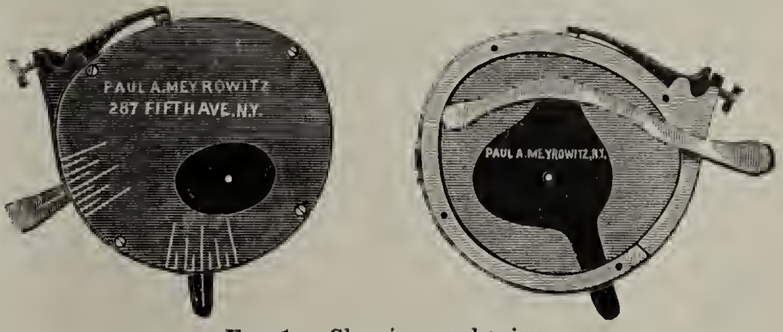

Fig. 1.— Showing mechanism.

A pair of elliptical covers of very thin metal is made in the size and form of the ordinary eye glasses. By clips and a screw one of these may be attached to each of the glasses of the spectacles. Through the lower half of the metal screen is an elliptical opening of about fifteen millimetres in its longest diameter. A movable diaphragm, having near its centre an opening of one millimetre diameter, closes the opening in the screen except the small window of the diaphragm. The diaphragm being movable from side to side and up and down by means of two small levers, the stenopæic window can be brought into any position within the limits of the larger opening in the screen.

In applying the device in practice the optician carefully adjusts the distant glasses, or, if need be, temporary glasses, which shall have the same adjustment to the patient's face, taking care not to tilt the top of the glasses somewhat backward, as is the custom of many opticians, but slightly forward, in general at least six degrees, often more, with the line of the face.

When this is accomplished to the comfort of the patient the screens are placed in position. A sheet of paper or a card on which is drawn a horizontal line about three inches long with a dot at the middle is then placed at the usual distance and position for reading (Fig. 2). (It must be observed that all do not hold the head in the same way for reading, and this fact is not to be neglected.) The patient is directed to look for the horizontal line without changing the pose of the head, and the levers move the stenopæic opening up and down until the line comes into the view of each eye, and becomes continuous for both eyes. Then, the patient still holding the head in the direct position, turning it neither to the right nor to the left, the optician moves the little openings from side to side until the dot is in the centre of the field of vision for each eye.

Fig. 2.

To determine whether the patient sees the dot in its proper position with each eye separately it is better to slip a small card alternately before the two eyes than to allow the patient to close the eyes alternately.

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* Since writing this article I have seen an instrument which has been devised by the firm of E B. Meyrowitz upon a similar principle. As the device did not include the line and dot embodied in the present suggestion, it was deficient in a practical feature.

When the position of the openings is found in which, at the reading distance and with the proper position of the head, the dot is seen by both eyes simultaneously, the optician marks the points directly behind the small openings with a small inked brush, introduced through the opening, indicating the locality for the centres of the pasters.

If this simple procedure is faithfully observed there will be no difficulty in adjusting bifocal glasses to almost any person needing them, and the pasters may be made so small that they will in no way interfere with the general field of vision in walking, going downstairs, or crossing crowded streets. The edges of the pasters should be very thin in order to avoid the refraction incident to a thick border.

I have, in order to locate the position for the pasters, used specially made stenopæic discs placed in the ordinary trial frame, and I have had such discs attached to a permanent adjustable frame, but the covers here described serve the purpose much better.

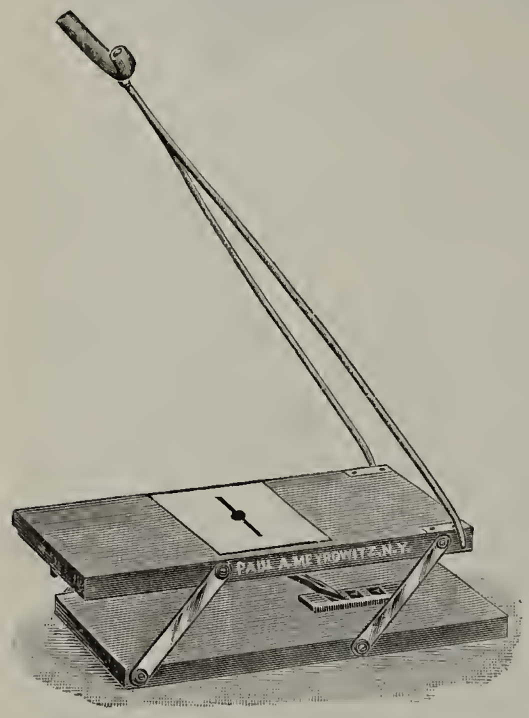
PAUL A. MEYROWITZ. N.Y.

Fig. 3.

In order to facilitate the holding of the head in one position while the examination is being made, I have suggested an adjustable head rest, which is shown in the adjoining cut.

The screens are manufactured by Mr. Paul A. Meyrowitz, 287 Fifth Avenue, New York.

Miscellany.

The Chair of Gynæcology at Yale, vacant by the resignation of Professor B. Austin Cheney, has, according to the *New York Times* for April 29th, been filled by the transfer of Professor Otto G. Ramsay from the corresponding post at Johns Hopkins University.

The Missouri State Medical Association.—The forty-third annual meeting will be held in Mexico, on May 16th and 17th, under the presidency of Dr. W. B. Dorsett, of St. Louis. Besides the president's address, the following papers are included in the programme: A Report of Ophthalmology and Otology, by Dr. J. H. Thompson, of Kansas City; Entropion and its Rational Treatment, by Dr. J. L. Short, of Kansas City; Intra-ocular Tumors, with Specimens, by Dr. C. Barck, of St. Louis; Total Ciliectomy, by Dr. M. F. Weyman, of St. Joseph; A Report on Bacteriology, by Dr. J. J. Claussen, of Kansas City; A Report on the Bacteriology of Scarlet Fever, by Dr. R. B. H. Gradwohl, of St. Louis; A Report on the Progress of Medicine, by Dr. J. D. Brummall, of Salisbury; A Case of Idiopathic Acute Yellow Atrophy of the Liver, by Dr. C. G. Crandall, of St. Louis; The Use of Normal Salt Solution and Venesection in Croupous Pneumonia, by Dr. William Porter, of St. Louis; Points of Differential Diagnosis between Inflammatory Rheumatism and Suppurative Osteomyelitis, Tuberculous Osteomyelitis, Myostitis, Posterior Spinal Sclerosis, Neuritis, Neurasthenia, etc., by Dr. George Halley, of Kansas City; Diatheses as a Factor to be considered in Diseases of the Nose, Throat, and Ear, by Dr. Fayette C. Ewing, of St. Louis; Limitations of the Laryngologist in the General Treatment of Nose and Throat Diseases, by Dr. H. W. Loeb, of St. Louis; What not to do in the Treatment of Diseases of the Ear, Nose, and Throat, by Dr. M. A. Goldstein, of St. Louis; Cases of Chronic Deafness from Catarrh relieved by Tympanic Resection, by Dr. Robert Barclay, of St. Louis; The Progress of Pædiatrics, by Dr. E. H. Miller, of Liberty; Cerebro-spinal Meningitis, by Dr. J. T. Marsh, of Liberty; Recent Improvements and Discoveries in the Science of Alimentation, by Dr. O. P. Kernodle, of Sedalia; Diphtheria, by Dr. P. S. Fulkerson, of Sedalia; A Report on State Medicine, by Dr. E. L. Priest, of Nevada; The Status of the Medical Profession, Present and Future, by Dr. L. Bremer, of St. Louis; Small-pox, its Prevention and Treatment, by Dr. R. S. Kelso, of Joplin; A Report on Medical Education, by Dr. J. M. Allen, of Liberty; Quackery *versus* Medical Ethics, by Dr. C. R. Day, of Mayview; A Report on the Progress of Surgery, by Dr. W. A. McCandless, of St. Louis; Old Sinuses, by Dr. H. E. Pearse, of Kansas City; What is the Value of Trauma as an Ætiological Factor in Chronic Tuberculous Disease, by Dr. G. R. Highsmith, of Carrollton; Carcinoma of the Cæcum in a Young Adult, by Dr. T. C. Witherspoon, of St. Louis; Syphilitic Sciatica, by Dr. J. K. Bauduy, of St. Louis; Two Cases of Chancre of the Groin, by Dr. A. H. Ohmann-Dumesnil, of St. Louis; Some Observations of Secondary Syphilis, by Dr. William Frick, of Kansas City; The Nature of some Epidermic Growths, and their Treatment with Formalin, by Dr. M. F. Engman, of St. Louis; A New Ureter Cystoscope, by Dr. Bransford Lewis, of St. Louis; The Physiology of the Bile, by Dr. C. Shattinger, of St. Louis; The Pathology of the Gallstones, by Dr. H. Summa, of St. Louis; The Ætiology and Diagnosis, by Dr. W. G. Moore, of St. Louis; The Medical Treatment, by Dr. C. F. Wainwright, of Kansas City; The Surgical Treatment, by Dr. A. V. L. Brokaw, of St. Louis; A Report on Abdominal Surgery, by Dr. F. J. Lutz, of St. Louis; The Radical Treatment of Hernia by the Marcy-Bassini Operation; Five Cases, by Dr. C. H. Wallace, of St. Joseph; Intramural Fibroid of the Uterus; Removal during the Fifth Month of Gestation; Recovery; A Normal Parturition; Mother and Child doing Well, by Dr. E. R. Lewis, of Kansas City; Appendicitis; when and how to Operate, by Dr. A. H. Meisenbach, of St. Louis; Opium in Appendicitis, by Dr. H. A. Geitz, of St. Louis; The Modern Pathology and Treatment of Appendicitis, by Dr. Pinckney French, of St. Louis; A Report on Gynæcology, by Dr. H. C. Crowell, of Kansas City; Vesico-vaginal Fistulæ, by Dr. T. E. Potter, of St. Joseph; Uterine Carcinoma, by Dr. M. B. Ward, of Kansas City; The General Practitioner and the Gynæcologist, by Dr. F. A. Glasgow, of St. Louis; Acute Inversion of the Uterus, by Dr. J. C. Crist, of Lexington; Are Obstetrical Emergencies fully Anticipated? by Dr. C. A. Dannaker, of

Kansas City; A Report on Neurology, by Dr. C. R. Woodson, of St. Joseph; The State's Greatest Crime, by Dr. E. Van Note, of Kansas City; Hystero-epilepsy, by Dr. E. E. Parrish, of Memphis; Hysteria and its Protean Manifestations, by Dr. John Punton, of Kansas City, and Shall the Specialist Pay a Commission to the General Practitioner? by Dr. Emory Lanphear, of St. Louis.

Information Wanted.—We reprint the following from *Science* for April 27th, by request:

The psychophysiology of anæsthesia is a productive subject greatly in need of adequate investigation and discussion. Both pure science and practical surgery have doubtless much to gain from a deeper-going study of experiences under ether, chloroform, nitrous oxide, etc., than has as yet been made. Scientific literature has frequently contained accounts of isolated individual experiences reported most often because of their strangeness. A very large number of descriptions of the ordinary experiences is what is now desired, and to this end blanks have been prepared on which replies to certain simple questions may be written. All persons, and especially hospital surgeons, officers of medical societies, and instructors in medical schools, are respectfully requested to send to the undersigned for as many of these blanks as they care to distribute among persons who have been under an anæsthetic. These will be gratefully sent, and received when filled out. GEORGE V. N. DEARBORN.

PHYSIOLOGICAL LABORATORY,
HARVARD MEDICAL SCHOOL, BOSTON, MASS.

The Ohio State Medical Society.—The fifty-fifth annual meeting will be held in Columbus, on Wednesday, Thursday, and Friday, May 9th, 10th, and 11th, under the presidency of Dr. Rufus B. Hall, of Cincinnati. The following papers are to be presented for discussion: A Plea for the Earlier Use of the Obstetrical Forceps, by Dr. John M. Fassig, of Zanesville; Puerperal Eclampsia, its Cause and Treatment, by Dr. John E. Sylvester, of Wellston; Subphrenic Abscess following Appendicitis, by Dr. J. F. Baldwin, of Columbus; Inguinal Colostomy, by Dr. John C. Oliver, of Cincinnati; The Value of a Healthy Throat, by Dr. W. W. Pennell, of Fredericktown; Tonsillar Obstruction in the Fauces and Pharynx, by Dr. A. W. Francis, of Ripley; The Infectiousness of Follicular Tonsillitis, by Dr. Charles A. Hough, of Lebanon; Eye Strain, by Dr. Louis Stricker, of Cincinnati; Perforating Wounds of the Eyeball, by Dr. C. W. Tangemann, of Cincinnati; The Differential Diagnosis and Treatment of Metatarsalgia, by Dr. A. H. Freiburg, of Cincinnati; Cerebro-spinal Meningitis, by Dr. C. J. Aldrich, of Cleveland; The Treatment of Consumptives at Home, by Dr. Joseph Eichberg, of Cincinnati; The Oropharyngeal Ring of Lymphadenoid Tissue, by Dr. Thomas Hubbard, of Toledo; Sudden Deaths, by Dr. Louis Schwab, of Cincinnati; Three Laparotomies for Gunshot Wounds, by Dr. E. W. Walker, of Cincinnati; Operations upon the Biliary Passages, by Dr. Dudley P. Allen, of Cleveland; The Medical Treatment of Gallstones, by Dr. E. S. Stevens, of Lebanon; Alcohol, its Place, by Dr. R. T. Trimble, of New Vienna; The Value of Posture in the Treatment of Rectal Disease, by Dr. Thomas C. Martin, of Cleveland; Operations on the Intestines, by Dr. Charles S. Hamilton, of Columbus; The Diagnosis of the Position of the Fœtus *in Utero* by External Examination, by Dr. E. Gustav Zinke, of Cincinnati; Pleurisy in Childhood, by Dr. T. W. Rankin, of Columbus; Pyloric Stenosis without Dilatation, by Dr. N. Stone Scott, of Cleveland; Address in Medicine, by Dr. Walter Wyman, of Washington; Compound Fractures, by Dr. Nicholas Senn, of Chicago; Nasal Polypi in the Nasopharynx, by Dr. John M. Ingersoll, of Cleveland; The Fränkel Treatment of Locomotor Ataxia, by Dr. David I. Wolfstein, of Cincinnati; The Physician in Municipal Reform, by Dr. D. R. Silver, of Sidney; Diseases recorded in the New Testament which Christ healed, by Dr. D. N. Kinsman, of Columbus; The Treatment of Ulcers of the Leg, by Dr. S. S. Halderman, of Portsmouth; The Surgical Treatment of Hæmorrhage occurring in Ulcers of the Stomach and Duodenum, by Dr. Ralph J. Wenner, of Cleveland; Hip-joint Amputation, by Dr. W. D. Hamilton, of Columbus; Pelvic Suppuration, by Dr. F. F. Lawrence, of Columbus; Atypical Cases of Appendicitis, by Dr. W. J. Means, of Columbus; Round-ligament Ventrosuspension of the Uterus, a New Method, by Dr. D. Tod Gilliam, of Columbus, and Asepsis in Obstetric Practice, by Dr. J. N. Barnhill, of Columbus.

Prize Essays on School Hygiene.—The National Educational Association offers prizes as follows: For the best essay submitted on each of the following topics: the seating, the lighting, the heating, and the ventilating of school buildings, $200; for the second best essay submitted on each topic, $100. Each essay shall be limited to ten thousand words and shall be submitted in printed or typewritten copy without signature, but with name of author inclosed with it in sealed envelope and addressed to the chairman of the committee, Mr. A. R. Taylor, at Emporia, Kansas. Three copies of each essay shall be submitted. They must be mailed not later than February 1, 1901. The essays and envelopes will be properly numbered for identification and the former forwarded to three experts to be hereafter appointed by this committee. Each expert will be ignorant of the appointment of the others, and their combined judgment shall determine the award. Should no essay on any topic be found worthy of an award and publication, the committee reserve the right to withhold the same. The committee reserve the exclusive right for the National Educational Association to copyright the prize essays and to publish the same for general distribution. The committee desire that each essay shall treat each topic independently and be complete in itself, no reference being made to statements contained in another essay. Generalities and speculations are not desired, neither are detailed technical formulæ and demonstrations. Each essay should present concisely and comprehensively the problem to be solved and the scientific principles involved; should discuss briefly the construction of the school building as related to the problem of sanitation in general and to the specific subject of the essay in particular; should describe in detail sufficient for the apprehension of the average teacher the conditions and mechanisms by which the best results may be obtained; should include figures and diagrams illustrating general plan and principles involved; should set forth methods and devices for detecting defects and suggest remedies for the same in buildings already constructed; should give references to a few buildings where the system has been adopted; and should be supplemented by a brief bibliography of standard authorities on the subject discussed and a short list of manufacturers of approved devices and supplies for carrying out the plans advocated by the author. The essay on ventilation should include full suggestions concerning the use of disinfectants. Should the awards on two or more essays be made to the same person, he will be permitted to revise and unify the manuscript before publication by the committee.

The Louisiana State Medical Association.—The annual meeting was held in New Orleans on April 19th, 20th, and 21st. It was considered one of the best yet held. Dr. F. W. Parham, of New Orleans, was elected president for the ensuing year.

Surgical Enthusiasm as it Should Be.—The London correspondent of the *Medical News* says in that journal for April 21st, referring to Mr. Frederick Treves's correspondence from the seat of war in South Africa, that in nearly all of Mr. Treves's letters there is a suppressed but obvious undertone of almost pathetic regret at the small opportunities afforded in this campaign for abdominal surgery, which, apart from patriotic motives, was his principal professional interest in going to the front. The reason for his disappointment is, however, a most happy one and one that he heartily rejoices in, viz., the freedom from complications and the rapid recovery rate of abdominal wounds made by the Mauser bullet. It is a high tribute to Mr. Treves's conscientious humanity that he so promptly recognized the improved prognosis of these cases and at once threw the weight of his great opinion against the course which all his previous experience had led him to regard as advisable and along which his sole hope of really interesting and valuable professional experience in the campaign lay. One sentence in his last letter sums up the net result (speaking of a fearful penetrating wound of the abdomen): Following the indications taught by this campaign, I advised against operation; he made an excellent recovery." This appears to us an instance of the higher surgery.

The Invasion of the Cow's Udder by Bacteria.—Archibald R. Ward (*Journal of the Boston Society of Medical Sciences,* March) says that the extent to which lactiferous ducts of the cow's udder are invaded by bacteria was determined by means of bacteriological examinations of the udders of nineteen freshly slaughtered milch cows. Owing to the prohibitive expense of studying the udders of sound cows, it was deemed expedient to use those of cows slaughtered after condemnation by the tuberculin test. So far as possible, the udders of only slightly diseased cows were used. Samples of the fore milk were taken, and, before slaughtering, the udder was milked as thoroughly as possible. The udder was removed from the carcass immediately after death and taken to a sheltered spot for the bacterial examination. In each quarter in succession a flamed knife was used to make an incision extending from the dorsal to the ventral region of the gland, and of such depth as to expose the tissues in the vicinity of its vertical axis. Bits of the glandular tissue were transferred with aseptic precautions to tubes of gelatin, and properly labeled to show the region from which the culture was made. After returning to the laboratory, the gelatin was liquefied at a gentle heat and poured in Petri dishes. By comparing the colonies appearing on the plates after several days with those in cultures made from fore milk, it was possible to show that the same organism may occur in the fore milk in all parts of the udder. The evidence appears to warrant a modification of the statements concerning the place at which milk first becomes contaminated by micro-organisms. The writer concludes that, while milk is sterile when secreted, it may immediately become contaminated by the bacteria which normally inhabit the lactiferous ducts of the udder.

The International Tuberculosis Congress was opened, says the *New York Times* for April 26th, at the San Carlo Theatre, Naples, on April 25th in the presence of the King and Queen of Italy, the Prince and Princess of Naples, the Duke of Genoa, the Premier, General Pelleux, and the Minister of Public Instruction, Dr. Baccelli. The latter delivered the inauguration speech, and a delegate from each country represented at the congress followed. All the diplomats, including United States Ambassador Draper, attended the session.

A Prize for Investigations on Cancer.—According to *Science* for April 6th, the Council of the Royal College of Surgeons of England has appointed a committee to adjudicate on the Walker Prize. This prize, which is open to investigators of all nationalities, is given for the best work in advancing the knowledge and therapeutics of cancer during the past five years ending December 31, 1900, and amounts to the sum of £100.

The American Medico-psychological Association.—The annual meeting will be held in Richmond, Virginia, on Tuesday, Wednesday, Thursday, and Friday, May 22d, 23d, 24th, and 25th, under the presidency of Dr. Joseph G. Rogers, of Logansport, Indiana. The preliminary programme includes the following titles: The Insane in General Hospitals, by Dr. J. M. Mosher, of Albany; The Colonization of Certain Classes of the Chronic Insane, with Suggestions and Illustrations from the Craig Colony for Epileptics, by Dr. W. P. Spratling, of Sonyea, New York; Surgical Operations in Hospitals for the Insane, by Dr. William Mabon, of Ogdensburgh, New York; Myxœdemal Insanity, by Dr. H. Ernest Schmid, of White Plains, New York; Separate Provision for Tuberculous Patients in State Hospitals for the Insane, by Dr. A. H. Harrington, of Hathorne, Massachusetts; Is the Anglo-Saxon Degenerating? by Dr. J. Russell, of Hamilton, Ontario; The State of New York *versus* the Pathology of Insanity, by Dr. P. M. Wise; Dementia Præcox, by Dr. G. H. Hill, of Independence, Iowa; An Analysis of One Hundred Cases of Acute Mania, by Dr. E. N. Brush, of Towson, Maryland; What Condition, if any, would Warrant the State in taking Life because of Incurable Mental Disease or Defect, by Dr. R. Dewey, of Wauwatosa, Wisconsin; The Clinical Study of Thyreoid Extract, by Dr. W. F. Drewry and Dr. J. M. Henderson, of Petersburg, Virginia; Primary Dementia, by Dr. George P. Sprague, of Lexington, Kentucky; Food and Dietaries for the Insane, by Dr. W. H. Kidder, of Ogdensburgh, New York; The Influence of Military Campaigns in Tropical Climates in the Production of Insanity, by Dr. A. B. Richardson, of Washington; The Study of a Year's Statistics, by Dr. Charles W. Pilgrim, of Poughkeepsie, New York; Mental Responsibility, by Dr. Charles W. Hitchcock, of Detroit; Reciprocal Relations, by Dr. W. B. Lyman, of Mendota, Wisconsin; The Study of Psychiatry, by Dr. August Hoch, of Waverly, Massachusetts; Some Statistics and a Partial History of the Insane in Virginia, by Dr. R. J. Preston, of Marion, Virginia, and Reflections on Traumatic Hysteria, by Dr. C. B. Burr, of Flint, Michigan.

Original Communications.

A STUDY OF THE APPLICATION OF THE GALVANO-CAUTERY IN THE NOSE.

By BEAMAN DOUGLASS, M. D.,
PATHOLOGIST TO THE
THROAT DEPARTMENT OF THE MANHATTAN EYE AND EAR HOSPITAL;
ADJUNCT PROFESSOR OF LARYNGOLOGY
IN THE NEW YORK POST-GRADUATE MEDICAL COLLEGE.

[From the laboratory of the Manhattan Eye and Ear Hospital.]

THE introduction of electricity into the work of the rhinologist developed the use of the electro-cautery and the electro-trephine. For a time ordinary surgical methods fell into disfavor and disuse, while the cautery became the cure-all to accomplish the reduction of the various forms of nasal lesions which the specialist met. This method seemed so simple, the operation so bloodless, and the results, at least temporarily, so beneficial that the cautery heated by the electric current became a method of cure for nasal pathological conditions, and was in the office of every practitioner. Gradually the bad results began to show themselves, and in the hands of the specialist the cautery has especially fallen into disfavor.

In order to determine, if possible, the reason for the failure of the cautery to do good and satisfactory work, I determined to approach the subject from a microscopical standpoint and to study the comparative results between the electro-cautery and the cutting method (ordinary surgical procedure); also to determine, if possible, the reasons for the preference of the surgical method over the electro-cautery. It was determined that specimens, after cautery application had been made in the nasal tissues of patients, and made at different hours, should be removed, and examined after they were prepared for microscopical study. In this way were prepared a series from cauterized areas at various periods—that is, immediately after cauterization; also forty-eight hours, a hundred hours, and three hundred and sixty hours afterward. Another specimen was examined when the cauterized area was completely healed. Another series of specimens, in which an incision had been made by means of the scissors, were also prepared for examination. These were removed at hours corresponding to those of the cautery series. Thus, two series of specimens were prepared: one where a cautery incision had been made, and the other where a knife incision had been made.

In specimen No. 156, removed immediately after cauterization, stained with borax-carmin and hæmatoxylin, it was observed that the epithelial layer of the mucous membrane was destroyed for a considerable area beyond the point of application of the cautery; that the epithelium had become yellow and presented no cellular structure. At the edges of the cautery application a brown, amorphous material was seen. The glands and vessels showed no changes which could be observed with the microscope. The effect of the cautery knife was to form a cone of burned tissue slightly tapering toward the deeper structure and periosteum. The base was of about twice the width of the apex and corresponded to the epithelial layer. The cone of cauterized area showed that the tissue involved in the cauterization stained poorly and was considerably shrunken. It was also observed that the effects of the cautery were greatest at the outermost edges of the cauterized area. The centre of the cautery slough seems not to have been so severely burned as the edges, for at this point the burned tissue was seen thoroughly shrunken, destroyed, and of a dark-brown color, while the centre of the burned slough still stained. Although the cell bodies are indistinguishable under high power, and the interstitial connective tissue is completely destroyed, there still remain some fragments of cell nuclei which take the stain more or less indifferently (Fig. 1). The subepithelial hyaline membrane seems to have been particularly and especially affected by the cauterization, while the effect of the cautery upon the deeper structures is limited nearly to its area of application. In the hyaline membrane, also in the epithelial layer, the destruction extends enormously wide of the area where the cautery has been applied. It was also observed that while the slough was cone-shaped, the width of the burn was more or less irregular and not a perfectly regular cone. It can also be remarked that the interstitial tissue in some of the specimens seemed to have been affected by the heat for a moderate area outside of the line of sloughing, for the tissue takes on a different stain when compared with a specimen which has not been cauterized.

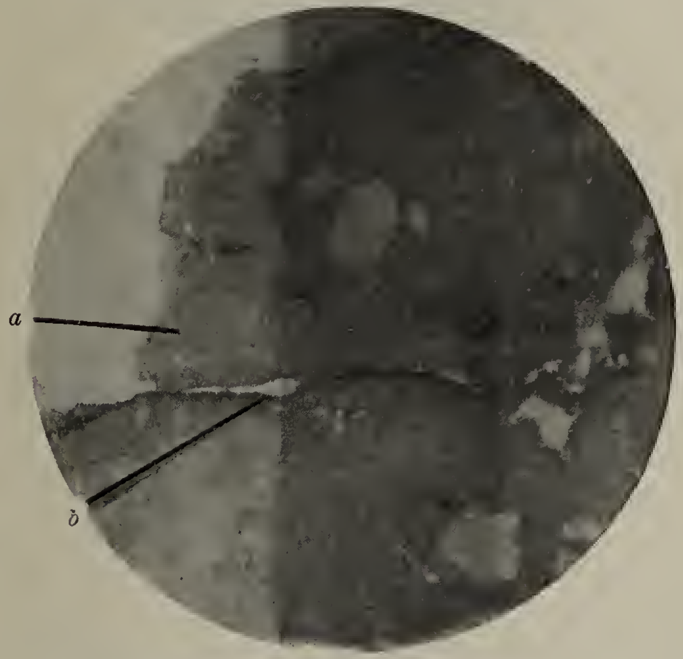

FIG. 1.—Immediately after cauterization. Leitz × 90. *a*, conical cautery slough; *b*, blackened edge of burn.

In contrast with the preceding specimen it was very interesting to study the next specimen, No. 178, Fig. 2, which was removed from the nose immediately after a cut with the scissors had been made in the mucous membrane. A great difference will be noted between these two specimens. The cut leaves a perfectly regular, conical space; the epithelial and hyaline membranes are absolutely normal, except where they have been immediately destroyed by the cutting edge. The epithelium stains regularly. The cut is regular, clean, and even. No brown or amorphous matter is found in any part of the specimen. The glands and vessels show no changes. The specimen shows no destroyed tissue; the only changes evident in the specimen, except the cut itself, are along the edges of the cut, where there seemed to be some evidence of compression, particularly in the interstitial connective tissue in the immediate neighborhood of the cut. No slough is present. All cells and tissues stain equally. There is no evidence of destruction wide from the field of operation, as in the preceding specimen.

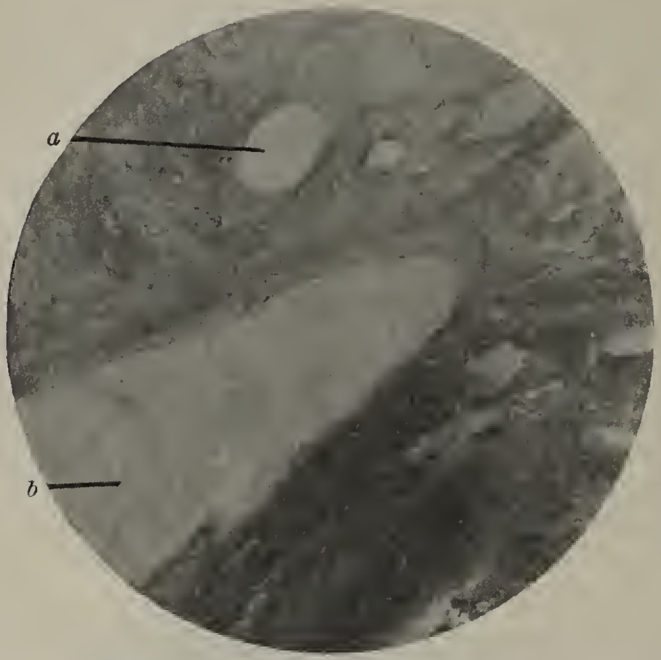

Fig. 2.—Scissors incision. Leitz × 90. *a*, venous sinus; *b*, incision.

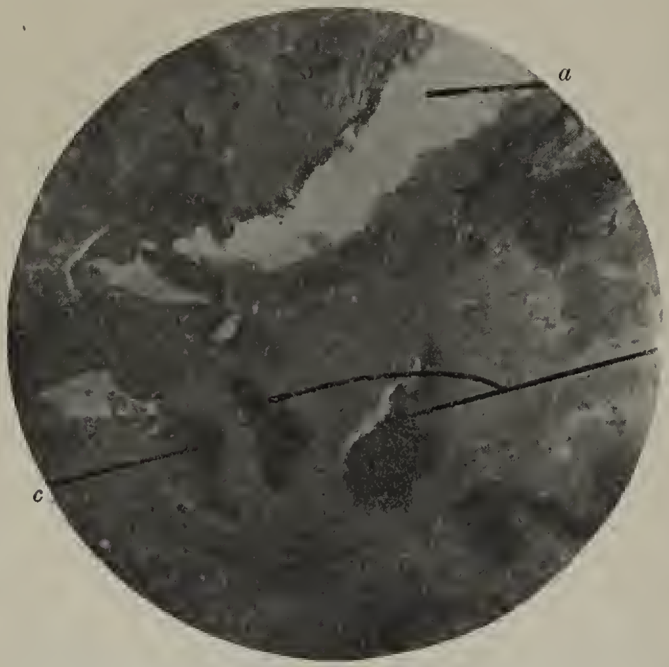

Fig. 3.—Cauterization after one hundred hours. Leitz × 90. *a*, cavity left by cautery; *b*, thrombus, venous sinus; *c*, thrombus.

The next specimen, No. 166, was removed one hundred hours after cauterization. In this specimen the epithelium and the hyaline membrane were either not previously destroyed or else they had been completely restored within the one hundred hours subsequent to operation. Both the epithelium and hyaline membranes, except in the immediate neighborhood of the slough, appear normal. In the interstitial tissue there are no changes, except a very slight leucocytic infiltration at the borders of the cauterization, and new connective tissue or granulations are beginning to form at the edges of the burn (Fig. 3). The blood-vessels in the neighborhood of the burned area contained more blood than other vessels which were removed a sufficient distance from the cauterization, and some of the blood-vessels in the erectile tissue seemed to be thrombosed. The glands show no alteration. The slough in one hundred hours seems to have almost disappeared by separation. What remains of it stains as in the preceding description, and the slough contains a few free blood cells, apparently from some slight hæmorrhages. It will be noticed in this specimen that the effects of the cautery seem to be fairly local; that the repair of tissue begins in about one hundred hours, and that the specimen is devoid of inflammation, shown by the absence of leucocytic infiltration. It can also be seen that connective-tissue repair begins early along with the reproduction of the epithelium, especially about the edges of the burn and without leucocytic invasion or other evidences of inflammation. Of course, in the area which has been truly cauterized—that is, the sloughed area—all the normal histological construction has disappeared; blood-vessels, glands, interstitial structure, epithelium, and hyaline membranes are changed so absolutely in character that they can not be recognized as individual structures. This specimen also indicates that it is possible to have repair begin in a cauterized area without sepsis or other evidence of inflammation.

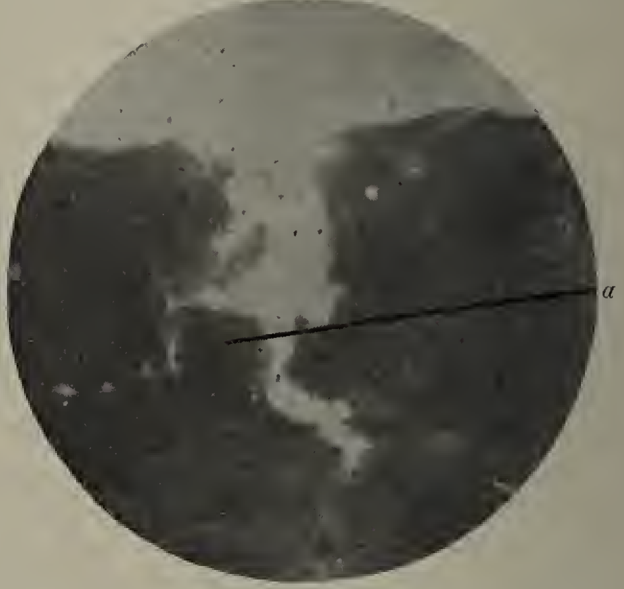

Fig. 4.—Cauterized area after three hundred and sixty hours. Leitz objective 3; eyepiece 1. × 90. *a*, granulation tissue.

Specimen 177 (Fig. 4) was removed three hundred and sixty hours after cauterization, and shows a further stage of repair than in the previous specimen. The sloughed area is gradually filling up more or less irregularly with new granulation tissue where the slough has come away, but in some places the filling-up process is going on faster than in other parts of the same specimen, and in some specimens repair has gone on faster than in others. The new tissue seems to be simply filling up the gaps, and no pressure effects can be found as yet upon the glands or blood-vessels which will in any way interfere with their functions.

Specimen No. 83 (Fig. 5) represents a fully healed specimen after cauterization. In this specimen the cauterized area is cut on cross section. The specimen shows new connective tissue, or scar tissue, which has entirely replaced the ordinary nasal structure; and in the area which has been cauterized only connective tissue can be found, and no vessels, glands, or other histological structures. In this specimen, which represents a newly but completely healed tissue, no contraction can be observed in the vessels or glands, nor can any cystic dilatation of the mucous glands be found as a result of constriction of the neck of these glands. However, it may be said that this specimen shows that the connective tissue replaces completely the physiological nasal structure.

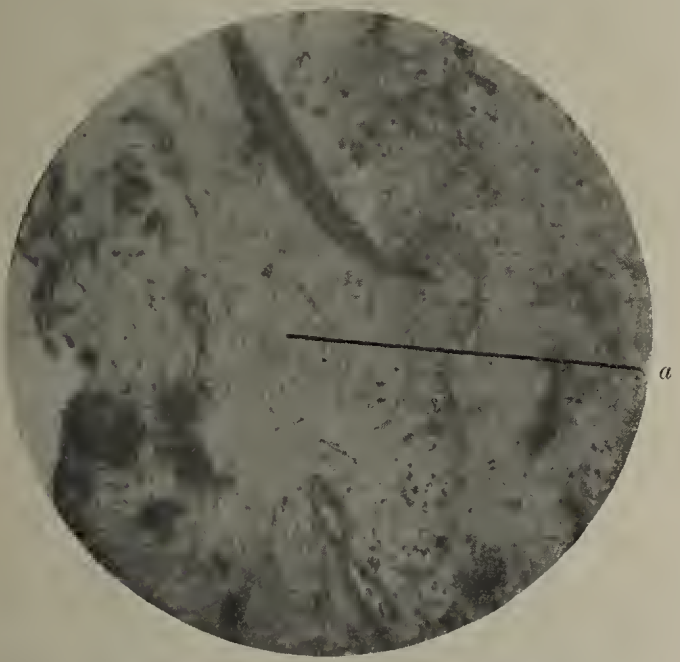

FIG. 5.—Cauterized area completely healed. *a*, cicatricial tissue.

From these observations I shall endeavor to analyze the effects of cautery and also to indicate its uses. If the cautery is used superficially over a wide area there results an extensive destruction of the epithelium, including the hyaline membrane. If the cautery point is rapidly pushed deeper into the tissue, the superficial effects, with wide devastation of epithelium and hyaline membrane, are not noticed, and the area of reaction is more circumscribed. The practical point of this observation is that the cautery should never be used superficially or over a large surface, but should be rapidly introduced into the deeper structures and immediately drawn forward or backward. Another practical point from the same observation is that the cautery point, on being placed against the epithelial surface, should possess no heat, or at least only a moderate degree—only sufficient to allow the cautery point to pass the epithelium and the hyaline membrane. After this greater heat can be turned on and the deeper structures, vessels, glands, and hypertrophic masses thoroughly destroyed to the bony structure.

It was noticed in specimen 156 that when a flat knife-electrode was used the greatest effect of the heat was observed at the edges of the cauterized mass. This was remarked because the edges of the slough showed more thorough destruction than the centre of the cauterized area, which still retained some nuclei stain poorly. It is difficult to explain this phenomenon, but it is probably due to the use of the wide-blade cautery. The edges of this cautery blade entering the tissue exerts more pressure than the flat surfaces. (This can be illustrated by pushing a pen through a sheet of paper, when it will be noticed that the pressure is exerted entirely along the flat part of the edge.) The edges also radiate the heat less readily than the flat surface, and, consequently, are hotter and burn fiercer. The practical conclusion to be drawn from this observation is that the cautery points which burn readily and evenly should alone be used, and those which radiate unequally or press with varying pressure should be discarded. The ideal theoretical point would be a stiff wire loop used as a knife, and the old familiar form of cautery knife blade must be discarded.

If the deductions from the examination of these specimens are correct (and assuming that the cautery should be applied to the surface at only such a moderate heat as will allow its penetration through the epithelium and hyaline membranes to the true hypertrophic deeper structure, which alone should be extensively destroyed), it follows that we must also forsake the old and time-honored method of "linear" cauterizing which has been and is still recommended where the cautery is advocated. In linear cauterization the cautery point is applied at one end of the turbinated tissue desired to be reduced at a dull cherry-red heat and is worked forward and backward in a straight line along the surface of the mucous membrane, destroying first the epithelial layer and then the deeper structures, as the cautery point is pushed forward and backward along the line of cauterization, until all the tissues to the bony structures are destroyed by heat. If it is true that the hyaline membrane and the epithelium are destroyed by a less degree of heat than the deeper structures, and if it is true that intense degrees of heat used on a point of the surface result in a destruction of tissue wider at the surface and narrower as we enter deeper into the mucosa, then we have, as a result of the present-day method of cauterization, a broad-based wedge of slough whose apex is at the bony layer and whose base represents a wide area of destroyed epithelium and hyaline membrane. Such a result defeats the real purpose of the cautery, which is to reduce the hypertrophic parts and leave as little as possible disturbed along the surface. This method of linear cauterization must therefore be discarded, except where it is desired to produce an extensive superficial effect—for example, in an ulcer of the mucous membrane requiring some stimulation. In all other cases we must use the cautery point in such a manner that the superficial tissues will remain as little altered as possible and the deeper tissue hypertrophy be destroyed. It would seem that this result could best be obtained by a rather stiff wire electrode, which could be made to penetrate the epithelium and hyaline membranes at a moderate heat, and when the point had reached the deeper structures, the current could be increased, the hypertrophic tissue in the immediate neighborhood destroyed, and the cautery withdrawn after the heat had again been somewhat reduced. This will necessitate the repeated introduction of the cautery point at different places along the hypertrophy, separated by about a quarter of an inch, and the employment of a short cautery point (Fig. 6).

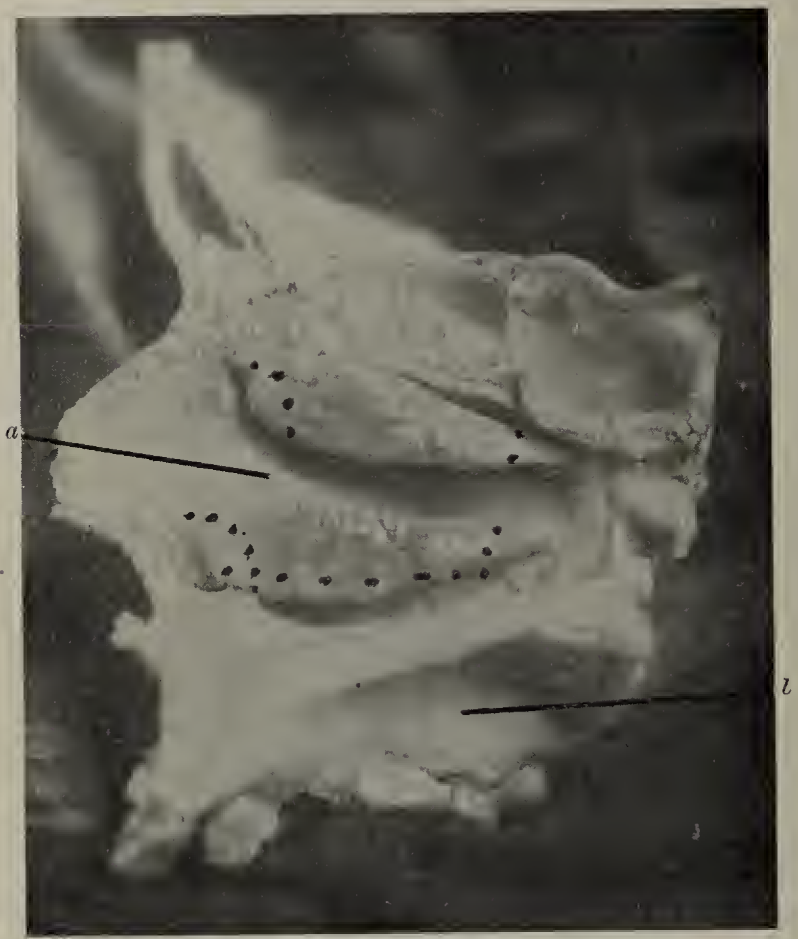

Fig. 6.—Cauterization points in nasal tissue, showing how cautery should be applied. *a*, middle meatus; *b*, mouth.

The method of usage would vary somewhat according to the locality of the tissue to be destroyed. On the sæptum a single puncture should be made, and the cautery point used submucous to destroy as much as possible; but the cases are few where any cautery should be used on the sæptum, and I can conceive only one pathological condition where the cautery could be safely used on the nasal sæptum—that one is a dilatation of the venous sinuses of the tuberculum sæpti, the only part supplied with erectile tissue. It may sometimes become necessary to destroy this part.

The real objection to the use of the cautery on the sæptum is that necrosis of the cartilagio sæpti is very apt to result from its disturbance, or irritation may arise from the use of any deep cauterization of the perichondrium. On the anterior end of the inferior turbinates, as well as the posterior end of both the inferior and the middle turbinated, the cautery should be introduced into the hypertrophic masses at several points in as nearly a circular series as possible, thus following the form of the periphery, which is almost always round. The posterior tip of either turbinated should be cauterized from the posterior pharynx, a palate retractor being used to give more space.

The lower border of the inferior turbinated body is quite frequently the seat of hypertrophy, and should be reduced by a series of cautery punctures, separated by about a fourth of an inch, made along the lower border.

That part of the ethmoid bone known as the middle turbinated should perhaps never be cauterized except at the posterior end, and sometimes at the anterior end. The close relation of this body with the ethmoidal cells, and their intimate relation in turn with the dura mater, should render the nasal surgeon extremely careful about cauterization in this area, and even the anterior tip sometimes contains an accessory ethmoidal cell which would render serious any attempt to cauterize the part. The danger is one of pachymeningitis or ethmoiditis.

(*To be concluded.*)

THE KYPHOTONE,

OR MODIFIED PLASTER-JACKET STOOL FOR THE CORRECTION OF HUMPBACK.*

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In the latter part of 1894 I presented before the Johns Hopkins Medical Society what I termed an apparatus for applying plaster jackets, or the plaster-jacket stool.

The report of this machine subsequently appeared in the *Johns Hopkins Hospital Bulletin*, No. 47, February, 1895, and in the *Medical News*, March 23d, of the same year.

In that paper, so far as I can find out in the literature, I first called attention to the importance of extending the spine *backward*, and the *maintenance of this position*, for the prevention or correction of the natural tendency of the deformity of Pott's disease—*i. e.*, the falling downward (flexion) of the upper segment of the spine and the contraction of the thorax.

For those not familiar with the apparatus I will state that the original machine consisted of an office stool surmounted by a bicycle saddle, and the top of the stool was so cut out on the sides as to allow the legs to go rather vertically down. The legs were fully extended, and the feet were fastened on rigid adjustable stirrups. To make the pelvis more thoroughly fixed, I took several turns of a wide strap around the lower part of the pelvis and hips, the bicycle saddle, and the top of the stool.

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* Read before the American Orthopædic Association, at New York, June 1, 1899.

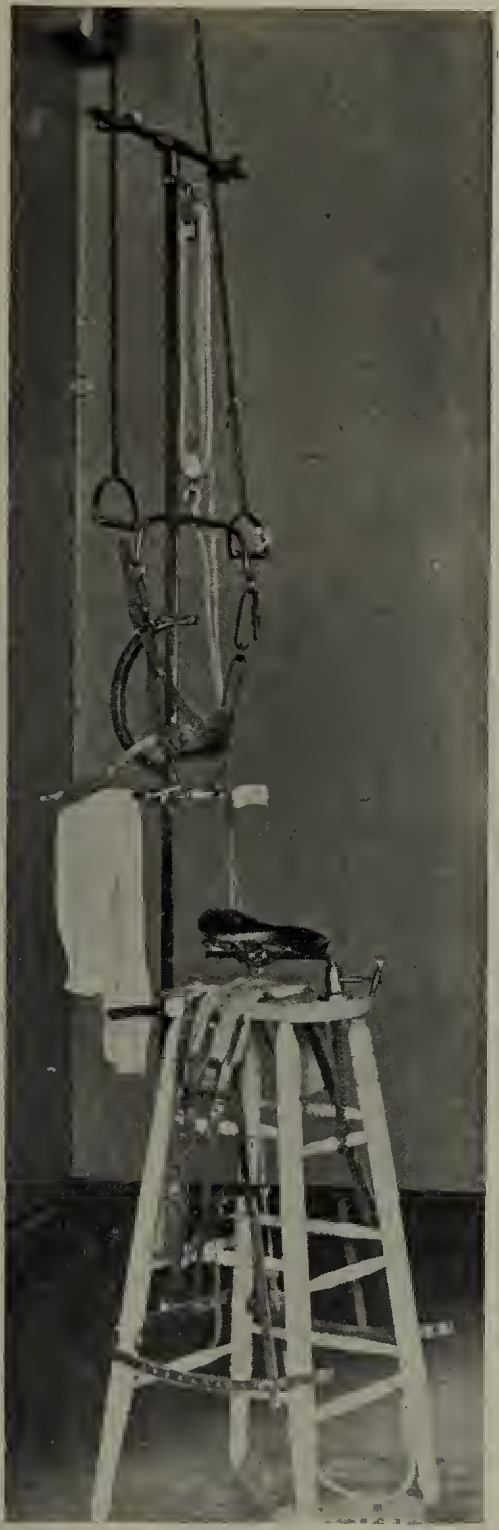

Fig. 1.—The kyphotone.

Rising from the lower, posterior part of the stool was a steel rod extending up as a T-piece some feet above the patient's head. By means of a hinge at the bottom, this rod could be moved through an antero-posterior arc and set by a pin and slot. Dependent from the T-piece were rigid handles and rods, adjustable for different lengths of arms and widths of shoulders. A Sayre head sling completed the apparatus, attached to the centre of the T-piece. The patient was placed on the saddle, the legs and pelvis were made as secure as possible, the arms were extended upward and backward as far as possible to the handles, the head sling adjusted, and traction made. Then the upright rod was carried backward and forced extension made with the ribs well raised and thorax deepened through the traction on the pectoral muscles, and lordosis was produced. In this position the jacket was applied. Among the advantages that I alleged for this apparatus were:

1. The jacket thus applied fixes the spine in the most advantageous position for lessening the tendency for the production of deformity, and when a plaster jacket is indicated for any reason in preference to a steel back brace I have found this method the most efficient in applying it.

2. The rapidity and ease with which a jacket may be applied, an advantage of no small moment in a crowded out-patient plaster room. These jackets require, as a rule, no trimming at the crease of the groin in front or in the axillæ, notwithstanding the fact that they are carried well down on the pelvis and high up on

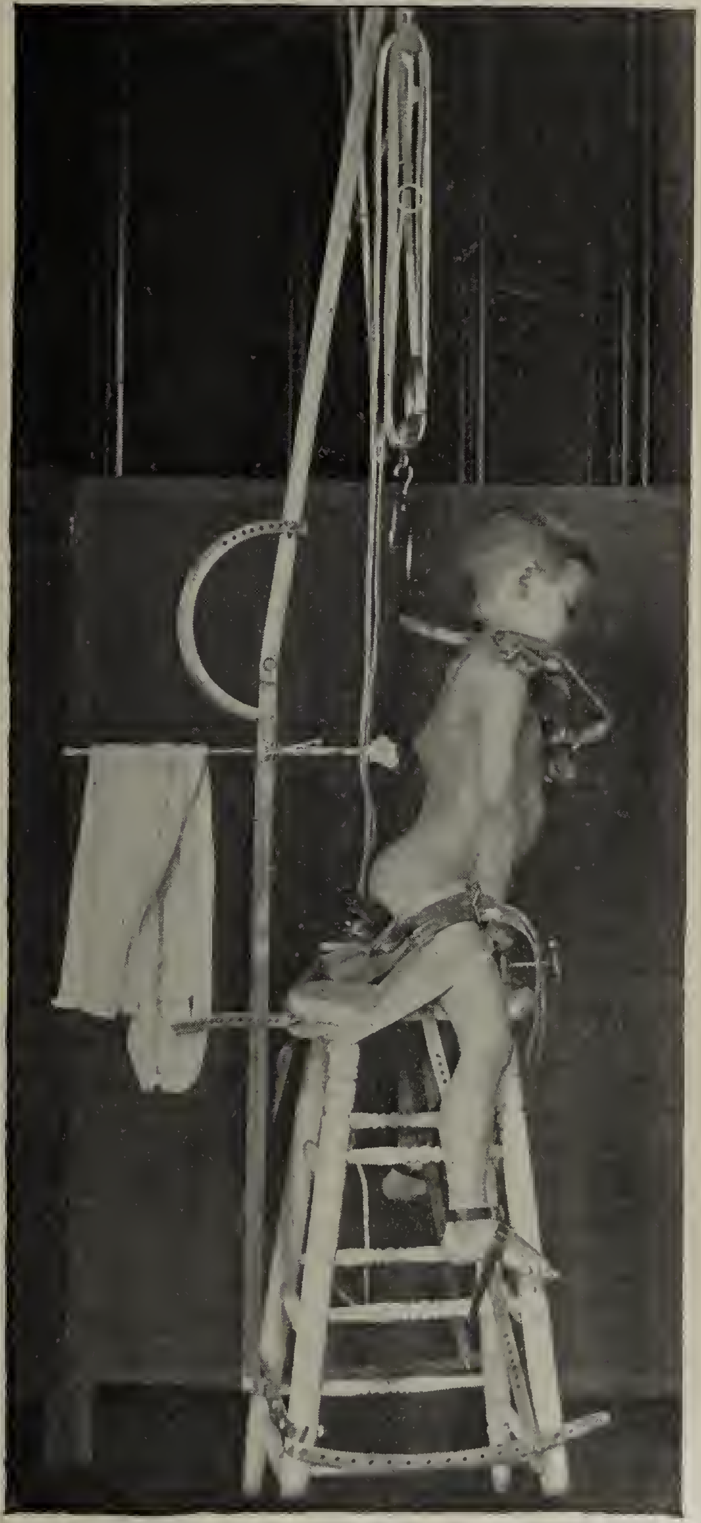

Fig. 2.—A patient (J. K.) on the kyphotone before reduction.

the sternum to the interclavicular notch. (The surgeon applies the jacket facing the patient.)

3. It seems applicable to mid-dorsal and lower dorsal and lumbar caries.

4. It seems comfortable to the patient, as the thorax is well supported and the *superincumbent weight is removed from the diseased vertebral bodies to the healthy articular processes* and hips.

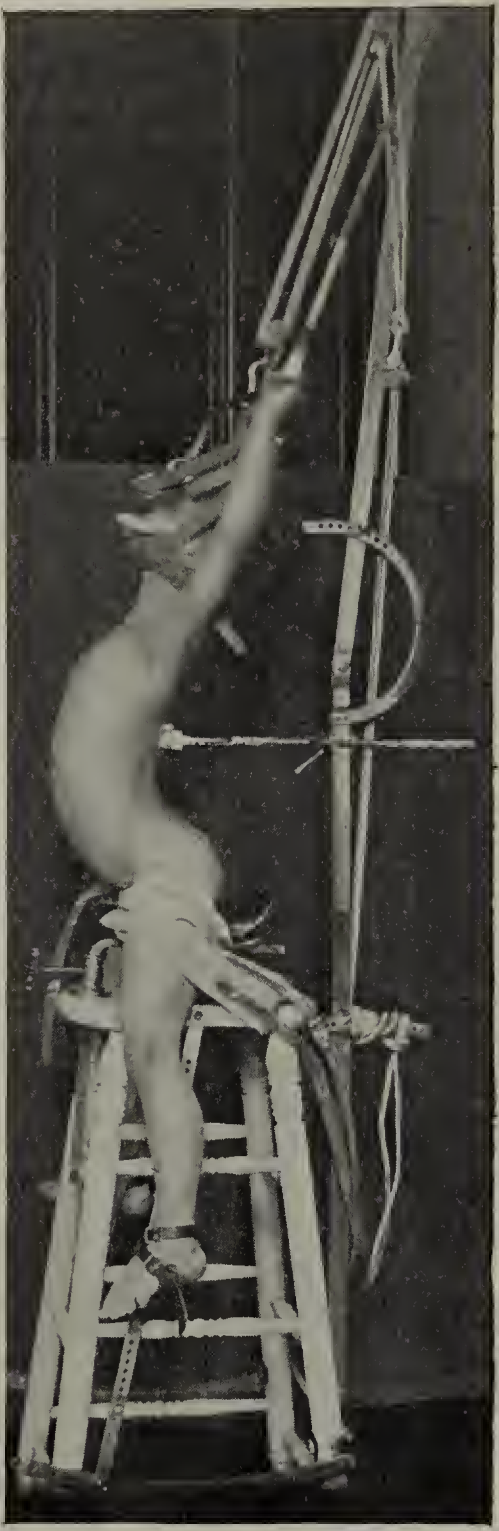

FIG. 3.—A patient (J. K.) on the kyphotone during the reduction of the kyphos.

5. It is not an expensive apparatus.

I would now add as advantages over other methods the absolute immobilization of the patient in the desired corrected position, one person being able to apply the method, without assistants to steady the patient; nothing can slip at the most important moment.

This apparatus without modification was in constant use in the out-patient department of the Hospital for Crippled and Deformed Children on nearly all suitable cases from 1895 to the middle of 1898, when the modifications to be described were added.

The criticism made of the original plaster-jacket stool was that in a severe case, with marked gibbosity, the deformity would be apparently increased by the increased compensatory lumbar lordosis, as there was nothing to regulate at what point the backward bending should occur.

Accordingly, when our interest was aroused by the work of Calot, Chipault, Tubby, Robert Jones, and others in the forcible correction of the deformity of Pott's disease by extreme traction, which was so generally tried, and Goldthwaite's excellent method of extension, modified from Metzger's suggestion, I had made a rod and small pressure plate, which could be adjusted to push forward on the gibbosity from the posterior upright, and thus tend to make the kyphos, the centre of the arc of lordosis, as is desired. Just above this rod I have also added a joint permitting antero-posterior motion and fixation, a means by which the handle rods may be adjusted by a spring instead of thumbscrews, and the top of the T-piece can rotate when the upright is drawn back to avoid sudden jerking of the arms.

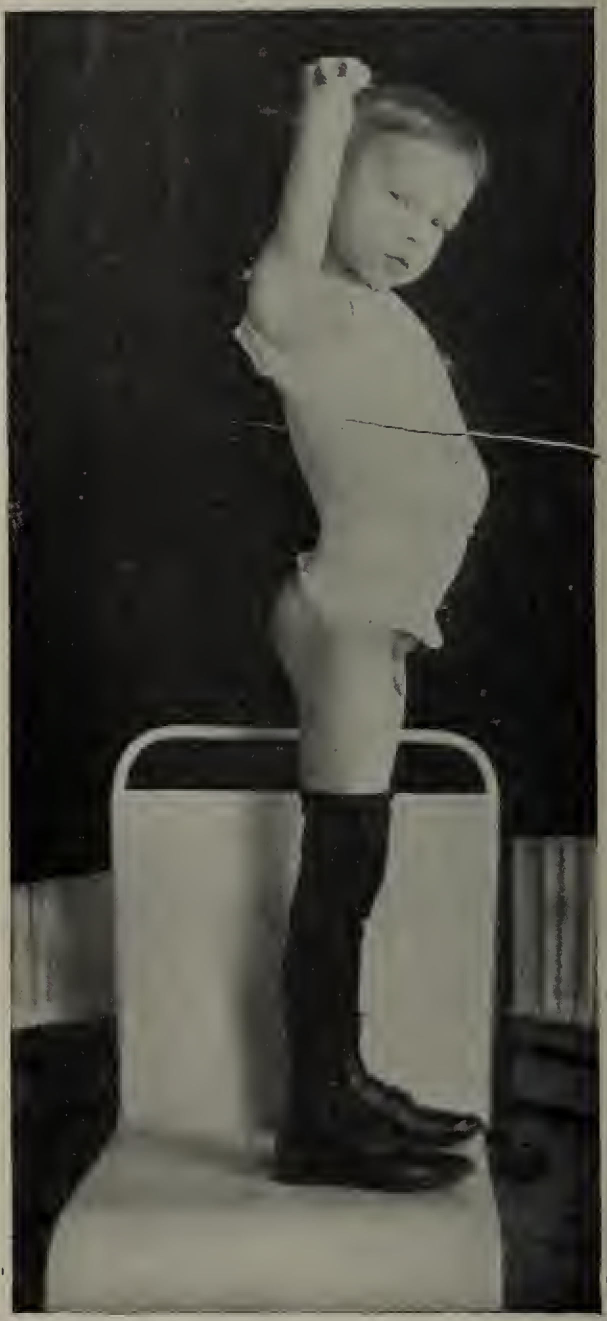

FIG. 4.—A patient (J. K.) showing the result of reduction and the "summer jacket."

In ankylosed spines we do not use any *force* simply rendering them as straight as possible short of pain;

but in *early cases*, and those in which the *deformity is increasing*, it has proved an instrument of precision in a large number of cases. We have called it the kyphotone (κυφός, hunchback, and τείνειν, to extend), as being shorter than the old term.

The technique of this method is as follows: The patient is placed on the saddle and the legs and hips are made fast, as previously described; the portion of the spine below the deformity, by means of the pressure rod placed an inch above the apex of the kyphos, is then made perpendicular to the floor, then the head sling is put on, and as much traction is made as the patient can tolerate, the hands being fully extended upward and backward on the handle rods. That portion of the upright which is above the pressure rod is carried back to any angle at which it is desired to make traction, before actual extension is applied. In this extended position the jacket is applied. As soon as traction is made on the head sling the padded pressure plate comes over or just below the apex of the kyphos.

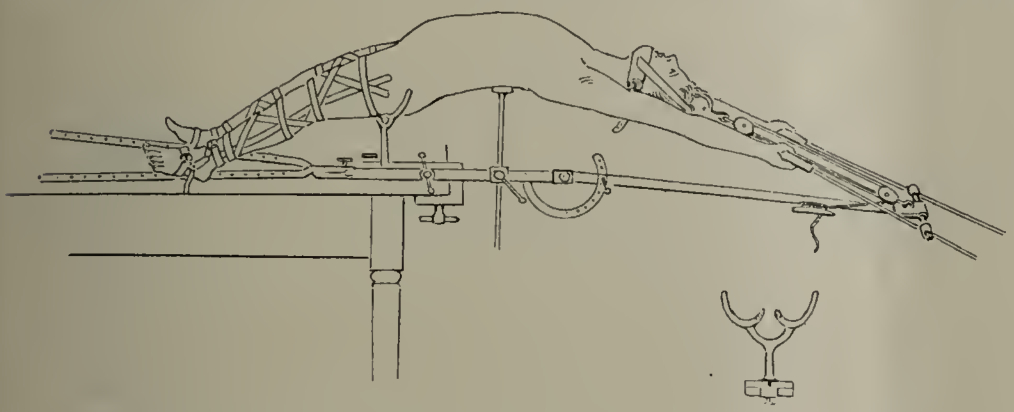

Fig. 5.—The recumbent kyphotone attached to a table. The ischiadic crutch.

Our results have been gratifying, not only in the lessening or obliteration of the deformity, but in the improvement of the general health and nutrition from increased lung expansion, and the clearing up of paraplegic symptoms, the latter as seen in other methods of forcible correction of humpback. The photographs show the method and some few of the cases, but I shall not go into details about them; suffice it to say that we use this apparatus habitually in all our favorable cases, and have done so with satisfaction. I have not attempted the use of anæsthesia with this method, but rather avoided it. If desired, the kyphotone could be tipped backward and rested on a table, or some similar support, to anæsthetize the patient, if it is deemed expedient to use sufficient force in any case to warrant it.

I am having a recumbent kyphotone made, as shown in the cut, for use in cases of such acuteness that the recumbent posture would be safer than even momentarily sitting up until the head sling is put on and the superincumbent weight is removed.

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GENERAL REMARKS ON

THE PATHOLOGY AND TREATMENT OF STRICTURE OF THE URETHRA.

By CHARLES GREENE CUMSTON, M.D.,

BOSTON.

(*Concluded from page 673.*)

The treatment of stricture must be in accordance with the character of the lesion present in a given case. The object of treatment is a double one. Firstly, the permanent removal of the stenosis, which in many cases may be accomplished by dilatation, or an incision through the stricture, either internally or externally, may have to be resorted to, which latter operations are termed internal and external urethrotomy. In order to secure a permanent result, which we obtain from dilatation or by urethrotomy, it is necessary to follow out the treatment by a long-continued use of bougies. The methods employed for dilatation may be divided into gradual and forcible. The first may also be subdivided into temporary and permanent dilatation. When employing gradual temporary dilatation, it is better to get through the stricture with a cylindrical metal sound, using no force and allowing the instrument to remain in the stricture about two minutes. This sound is then withdrawn and, if the condition of the patient as well as the dilatability of the stricture will admit of it, another sound, the next largest in diameter, is passed, then a third, and so on.

In the course of the next few days, always keeping in consideration the reaction presented by the patient, the sounds are again passed until a No. 24 Charrière can pass with ease.

When carrying out gradual permanent dilatation, the catheter, which was introduced just far enough to allow the removal of the urine from the bladder, is left in the urethra for one, two, or three days, and is then replaced by the next largest size. After the stricture has become sufficiently dilated—and by this I mean to the extent of at least seven to eight millimetres—bougies are passed at intervals.

A method approaching forcible dilatation is as follows: The patient is etherized and then cylindrical or slightly conical metallic sounds are passed through the stricture quickly one after the other, gradually increasing their size in such a way that, although the operation is in reality a forcible dilatation, still the amount of force used is not sufficient to cause a rupture of the stricture. True forcible dilatation simply means the passage of the large sound through the stricture with considerable force, a No. 7 Charrière being the smallest that should be used for such purposes.

Internal urethrotomy is performed by an instrument having in most instances the curve of an ordinary sound and carrying near the end a small knife, which is concealed in the instrument. When the instrument has passed the stricture the knife is made to come out and the instrument is withdrawn, thus dividing the stricture. The instrument that I usually employ is the one invented many years ago by Civiale, but occasionally Maisonneuve's urethrotome will be found of much service. Cutting the stricture may be done from in front backward, but it is better to cut it from behind forward. In this case, however, the stricture must be sufficiently permeable to allow the instrument to be passed through it.

In those cases of stricture which are treated by dilatation and which present some difficulty in the passage of the instrument through the narrow portion, or when the passage of sounds causes irritation, the patient should be kept in bed on a light diet and the bowels kept freely open with mild laxatives; if there is much pain, cold compresses should be applied to the perinæum and retained there by means of a T-bandage, and if these do not give relief the patient should be placed in a tepid Sitz bath. In some cases of callous strictures massage may be recommended with certain advantages. The ring of fibrous tissue should be rubbed in a circular movement with the tips of one or two fingers, and then the rubbing should be made toward the posterior urethra. This may be repeated every second or third day for several times, and then, after a while, it may be carried out while the sound is in the stricture.

External urethrotomy is not a difficult operation to perform, provided the stricture will allow a sound to pass through it. All that is necessary is to place the patient in the lithotomy position with the legs very much flexed, especially at the thigh. The grooved sound having been introduced and passed through the stricture, the urethra is cut down upon in the median line, layer by layer, until the canal is reached. If the stricture is seated in the membranous portion of the urethra the bulb should be allowed to move forward, because if the latter is in a healthy state it will bleed very considerably if incised. On the other hand, if the stricture has developed in the bulbous portion of the urethra itself the amount of bleeding is very trifling.

The scrotum should be held either forward or backward, according to the point of the incision, and in certain cases it may be necessary to incise it along its sæptum. The urethra should be split open along the director through the entire extent of the stricture, so that the latter is freely exposed. Now, if a sound can not be made to pass through the stricture, the instrument should be introduced down to it, and then the urethra is divided just below the tip of the sound; after this has been accomplished the central end of the stricture is to be sought for. The urine which is in the bladder will trickle out when the organ is pressed upon and will give the best indication for the central end of the stricture; but if the bladder does not contain urine, it is perfectly safe to wait for the spontaneous appearance of the stream, and then the central part of the stricture can be found and incised. The cicatricial tissue should be excised as completely as possible, and the ends of the urethra should be mobilized so as to be brought into apposition, and then should be united by means of fine catgut sutures.

After the stricture has been laid open the bladder should be emptied by means of a metal catheter, and after the evacuation of the urine it should be thoroughly irrigated with a mild antiseptic solution, such as a four-per-cent. boric acid.

I believe that it is unnecessary to insert a permanent catheter, and, more than that, I think it is injurious. The wound in the perinæum, which must be kept open under all circumstances, is dusted with iodoform and packed with iodoform gauze. The integuments around the wound should be covered with vaseline, and then proper dressings, retained in place by a T-bandage, are applied. The patient urinates through this opening when the bandage has been removed, and after evacuation of the bladder it is again applied.

After about ten days a stout metal sound, about a No. 24 Charrière, is introduced through the meatus along the canal, and this should be repeated about once a week. When the patient is discharged he should be instructed to pass the sound himself once a week, and later once a fortnight; if he can not do this himself he should return to his medical attendant and have it done. This treatment is usually very successful and, so far as the operation goes itself, the mortality should be nil.

The central end of the urethra is generally found without much difficulty when operating on gonorrhœal strictures, but it occasionally happens when operating on traumatic strictures, especially those due to fracture of the pelvis, that the central end can not be discovered; but, if you will press the bladder and make the urine flow out, you will be successful in almost every case, and for this reason you should allow the bladder to be filled at the time of operating.

To my mind the only proper treatments to be employed in cases of stricture are dilatation with sounds, internal urethrotomy, and, in exceptional cases, external urethrotomy. Temporary dilatation is useful when the stricture is in the stage of exudation or in the early part of the connective-tissue stage, but forcible dilatation I do not care for. After dilatation has been accomplished, any inflammatory process that may be present should be treated locally in order to prevent a recurrence of the lesion. In the callous stage, if the fibrous tissue can be absorbed by the use of hydrotherapy combined with massage, a good result may be expected. Dilatation is also used as a preparatory treatment for internal urethrotomy.

Internal urethrotomy should be employed in those cases of stricture which have a valvelike or a bridge-shaped form, and in those cases where the connective tissue encircles the canal, but to a limited extent only, and which have been treated unsuccessfully by dilatation. The stricture must be completely cut through by the urethrotome, carrying the instrument from behind forward. You must bear in mind, however, that internal urethrotomy is simply an operation intended to pave the way for a future treatment by dilatation.

All other cases should be treated, in my opinion, by external urethrotomy, because, in order to obtain a permanent cure, that is to say, the entire removal of the lesion, dilatation with sounds will only accomplish this when the stricture is in the stage of exudation. All cases that have reached the connective-tissue stage can never be permanently cured, because after dilatation the connective tissue still remains, and a relapse is consequently inevitable sooner or later.

The incision made by internal urethrotomy will heal rapidly, and consequently is not superior to dilatation, but in the case of external urethrotomy healing takes place with interposition of cicatricial tissue between the edges of the walls of the urethra, and consequently an actual increase in the size of the calibre of the canal takes place, which can be made permanent by following up the treatment by the passage of bougies for some time after the operation, and a good result may be expected even if this cicatricial tissue should somewhat contract. External urethrotomy will give good results even in the severer forms of stricture.

If external urethrotomy is performed and the central end of the urethra can not be found, and if there exists a complete retention of the urine, or if this should occur after the operation, or if in the case of a traumatic stricture the cicatricial tissue should extend as far back as the neck of the bladder, there remains but one method, and that is posterior catheterization.

Posterior catheterism is usually quite difficult in these cases, because changes in the bladder are present or some pathological condition has developed in the prevesical space, such as the formation of tough cicatricial tissue, which occurs after fracture of the pelvis. A median incision of the abdomen is made, and when the bladder has been found it is sutured to the incision with silk before it is opened, and then the urinary reservoir is incised for about one or two centimetres. After this opening has been made the sounds are passed into the urethra from the bladder. The cicatricial tissue which is interposed between the two ends of the urethra is then excised as completely as possible, and then the ends of the canal are united by sutures. This, however, is rarely possible, and consequently we should see that the new connective tissue which is about to form shall fulfill its purpose.

When the surgeon is dealing with a case where the amount of tissue excised will prevent the two ends of the urethra from being approximated and sutured, a constant and careful use of the bougies will be found quite sufficient to bring about a cure. In some cases where the dissection of the urethra has been very extensive, that is to say, where several centimetres have been removed, a plastic operation will later on be necessary. The stricture should be freely laid open, the incision covering fifteen to twenty centimetres if necessary. The wound is then packed with gauze, and when it has become entirely covered by epithelium an incision is carried longitudinally along both sides of the urethra and two narrow strips of tissue are dissected off and then are brought together and sutured with catgut. We thus form a new urethra, and later on skin grafts may be made so as to restore the organ almost perfectly.

There are other methods which may be employed in the treatment of stricture, and one manner is as follows: A grooved metal director is carried from the bladder to the wound in the perinæum and is connected with a soft-rubber catheter whose end has been cut off, and is then drawn sufficiently far back so that the deep end of the catheter reaches to within a few centimetres of the perineal wound. The beak of another soft-rubber catheter, which has been introduced from the external orifice down the urethra to the wound, is attached to the first, and then the catheter introduced from the bladder up into the urethra, and which projects through the opening in the bladder out through the incision in the abdomen, is drawn back sufficiently so that the oval ends of both catheters lie in the bladder. The catheters are retained in this position by passing a sterilized safety pin through the catheter over the abdominal incision and another in front of the meatus.

The prevesical space is plugged with some antiseptic gauze, as is likewise the perineal wound, and then a proper bandage is applied. The catheter in the bladder is connected with a rubber tube which is long enough to go down to a receptacle under the bed, and thus the urine is constantly drawn off by a siphon action. If the permanent catheter can not be retained on account of irritability of the urethra, it must be withdrawn and the treatment carried out by a constant passage of bougies. When the perineal wound has healed, the vesical catheter is withdrawn and the resulting vesico-abdominal fistula is allowed to heal, or, if necessary, it may be closed by the surgeon. The length of time required for healing in cases where posterior catheterization has been performed varies between twenty and forty days, and therefore is shorter than where a simple perineal wound has been made. The duration of the after-treatment of cases of severe stricture is consequently not increased by posterior catheterization.

The permanent catheter in the urethra is removed when the perineal wound begins to close, and this usually takes place during the fifth week or a little later. When cicatrization is complete a sound must be passed at regular intervals.

Traumatic strictures are those which most usually require posterior catheterization, but gonorrhœal strictures may also require it when they are extensive. The mortality of posterior catheterization may be fairly put at about ten per cent., but the majority of the deaths from this operation are in cases of gonorrhœal strictures. The most rapid recoveries that take place after posterior catheterization are cases of fresh rupture of the urethra, and a much longer time is required in the case of stricture.

Before closing this lecture I should like to say a few words regarding the proper behavior of the surgeon in order to prevent, if possible, any infection of a patient, or, if the patient is already infected, to diminish the existing septic condition. As in every other part of the body, the mere presence of pathogenic bacteria, especially the pyogenic types, is not sufficient for the production of suppuration or sepsis, and you are all aware that certain conditions must exist, or that certain tissues must present a certain lack of vital activity, which do not exist in perfectly normal individuals. This lack of vitality must be present in order that infection shall take place, and, if it exists, the probability is very great that infection will arise. It may possibly be avoided by endeavors on the part of the surgeon to keep the septic germs away, or to destroy or hinder them in their development; or, on the other hand, a general tonic treatment should be instituted in order to revive the general condition of the organism, so that it may deal with the pyogenic bacteria. To render the genito-urinary apparatus antiseptic, many are the remedies which have been recommended for internal administration, but the ones that I should advise you to rely upon chiefly are the three following—namely, urotropine first and foremost, then tincture of eucalyptus, and salol in large doses.

Locally, iodoform, citrate of silver, or cyanide of mercury are what I particularly prefer. The disinfection of an infected living tissue by means of chemical agents is an impossibility. All disinfection, if I may be allowed to use this expression, can only be obtained on living infected tissue on the condition that the organism aids the treatment both essentially and actively, and in order to bring about a good result the proper thing to do is to remove the secretions from the wound, and this is obtained by free incision and drainage.

The special application of these principles to the bladder and urethra supposes a certain knowledge of the particular characteristics of these organs. According to the researches of Lewin, Goldschmidt, Alapy, and others, it has been shown that substances which are neither volatile nor corrosive are not absorbed by the bladder when this organ is healthy; that they are only absorbed in a very limited amount by the mucous membrane of the urethra, but that they are absorbed by the prostatic vesicles, the ureters, and the mucous membrane of the pelvis of the kidney. The mucosa of the urethra possesses a high degree of irritability, much more so than that of the bladder, and you all know that even in a healthy condition numerous bacteria are found in the canal.

Numerous researches have shown that in cystitis—which, of course, leads us to presume that micro-organisms are present—the germs may enter the urine by way of the blood, although their commonest route is an upward extension along the urethra, and it is set up only in those cases where a retention of the urine is present at the same time. A large number of bacteria have been found in the bladder in cases of cystitis—namely, the bacterium coli, the proteus, staphylococcus, the streptococcus, gonococcus, and the bacillus of tuberculosis, either in pure cultures or in the form of a mixed infection. We also get a certain number of organisms which can not be cultivated on any culture medium that is at present employed. The bacillus of tuberculosis and Hauser's proteus are apparently able to set up a cystitis without any adjuvant cause, and you all know that there are certain forms of cystitis which occur without the presence of bacteria and are termed toxic cystitis. The orifice of the urethra and its surroundings must be disinfected very carefully before passing the sound, and for this purpose you should use soap and water freely, then alcohol, and afterward an antiseptic solution.

Every instrument which is to be introduced into the urethra or bladder must be perfectly smooth and present no nicks. In regard to rubber catheters, you should always remember that the difficulty is getting the *interior* of the instrument clean, and, as they can not stand boiling for any time, it is better never to use the same instrument very long. They should always be boiled, as this is the only sure and proper way of rendering them sterile. Sterilized lanolin is the only proper lubricant.

In those cases where there is an inflammatory process in the urethra, or where the urine has undergone pathological changes from a catarrhal or suppurating process, you should always precede the passage of instruments by a careful irrigation of the urethra by means of a 1-to-3,000 solution of citrate of silver, and then the bladder should be irrigated with the same solution. After catheterization has been done the urethra and bladder should be irrigated in the same manner as before the operation, and it will do no harm to leave fifty or sixty cubic centimetres of the solution of the silver salt in the bladder, which will be expelled with the first micturition.

You must also bear in mind that the so-called urethral or catheter fever is purely and simply an elevation of the temperature due to infection, and that this may be avoided by attending closely to strict surgical cleanliness—antisepsis and asepsis.

871 Beacon Street.

THE TECHNIQUE OF LUMBAR PUNCTURE.*

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Since Quincke's original description of the technique of lumbar puncture (1), this method of withdrawing cerebro-spinal fluid has been used by so many investigators in different parts of the world that it is not surprising that certain variations should have developed in the method of procedure. The fact that such variations have developed must be my excuse for occupying the time of the society with a subject so intrinsically simple and about which so much has already been written.

Before going into a description of the methods it may be well to refer to certain anatomical facts which bear upon the subject.

The lumbar portion of the vertebral canal is intermediate in size between the cervical and dorsal portions. This size is maintained in the first piece of the sacrum, but below this point the sacral canal becomes much constricted. The spinous processes of the lumbar vertebræ are short, thick, and broad, and their direction is approximately horizontal.

The ligamenta subflava, uniting the adjacent laminæ, and the supraspinous and interspinous ligaments are all especially thick and dense in the lumbar region.

The dura mater of the cord is loosely attached to the bony walls of the canal by delicate areolar tissue and terminates in a funnel-shaped process halfway down the sacral canal. The interval between the dura and the arachnoid membrane, called the subdural space, is very small, the surfaces of the membrane under normal conditions being in contact, as are the pleural surfaces. This space contains only enough fluid to lubricate the surfaces and has no communication with the subarachnoid space or with the ventricles of the brain.

The interval between the arachnoid and the pia, the subarachnoid space, is, on the other hand, quite large, and it is this space that contains the cerebro-spinal fluid. This subarachnoid space communicates freely with the corresponding space in the skull, and also communicates with the general ventricular cavity by means of the foramen of Magendie, a small opening six or eight millimetres in diameter at the inferior border of the fourth ventricle, and by the lateral apertures of the fourth ventricle (2).

The spinal cord in the adult reaches to the lower border of the first lumbar vertebra. At birth and during the first year it extends as far as the third lumbar vertebra.

Below this the lumbar and sacral nerves extend down the canal as the cauda equina, floating in the cerebro-spinal fluid and tending, especially in children, to occupy the lateral portions of the canal and to leave a median free space about five millimetres wide (1).

Much variation is seen among different investigators as to the choice both of the position of the patient and of the point at which the puncture shall be made. Thus Quincke (1) directs that the patient be placed in the horizontal position, on the side, and that the needle be introduced between the third and fourth or the fourth and fifth vertebræ.

Stadelmann (3) and Cassel (4) use the horizontal position and puncture between the second and third vertebræ.

Fürbringer (5), Chipault (6), and Pfaundler (7) prefer to enter through the lumbo-sacral space—*i. e.*, the interval between the fifth lumbar vertebra and the sacrum—and to have the patient held in the sitting position.

Jacoby (8) selects the sitting posture for adults and older children, while with infants he suggests that they be laid face downward across the knees and that flexion of the spine be obtained by pressing down the shoulders and buttocks.

In discussing the choice of location at which the puncture shall be made there are three chief requirements to be considered:

1. That the needle shall find ready entrance to the subarachnoid space.
2. That the tapping be made at the point least likely to admit of damage to the nervous structures of the canal.
3. That the fluid obtained shall be as rich as possible in sediment.

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* Read before the Section in Pædiatrics of the New York Academy of Medicine, April 12, 1900.

As regards the first requirement, it may be said that this is sufficiently well met by entrance through any of the lumbar spaces or through the lumbo-sacral space. There is usually no difficulty in reaching the canal, if reasonable care is paid to the details of technique.

Possible injury to the cord can be excluded by entering at some point below the third lumbar vertebra. In adults it is perfectly safe to puncture between the second and third vertebræ, but in small children there is some chance that the cord may be touched.

With free access through the three lower spaces I can see no good reason for selecting the second space. The floating nerve roots of the cauda equina move about so readily that they are not likely to be damaged even if touched by the point of the needle.

The last requirement, that of obtaining fluid richest in sediment, is best fulfilled by tapping in the lumbo-sacral space.

If the puncture is made for purposes of diagnosis, then it seems to me best to enter the lumbo-sacral space and to have the patient, if a child, in the sitting position. With adults, and especially with those who are delirious or comatose, or who are greatly prostrated, the difficulties of operating in the erect position are so great as to render it impracticable.

Puncture in the upright position should then, in general, be confined to small children.

Whatever the position decided upon, the essential point is to secure the greatest possible degree of ventral flexion of the spine in order that the lumbar laminæ may be separated as widely as possible. If the child is in the sitting position, it must be bent well forward and firmly held. If the horizontal position is selected, the patient should be made to curl up, with the knees and chin as near together as possible.

For right-handed operators the manipulation is best done by standing on the right side of the patient and bending over the body, the patient being on his right side and as near the edge of the bed as may be.

Anæsthesia.—General anæsthesia is in most cases entirely unnecessary. The pain is usually no greater than that produced by puncturing the chest. By anæsthetizing the skin with cocaine or a freezing spray the needle can usually be introduced with very little discomfort. Where the patient is delirious or very restless, it is well to have at least two assistants who can hold him firmly in the proper position and can prevent any sudden movement, since even a slight motion may be very disconcerting during the manipulation of the needle.

Asepsis.—Just such perfect asepsis, as to field of operation, instruments, and hands, is demanded in this small procedure as would be exercised by the surgeon in opening any serous cavity. Not only must the danger of infecting the meninges be guarded against, but the fluid evacuated must be free from the suspicion of contamination if a bacteriological examination is to be made.

The lower half of the back and the operator's hands are carefully sterilized in the usual way. The needle, and the syringe when possible, is boiled for ten minutes. If the syringe can not be boiled, it should be filled and soaked in five-per-cent. carbolic solution for several hours.

Landmarks.—The different spinous processes may usually be located either by counting downward from the twelfth dorsal vertebra, which can be identified by its articulation with the twelfth rib, or by locating the first spinous tubercle of the sacrum, which is usually prominent and distinct from the lower ones.

When patients are fat or very muscular, however, the bony prominences are often very indistinct and difficult to identify in this way, and much the most satisfactory means of locating the vertebræ is, as Jacoby well says, by taking a line between the highest points of the iliac crests. This line regularly crosses the fourth vertebral spine. When the spinal column is well flexed and in position for puncturing, I have found that the line usually passes near the upper edge of the fourth spine. Occasionally it will cross the space between the third and fourth spines.

Instruments.—An antitoxine needle four or five centimetres (an inch and three quarters or two inches) long and one millimetre in diameter serves admirably in children. For adults the needle should be eight or nine centimetres long and of a diameter sufficient to give the rigidity needed to penetrate readily the tough ligament.

While the needle can be, and frequently is, introduced without being attached to the syringe, the latter is a distinct aid to one in directing the needle accurately, and I always prefer to use it for that purpose. A syringe which can be sterilized by boiling is most convenient, but is by no means essential. If the syringe is sterilized by soaking in carbolic solution, it must be thoroughly washed out with sterile water before being used.

A sterile test tube stoppered with cotton should be at hand to receive the fluid.

A mercury manometer for estimating the cerebro-spinal pressure is very convenient, but, as Stadelmann says, an approximately accurate idea of the pressure can be obtained by using a bent glass tube of small calibre. The short horizontal limb is attached by a bit of rubber tube to the needle, while the long perpendicular limb will record the height of the column of fluid.

Puncture.—After the desired space is located, the interval between the spines is marked with the finger of the left hand, and the needle is introduced at a point opposite the upper edge of the lower spinous process and in a line just outside (*i. e.*, a few millimetres from the median line). The needle is directed *very* slightly upward and toward the median line, with a view to having it in the median line when it enters the sub-arachnoid space. In children the puncture can, as

Quincke says, be made directly in the median line; but even in children the supraspinous and interspinous ligaments offer considerable resistance, and it is usually wiser to avoid these by going slightly to one side. As the needle passes through the interlaminar ligament the resistance is increased and a slight grating feeling is noticed; beyond this the needle slips in very easily and is introduced until fluid begins to appear in the syringe.

In children, the fluid is reached at a depth of from two to three centimetres; in adults, at from four to seven centimetres. If bony resistance is met in introducing the needle, the latter is to be withdrawn for a slight distance and directed at a slightly different angle.

After the fluid appears, the syringe is taken off and the fluid is collected in the sterile tube. In the horizontal position the fluid usually flows drop by drop. In the upright position it frequently runs in a gentle stream. It is much better to let the fluid run from the needle than to aspirate with the syringe. The sudden reduction of pressure by aspiration may easily produce unpleasant symptoms. Occasionally, when the flow through the needle is unsatisfactory, it may, however, be necessary to apply gentle suction with the syringe.

The amount of fluid to be removed will depend upon the purpose of the puncture. If for diagnosis alone, ten or fifteen cubic centimetres are usually ample. If for therapeutic purposes, it may seem desirable to remove several times that amount. The quantity of fluid which can be safely withdrawn varies enormously in different individuals and under different pathological conditions. Perhaps the safest guide is the condition of the patient. The flow should be stopped at once upon the appearance of such symptoms as headache, faintness, or a change in the character of the pulse.

Kroenig (9) relies upon the manometer and stops the flow when the cerebro-spinal pressure reaches 125 millimetres of water. This he regards as the normal pressure when the patient is in the horizontal position.

When the needle is withdrawn, a procedure which usually requires some force, the skin wound is covered with a bit of sterile cotton and with collodion.

Accidents.—These are infrequent and, for the most part, trivial and unimportant, although they may be annoying. It rarely happens that any difficulty is experienced in entering the spinal canal; but occasionally, when one is sure that the needle is in the canal, no fluid will appear.

This may be due to one of several causes: The needle may have become plugged while being introduced, or it may not have entered the subarachnoid space, even though in the canal. There may be inflammatory adhesions between arachnoid and pia, with more or less complete obliteration of the subarachnoid space; or the contents of the space may be of gelatinous or even wax-like consistence. Packard (10) cites one such case.

Occasionally the fluid, instead of being clear or turbid, may be blood-stained from injury to some small vein. Aside from the fact that it obscures the character of the cerebro-spinal fluid this has no importance.

A number of more serious accidents or sequelæ have been reported, yet they are certainly of very rare occurrence, and have been associated in almost every case with the removal of a very large quantity of fluid.

Rieken (11) saw in one case violent twitchings of the right leg during puncture.

In a few cases of uræmia and brain tumor death has followed, within a few hours, the withdrawal of a large amount of fluid.

Those conditions in which the greatly increased cerebro-spinal pressure has existed for some time—*e. g.*, brain tumors—are the ones apparently which bear least well the sudden removal of a large quantity of fluid.

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THE TREATMENT OF HAY FEVER BY SUPRARENAL GLAND.*

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This paper must necessarily be of a clinical character, because such a subject can only be treated from a clinical standpoint. The school of experimental pathology can not produce this disease in animals. The pathologist who examines bodies of patients who have suffered from this disease announces no results from his study. The disease itself never proves fatal, nor are the complications which arise during the course of the disease ever in themselves fatal, although they may completely overshadow the original disease, leaving no trace of the hay-fever lesion. The nasal pathologist who examines small pieces of tissue which have been removed from the nose of a hay-fever patient finds, as a rule, no explanation of the disease in the nose, the principal lesions being hypertrophy of the mucous membrane and sometimes suppurative disease of the accessory nasal sinuses, but never does the nasal pathologist find as a result of his work anything which would indicate the cause of hay fever.

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* Read before the New York County Medical Society, February 26, 1900.

The popular clinical belief that it requires three links of cause to complete the chain which results in hay fever also fails at times. The nerve specialist who claims that one of these links must lie in the region of his specialty finds no lesion. The pollen theory falls to the ground from the fact that ordinary dust will frequently precipitate an attack. The nasal pathologist can not describe a lesion which is characteristic of this disease.

Much like exophthalmic goître, the patient may have one of the conditions develop without all of the three characteristic links which make up a typical picture of exophthalmic goître. The disease, therefore, comprises a clinical picture of much suffering and great annoyance from functional disturbance of the respiratory tract, and, so far as our knowledge to-day extends, can only be considered from this clinical standpoint, and the treatment employed only emipirically.

The most apparent and constant clinical lesion is a nasal vasomotor paralysis with an accompanying congestion and œdema, producing certain symptoms which are distinctly characteristic, but which are never more than the symptoms of a severe acute inflammation of the respiratory mucous membrane. Sneezing, coughing, burning pain in the nose, the flowing of a considerable quantity of fluid discharge, extension of the lesions into the larynx, and finally into the bronchial tubes, producing an asthmatic condition, are the symptoms which are generally regarded as hay-fever symptoms, but which may be produced from any acute inflammatory condition of the upper air-passages accompanied by considerable œdema.

As soon as rhinologists began the use of suprarenal gland in the nose, each must have noticed the peculiar antagonism which this remedy showed to the clinical aspects of hay fever. The shrinking of the vessels, the diminution in size of the erectile tissue, the immediate squeezing out of œdema, the cessation of coryza, and the diminution in size of hypertrophied masses in the nose must have suggested to the nasal surgeon the application of this remedy locally for the treatment of hay fever, and each must have formulated a siege against his old enemy at the very next opportunity. The literature of medicine, however, is peculiarly barren of such mention. My assistant, Dr. A. R. Turner, has been good enough to look up the literature on this subject, and finds since 1894 fifty-eight articles written on hay fever or the use of suprarenal gland; only eight of these articles refer to the use of suprarenal gland in the nose and six mention its use in hay fever. The first inspiration for the use of this seems to have been derived from Dr. Bates, who in a paper read before the Section of Ophthalmology, New York Academy of Medicine, and published in the *New York Medical Journal*, May 16, 1896, says that he considers suprarenal gland to be the ideal hæmostatic, acting by contracting the muscles of the small arteries until the lumen is occluded and a coagulum formed inside the artery. In this article Dr. Bates probably had no reference to the use of suprarenal gland in the nose, but he certainly pointed out its greatest use.

Other authorities follow Dr. Bates in their investigations of the use of suprarenal gland, and Dr. W. Cheatham, on August 15, 1898, says: "Orthoform combined with extract of suprarenal gland has been found useful in two cases of hay fever." Dr. Henry L. Swain, in an article published in the *New York Medical Journal* in August, 1898, concludes that "the œdematous hypertrophy of the middle turbinate, such as appears in sneezing catarrh and in asthma, seems to be very favorably affected by the extract and is certainly shrunken by its frequent use, so that I am very much in hope when the season of hay fever comes around we may find here a more safe and satisfactory adjuvant to our other methods of treatment. In several cases of perennial sneezing catarrh with large white swellings in the middle turbinate, I am certain I got a very considerable amount of comfort, as well as in one patient, who refused operation, a permanent improvement in her condition."

Dr. Solis-Cohen sounds a note of personal experience in favor of suprarenal gland in the *Philadelphia Medical Journal*, 1898, when he says that for twenty years he has suffered from hay fever during the greater part of the months of June and July, even while in the city. Relief was found by taking extract of suprarenal gland *internally*. If coryza or sneezing had begun, it would cease within fifteen minutes.

In another paper the chairman of the Section of Ophthalmology, Otology, Rhinology, and Laryngology of the Texas State Medical Association, 1899, clearly points out that the "extract of suprarenal gland is extremely serviceable in aborting acute catarrh by reducing turgescence of the turbinate tissue and maintaining this condition until the circulation reestablishes itself either naturally or as a result of atropine." He has also found it extremely serviceable in controlling the acute paroxysms of hay fever by nasal applications.

Dr. E. W. Wright, *New York Medical Journal*, 1899, asserts that in the treatment of an attack of hay fever two drugs promised well, orthoform and suprarenal gland.

I myself wrote in the *New York Medical Journal*, 1899, as a result of my clinical experience in the hay-fever season of 1898: "The most important remedy to use internally is one rather new in therapeutics, but its use seems to be established beyond a doubt. I refer to the internal administration of dried suprarenal gland. I can not speak overenthusiastically of the benefit and apparent specific effect of this remedy when administered in full doses. It is in my experience a specific for the symptoms of hay fever and a remedy to safely and surely restore the condition of the nasal erectile tissue. I have never been willing, however, to use it without giving the patient at the same time all the relief to be obtained from local treatment, but it has acted so promptly and so regularly that I have been sorely tempted to abolish local treatment and depend upon it alone. While the use of the remedy is yet in its infancy, it may be premature to sound its praises so highly. The fact remains, however, that it in some way marvelously controls the vasomotor vessels of the nose; that there is a marked reduction in the size of the turbinate bodies with a lessening of irritation and an almost complete cessation of coryza and sneezing; that an improvement in the conjunctival condition can be observed in the patient in less than forty-eight and sometimes twenty-four hours, and that under its continued administration the patient remains in comparative comfort during the remainder of his attack."

Clearly, then, these writers thoroughly believe in the effect of suprarenal extract in the treatment of hay fever, and it becomes our duty to determine the place this drug shall occupy in relation to other remedies now in use. At once a long list of remedies, which have been used both locally in the nose and internally through the stomach, pass in review, conspicuous among which are hydrotherapeutics, digitalis, belladonna, quinine, zinc, arsenic, phosphates, hyoscyamus, valerian, bromides, and opium, together with the local use of the nasal douche, cocaine, silver, phenol-camphor, Clark's solution, and the menthol preparations, all of which are to-day largely used and recommended by various authors. We see at once the great advantage of suprarenal gland. It has a specific effect upon the vessel tone and can be used both locally and internally, as can no other remedy except quinine.

The remedies in the foregoing list which seem to be most generally used and with the greatest success are bromides, iodides, quinine, and cocaine. The bromides and iodides have a good general action, but cause a bad secondary nasopharyngeal irritation. Quinine used in large doses may also produce congestion of the respiratory mucous membrane. Cocaine should not be used at all internally.

The principal remedies which are used in the treatment of hay fever are inferior in their action to the effect produced by suprarenal gland, and this remedy has the enormous advantage of leaving no after-effect. The physiological chemist will tell us that it is useless to administer suprarenal gland internally, because in his opinion the active physiological element of the gland is disintegrated and destroyed by contact with gastric juice. The clinician, however, does not find this statement borne out in the treatment of his cases, because patients with hay fever that are helped by the use of suprarenal gland are helped as readily when the gland is used internally as when it is locally applied to the mucous membrane.

One has but to see the effects of suprarenal gland when given internally in a case of hay fever to believe that the physiological chemist may be wrong in his deduction; for if five grains of saccharated extract of the dried suprarenal gland are given by the stomach every hour, after a few doses distinct local effects can be observed upon the nasal tissue. The overengorged mucous membrane begins to diminish in size, the circulation is restored, the headache will disappear, the hypersensitiveness of the nerves will be diminished, and the resultant sneezing and coryza, which have been so troublesome, will before twenty-four hours nearly disappear and the nose be restored as a breathing organ. It may then be said of suprarenal gland used in the treatment of hay fever that it fulfills the indications for a remedy more nearly than any other single substance. It produces its effect both systemically and locally, it controls the symptoms for a convenient length of time without a very frequent repetition of the dose, and the effects locally are not so harmful as are those from cocaine. It has no dangerous sequelæ and no toxic action, and yet when full doses have been given the effect can be easily recognized by the patients, who experience sometimes a certain degree of vertigo, some nervous excitement, and always an increase in the frequency of the heart's action. The nervous excitement is so markedly less than that produced by cocaine that it can not be termed troublesome or serious; not such an excitation as will lead to the formation of a habit. The only dangers which may result from the use of suprarenal gland seem to be purely theoretical, and so far have never been observed. I can conceive, however, that suprarenal gland used *locally and internally for a long period of time* may result in such a constant diminution of the normal blood supply to the nasal tissues that we may find atrophy resulting from its use.

With the exception, then, of this single danger, the possible production of atrophy from its use, we can see that suprarenal gland is easily the leader of all remedies in the treatment of hay fever, not only because it seems to be devoid of danger, but because it relieves the symptoms so quickly and so generally. If our future experience bears out our knowledge of to-day, it will not be long before this remedy will be recognized as the best of all remedies in the treatment of hay fever, and most beautifully, too, will it bear out the teachings of our "old-school theory" of physiological antagonism of drug to disease.

I would not be understood to say that we must use this remedy alone in our cases. I am only trying to emphasize its value and to place it properly according to its degree of usefulness as compared with other remedies; to mention its advantages, and to notice its almost specific action in this class of cases. Indeed, I believe we shall always use the old favorites, and in my experience digitalis, quinine, cocaine, and Clark's solution served me well before I ever heard of suprarenal extract.

To take up the time of the society with a narration of clinical histories relative to the successes of this remedy in the treatment of hay fever would be to spend the time uselessly, since a reading of case histories does not help in its application to special cases which may come under your observation. We have seen that suprarenal gland is certainly *theoretically* indicated in the treatment of hay fever, and for *clinical proof* of its usefulness I have already read to you certain extracts from the publications of physicians who have found it useful. It remains simply to demonstrate more in detail the class of cases in which it may be used with success, and if possible to determine where it will fail. Naturally, its best result is achieved in the simple cases where the symptoms are principally those of nasal and pharyngeal inflammation, together with conjunctival involvement. In patients in whom asthma occurs later as a complication I find that the asthmatic tendency is certainly diminished by the early and persistent use of this remedy, and frequently the asthma will not develop at all; although the previous experience of the patient would lead him to expect it. In those cases generally complicated with asthma, where the asthma has already developed—in other words, where the case was not seen from the inception of symptoms—the suprarenal gland is not so active in the control of asthmatic symptoms; on the other hand, I have seen a few cases markedly relieved by the use of this remedy even when the asthma was fully developed.

In those cases in which the nasal symptoms are prominent, particularly where there are nasal lesions, and where the development of hay fever is accompanied by much congestion, the benefit is most marked. In nasal cases not accompanied by much congestion the benefit is lessened, and those with perennial nasal attacks are less relieved by the action of the drug than the simple congested cases.

It seems that cases dependent upon a gouty or rheumatic diathesis are helped by the use of suprarenal gland, while, on the other hand, patients are not helped at all where there is a loss of blood-vessel elasticity, due to an atheromatous condition, or in those conditions of blood-vessels resulting from interstitial nephritis. Cases exhibiting some degeneration of the cardiac muscle are also hopeless of any benefit from suprarenal gland.

In hay-fever subjects having neuroses coupled with nasal lesions and in neurasthenic subjects having general vasomotor disturbances the best results have been observed.

Administration.—The administration of the drug is either internally through the stomach or locally through the nasal tissue, or, better, a combination of internal and local treatment. If the drug is used locally, it should be applied either by means of a spray or upon pledgets of cotton saturated with solutions of the drug. The drug solution of six or twelve per cent. is made by shaking up the saccharated dried extract of the suprarenal gland with water, allowing it to stand for an hour or two, removing the clear solution from the top, and discarding the precipitate. This solution may be used in the nose by means of a spray as often as every two hours until the symptoms are controlled, and reapplied whenever symptoms of obstruction, coryza, and sneezing return.

Used internally, it is most useful given in tablet form. Five grains of the saccharated, dried suprarenal gland are administered at first every two hours, day and night, until some giddiness or palpitation is observed, or until the local examination of the nasal membrane shows that the remedy is controlling the vasomotor paralysis. After this has been accomplished, the same dose may be given at longer periods—every three hours, then every six hours, and then twice daily—and the administration of two tablets a day is continued throughout the hay-fever season. If disagreeable symptoms reappear because the dose is too rapidly diminished, the quantity may again be increased, returning to one tablet every two hours until the symptoms are controlled. Used in this way, in favorable cases, patients will remain in comparative comfort during the entire hay-fever period.

In conclusion, it may be said that no other remedy for hay fever is alone so useful as suprarenal gland. It fulfills all the indications better than any other remedy which has yet been introduced. Its effects upon hay-fever symptoms are certainly satisfactory when used alone, and almost irresistible when combined with other recognized forms of treatment. It is almost a specific in this disease, and if we can not truly classify it as a specific, we may safely assert that it is a most valuable and helpful remedy in the treatment of hay fever.

ANOTHER CASE OF TYPHOID INFECTION WITHOUT INTESTINAL LESIONS, WITH POSITIVE WIDAL REACTION.*

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ALTHOUGH several cases of typhoid infection without intestinal lesions have been reported, the number of well-authenticated cases of this kind is small enough to make further reports desirable.

The following case occurred at the City and County Hospital in San Francisco in the medical service of

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* After a paper read before the San Francisco Medical Society, February, 1900.

Cooper Medical College (Dr. Hirschfelder). I am very much indebted to Dr. Hirschfelder for the permission to make use of the clinical history for this publication.

The following is a brief abstract of the clinical history:

W. B., a man, aged twenty-four, was admitted September 4, 1899. He was brought to the hospital in a semiconscious condition. A history could not be obtained either from himself or from the attendant. Some urine was obtained by catheterism. It showed marked diazo reaction. The Widal test was made and clumping obtained at a dilution of 1 to 40. The patient had a temperature of 105° F. The tongue was badly coated. The abdomen was tympanitic. There was well-marked ileo-cæcal gurgling. Percussion showed impaired resonance over the whole left chest. On the right side there were heard a few subcrepitant râles; on the left side, very harsh vesicular murmurs and a few sibilant râles. Heart normal. Spleen enlarged. Liver normal. Posterior thorax, left side, many moist and subcrepitant râles.

The patient was treated with calomel, stimulants, and cold baths, but did not rally, and died on September 11th, at 1.45 A. M. The temperature chart shows a high fever, reaching on the second day 106° F., with daily remissions to about 100° F. The post-mortem was performed during my absence by my former assistant, Dr. Oliver.

Post-mortem Record.—II, 39, W. B., autopsy September 12, 1899, 9.45 A. M.

Anatomical diagnosis: Typhoid infection without intestinal lesions; necrotizing broncho-pneumonia with recent pleuritis. Inflammatory softening of spleen, enlargement and multiple necroses in lymph glands at the base of mesentery; cloudy swelling of kidneys and pancreas; multiple necroses in liver; acute inflammation of appendix; multiple hæmorrhages in mucous membrane of bladder and renal pelves; cyanosis; œdema under the eyes.

Tall, delicately built, fairly well nourished young man. Cyanosis about the ears, neck, shoulders, and inner side of the thighs. No swelling of superficial lymph nodes.

Panniculus well developed, light yellow.

Muscles reddish brown, moist, and well developed.

Peritonæum smooth, moist, glistening. About five cubic centimetres of clear fluid in retrovesical pouch. Omentum somewhat hyperæmic. Appendix long, bound down by adhesions. Serous covering hyperæmic.

Diaphragm: Right side, sixth interspace; left side, seventh rib.

Thorax flat, moderately broad, symmetrical.

Lungs retract little on opening the chest. No adhesions. About fifty cubic centimetres of slightly blood-tinged fluid in both pleural cavities.

Pericardium contains twenty cubic centimetres of slightly bloody, clear fluid; is smooth and glistening.

Heart of normal size, a little soft. Right auricle and ventricle filled with clots and dark blood; valves normal; post-mortem clot in pulmonary artery. Muscle dark brown. Slight yellowish-white thickenings of the intima of both coronary arteries; lumen free. Similar small patches in intima of ascending aorta.

Left lung large. Pleura smooth and glistening. Upper lobe œdematous, lower lobe intensely cyanotic; no consolidation. Bronchial mucous membrane hyperæmic. Bronchi filled with dirty reddish-yellow, foamy fluid.

Right lung same as left, but a few consolidated grayish-brown areas with necrotic centres in its lower lobe. Pleura over them has lost its natural resplendence.

Bile duct patent. About a hundred and fifty cubic centimetres of bile-stained mucus in the stomach.

Spleen: 12 × 7 × 3 centimetres; capsule smooth; cut surface uneven. Splenic substance purple, very soft. Markings indistinct.

Left kidney: 12 × 7 × 3½ centimetres; capsule not adherent. Cortex a little cloudy, of once and a half its normal breadth. Markings indistinct. A few small hæmorrhages in pelvis.

Left adrenal normal.

Right adrenal and kidney same as left.

Liver large, 29 × 21 × 8 centimetres. Cut surface pale straw yellow. Centres of liver lobules light brown; periphery grayish yellow. Capsule smooth.

Bladder contains seventy-five cubic centimetres of turbid milky urine. Mucous membrane filled with hæmorrhages.

Prostate, seminal vesicles, and testicles normal.

Rectum filled with light-yellow, soft fæces. Mucous membrane normal.

Some of the lymph glands at the root of the mesentery are enlarged to the size of large beans; cut surface pale grayish-white.

Intestines: No changes visible with naked eye either in small or large intestine. Peyer's patches normal.

Appendix: Mucous membrane strongly hyperæmic, not swollen. Lumen filled with mucus with slight admixture of pus. Tip very highly inflamed.

Stomach: Mucous membrane thickened; covered with thick, tenacious mucus. Numerous small hæmorrhages in submucosa.

Œsophagus and thyreoid normal.

Larynx: Mucous membrane at the root of the tongue, upper œsophagus, whole interior of larynx, and upper trachea reddish-green and swollen. On posterior inner surface of larynx, in interarytænoid space, two shallow, oval defects. Vocal and false cords swollen, hyperæmic.

Pancreas hard, free from fat, a little cloudy.

Short Abstract of the Microscopic Record.—Lung, lower right lobe: Recent fibrinous pleuritis with accumulations of large degenerating endothelial cells underneath the fibrin. Catarrhal and fibrino-purulent broncho-pneumonic patches with necrotic centres. In and around necroses large heaps of bacteria, which stain well with Gram's method. They are partly minute diplococci, partly large and also very minute bacilli of irregular forms. No tubercle bacilli.

Spleen: Hyperæmia. In venous capillaries many large cells with comparatively small vesicular nuclei. Many of them contain red blood-cells. No bacteria in sections.

Enlarged mesenteric lymph gland: Hyperæmia. Many small necroses; in some of them, cells appearing like epithelioid cells. No bacteria in sections.

Liver: Marked pigmentation of centres of lobules; fatty infiltration in periphery. Many nodular necroses, with fibrin in necrotic areas. No bacteria in sections.

Kidney: Necroses in convoluted tubules and ascending loops of Henle. Cloudy swelling of epithelial cells. No bacteria in sections.

Stomach: Cloudy swelling of glandular epithelium; superficial and deeper necroses (post-mortem?).

Pancreas: Extensive (post-mortem?) necroses. No bacteria in sections.

Appendix: Hyperæmia. Collections of lymphocytes around blood-vessels. Hyperæmia and enlargement of lymphatic follicles. Mucous membrane much atrophied, in spots reduced to a thin layer of connective tissue without glands. Tip of appendix, same changes. Some of the blood-vessels filled with bacilli, which stain with Gram's method; otherwise, no bacteria in sections. Prostate, bladder, and gall bladder normal.

Bacteriological Examination (*Smears on Slanting Agar*).—Spleen, about ten colonies of colon bacilli. Very many small grayish-white, delicate colonies of short motile rods, some threads, no spores, no Gram.

They *do not ferment* grape sugar.

They *do not produce indol* in Dunham's peptone solution.

Milk-sugar litmus medium * turns slightly acid; after about a week in incubator, reaction again neutral.

Same changes in controls with recognized typhoid bacilli.

They do not liquefy gelatin.

The bacilli possess *many flagella,* some ten and more, with typical peritrichal arrangement (Loeffler's method).

Petruschky's litmus whey is acidified, and after a week fifteen drops of a one tenth normal NaOH solution is necessary to neutralize ten cubic centimetres. (The drops were between twenty-one and twenty-two to the cubic centimetre, therefore acidity about three fourths per cent. normal NaOH.)

The bacilli are *agglutinated* by the blood serum of a case of typhoid fever at a dilution of 1 to 40 in three hours.

Kidney: About fifty colonies of colon bacilli.

Lungs: Three colonies of colon bacilli. About a hundred colonies of short streptococci (+ Gram).

Liver: Many colonies of colon bacilli. A few delicate colonies resembling those obtained from spleen.

When we look over the literature on the subject of typhoid infections without intestinal lesions we find that the idea that in exceptional cases of typhoid fever intestinal lesions may be absent is not at all a new one. It was advanced by some authors even before the typhoid-fever bacilli were discovered—that is, before it was really possible to establish the correctness of such observations beyond doubt, since at that time the anatomical lesions in the intestines formed the characteristic feature of the disease.

The first to call attention to the fact that there are sometimes cases with all clinical symptoms of typhoid fever and yet without intestinal lesions at autopsy seems to have been Andral. Later a number of such cases were published by Brunschwig, Litten, Moore, Church, Coupland, Philips, Goodall (1), and others; but in the absence of the knowledge of the true cause of the disease, it was naturally impossible for them to make it more than probable that such cases were indeed typhoid infections. Later, in the beginning of the bacteriological era, after the Eberth-Gaffky bacillus had been identified as the cause of typhoid fever, several more cases (Banti, Thue, Karlinsky (1)) were published, which seemed to confirm the assertions of former writers in this regard; but, since at that time the difficulty of identifying typhoid-fever bacilli as such had as yet not been fully recognized, the bacteriological reports are so incomplete that in the light of more modern knowledge these cases can not be regarded as furnishing conclusive evidence. I have not been able to study the original articles or extensive reviews of the similar cases reported by Vaillard (2) and Chantemesse (3), but they also seem to belong to this series.

The majority of authors who have written on the subject agree that the first really convincing observation of this kind was made by du Cazal (4) in 1893.

Another case was reported by Kühnau (15) in 1896. The year 1897 seems to have been especially productive of these abnormities. During its course there appeared publications on this subject by Beatty (5), Chiari and Kraus (6) (five cases of which, however (3), only are substantiated by bacteriological examination), Cheadle (7), Flexner and Harris (8), Guinon and Meunier (9) (generalized miliary tuberculosis with intestinal ulcers, which by the authors are regarded as tuberculous ones), and Pick (10)—in all, eight cases. In 1898 there is one case by Nicholls and Keenan, but it hardly seems to belong to this category, because there was a slight swelling of Peyer's patches and typhoid bacilli were found in them. In 1899 Lartigau alone (12, 13) said he had seen three cases.

Even among these last thirteen cases there are several in which the bacteriological evidence can be disputed (see Fischer (14) in reference to cases published by Chiari and Kraus (6)). In others (Beatty (5) and Cheadle (7), for instance, we have nothing but the mere statement of the presence of the bacilli or the reference to some authorities who are said to have identified the bacilli found. So far as I have been able to learn, the only cases in which the means now at our disposal for a differential diagnosis between typhoid bacilli and allied forms are nearly exhausted, are the one case published by Flexner and Harris (8), the three cases of Lartigau (13), and the present case. Even in them the one test that at present seems to have the highest scientific value, the study of the behavior of the bacilli in the blood serum of animals highly immunized against typhoid-fever bacilli, is missing, which defect is readily explained by the great difficulty of obtaining such serum. In spite of this shortcoming, however, it seems to me, we are justified in concluding from them that undoubtedly, though apparently very rarely, there occur cases of typhoid infections without intestinal lesions at autopsy.

In all former reports it seems to have been taken for granted that the occurrence of such cases proves that there are forms of typhoid infection with unusual primary localization of the virus, forms in which somehow or other the intestinal tract escapes their pathogenic activity. Such may be true for some of the cases reported. I am willing to admit that the respiratory tract or the bile ducts and gall bladder, in which latter location the bacilli have been so frequently found in recent years, may in exceptional cases serve as a means of entrance for the pathogenic microbes, but I believe that in a considerable proportion of the cases the bacilli entered the system in the ordinary manner by way of the intestinal mucous membrane. The enlargement of the mesenteric lymph glands that was found in several of them (du Cazal (4), Beatty (5), Pick (10), Kühnau (15), Lartigau (12), and my own) is very suggestive in this regard, and the absence of anatomical changes in the lymphatic apparatus of the intestines does not even prove that, if really the organisms came from the intestines, they traversed the mucous membrane of the latter without producing any lesions in it. There may have been swellings which had disappeared at the time of the autopsy. So far as I understand, it is a commonly accepted doctrine that the swellings of Peyer's patches or of the solitary follicles can subside and disappear without giving rise to ulcerations or scar formation. I think it all the more probable that in several of these cases the absence of intestinal lesions at autopsy is not proof of their not having been there before, because the symptoms given in several of the clinical histories of such cases do not only resemble very closely the usual clinical picture of typhoid fever in a general way, but in some of them we even hear of typical pea-soup stools. The appearance of these proves to my mind that there was at least some irritation of the intestinal wall. It is also notable that in several of these cases death took place very late in the course of the disease (fifty-eighth day in Kühnau's (15) case). There was therefore ample time for a *restitutio ad integrum* before the post-mortem took place. But even in those cases that ended in death early it is not at all improbable that there were relatively insignificant intestinal changes, which had disappeared at the time of the post-mortem. In that regard it is interesting to see that most cases seem to have been light ones, in so far that the cause of death in them was not the typhoid fever, but some complication (du Cazal (4), double pneumonia; Guinon and Meunier (9), generalized acute miliary tuberculosis; Flexner and Harris (8), pulmonary gangrene, thrombosis of main branch of pulmonary artery; Lartigau (13) (second case), pyocyaneus broncho-pneumonia; Lartigau (13) (third case), multiple infection with pneumococci (heart, blood, and spleen) and streptococci (uterus); my case, necrotizing broncho-pneumonia). I am sure I could add to this list if only I had opportunity of consulting all the papers in the original. I therefore believe that at least some of these cases prove merely that the intestinal changes may sometimes disappear before the bacilli leave the body, which in itself is nothing new, since we have the best reason to believe that sometimes, even long after recovery (weeks and even months), the typhoid-fever bacilli remain alive and active in certain parts of the body, especially the bones, and also the gall bladder. Such a view makes it also more readily understood why in some cases the bacilli were absent from their usual localization in the spleen; why Pick (10), for instance, was unable to obtain cultures from this organ, but did succeed in finding them in the gall bladder.

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* A medium containing milk sugar, two per cent.; peptone, one per cent.; salt, one half per cent. It was first recommended to me by Dr. Reichenbach, assistant at the Hygienic Laboratory, Göttingen, Germany.

I should not like to be understood as offering the remarks just made as an explanation of all such cases; in some, as I stated before, the absence of intestinal lesions may be due to an abnormal mode of infection.

In seven of the last reported fourteen cases (my own included) a positive Widal reaction was obtained during the lifetime of the patient, and in some of them bacteriological examination has suggested itself by the thought that it might give an explanation for the presence of the reaction, although there were no typical anatomical lesions. In fact, cases like these seem to corroborate the reliability of the test all the more strongly because if, on its account, we err in making the diagnosis of an ordinary case of typhoid fever, we afterward have the satisfaction of finding that the test was right in so far as it demonstrated the presence of an infection with typhoid-fever bacilli.

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CYSTITIS.*

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IT is an event of great rarity for a perfectly normal bladder to become the seat of inflammation, while, on the other hand, any non-inflammatory affection of this organ is most apt to be complicated, sooner or later, by the element of germ infection with inflammation ensuing.

There are numerous conditions which may act as predisposing causes to cystitis, although they may exist indefinitely without actually causing inflammation.

The one most frequently met with in practice is the retention of residual urine, occurring in cases of stricture and enlarged prostate, or resulting from paralysis of the nerve supply to the bladder, depending upon a fractured spine or a myelitis.

Retention of urine in itself can not cause inflammation so long as the bladder remains free from infection with micro-organisms, but stagnant urine affords an excellent culture medium for the growth and development of germs which may be introduced into the bladder, and the retention of urine, if long continued, impairs the vitality of the mucous membrane by keeping it congested.

Chronic congestion of the mucous membrane may occur without the presence of retained urine, and may be occasioned by calculus, some forms of prostatic enlargement, and in women by pregnancy and menstruation.

The normal epithelium of the bladder offers a barrier to the penetration of micro-organisms so long as its cells are intact, but if the bladder walls are congested for some time the superficial cells become loosened and desquamated and the softer cells underneath are exposed, allowing the entrance of germs. The hyperæmia also causes the small blood-vessels to rupture on account of the increased vascular pressure.

Exposure to cold is often considered an exciting cause of cystitis, but it can only act in an indirect way by lowering the vitality of the tissues, so that germ infection may the more easily take place.

The various predisposing causes above mentioned can not in themselves excite inflammation. They operate by preventing the bladder from being evacuated and allowing residual urine to accumulate and form a favorable culture medium for germs, or by producing congestion of the mucous membrane, which lowers its vitality and causes desquamation of its protective cells, thus opening up avenues for infection.

The exciting cause of an attack of cystitis is invariably micro-organisms. Normal urine is an aseptic fluid, free from germs, and can be injected into the peritoneal cavity without causing suppuration. In every case of cystitis various forms of cocci and bacteria are always present. Many of these organisms are incapable of causing cystitis if they find their way into a normal bladder which can be completely emptied of its urine, because they are voided along with the urine without causing any injury to the bladder.

On the other hand, the *Staphylococcus pyogenes*, the *Urobacillus liquefaciens septicus*, and virulent cultures of the *Bacillus coli* possess the power of breaking up urea and forming ammonia, and on this account they are able in themselves, without the aid of a favorable predisposing cause, to excite cystitis.

MICRO-ORGANISMS FOUND IN CYSTITIS.—C. Mansell Moullin * examined the urine from thirty cases of suppurative cystitis, most of which were in old men with enlarged prostates. Tuberculous and gonorrhœal cystitis were excluded and the following results were obtained:

The reaction was acid or neutral in twenty-four and alkaline in six cases. Micro-organisms were present in abundance in all of them. The *Bacillus coli* was present in twenty-one of the acid urines and in four of the alkaline cases. *Streptococcus pyogenes* occurred in four acid and in three alkaline cases. The *Urobacillus liquefaciens* was present in five of the alkaline cases. In addition, a staphylococcus was present in eight and a diplococcus in two. These examinations show that the *Bacillus coli* is the organism most frequently present in cystitis when the urine is acid, and the *Urobacillus liquefaciens septicus* when it is alkaline.

Bacillus coli.—This is a short, round bacillus with rounded ends, which is found normally in the intestinal canal. The virulence of its cultures depends upon the source from which they are taken, a growth from the contents of the healthy intestine having less virulence than one taken from a case of infantile diarrhœa, while a culture from choleraic discharges is virulent in the highest degree.

Unlike other micro-organisms, the *Bacillus coli* has but little effect in causing the urine to become alkaline through decomposition of its urea, and the urine retains the acid reaction for a considerable length of time.

Although the *Bacillus coli* is a harmless saprophyte in the intestine, it has the effect, when injected into the tissues, of causing an abscess or of inducing toxæmia or general septicæmia.

The *Urobacillus liquefaciens septicus* is chiefly of interest from its power of decomposing urea and causing the urine to become alkaline within a few hours.

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* Read before the Kings County Medical Association, December 12, 1899.

* *Inflammation of the Bladder and Urinary Fever*, Blakiston, 1898, to which the author is indebted for many facts used in the preparation of this article.

Cultures of the *Bacillus coli*, if injected into the bladder, often fail to produce cystitis unless a predisposing cause, such as retention of urine or congestion, is present. If, however, the urobacillus gains admission to the bladder, cystitis almost invariably follows, on account of the ammonia which is set free from the decomposed urea and which acts as an exciting cause for the inflammation.

The *Streptococcus pyogenes* and *Staphylococcus pyogenes aureus* are both capable of inducing septicæmia if they gain entrance into the blood circulation, and locally they attack the bladder walls, causing diffuse inflammation with suppuration.

The streptococcus does not decompose urea, and when it is found in alkaline urine the decomposition has been effected through the agency of another micro-organism, which is often the urobacillus.

Experimental and clinical evidence serves to show that while all cases of ordinary suppurative cystitis are dependent upon these or similar organisms, inflammation of the bladder can not be induced by their mere introduction into it, so long as the urine can be completely evacuated and its walls are in a healthy condition.

The *Urobacillus liquefaciens* alone is capable of exciting cystitis in a normal bladder through its property of decomposing urea.

If, however, there is residual urine retained in the bladder behind a stricture or enlarged prostate, or if the bladder wall is congested and eroded from the irritation of a calculus or the administration of cantharides, cystitis will surely result from the introduction of the other forms of micro-organisms.

AVENUES THROUGH WHICH MICRO-ORGANISMS REACH THE BLADDER.—Germs may enter the bladder by the following routes:

I. Through the urethra.

II. They may descend with the urine from the kidneys.

III. They may pass through the blood circulation direct to the bladder.

IV. They may pass through the lymphatics from adjacent organs.

I. *Infection through the Urethra.*—As already stated, the *Bacillus coli* is responsible for the larger number of cases of cystitis. Its chief habitat is the intestine, where it is always present, although varying greatly in virulence. It is also usually to be found, but mixed with other organisms, upon the glans penis, under the prepuce, and in the fossa navicularis, and in women it exists in the meatus urinarius and the folds of the vulva.

The deep urethra in the male probably does not afford a resting place for germs while it is healthy. When, however, it is altered by disease, either stricture or enlargement of the prostate, the dilated pouch, containing stagnant urine and mucus, affords a favorable hibernating place for bacteria.

Cystitis does not occur in men with healthy urethras, except as a result of instrumentation, but in cases of enlarged prostate it is of common occurrence even when no instruments have been used. In most instances where the bladder is infected from the urethra, a catheter or sound is the means by which the germs are introduced.

Although the instrument may have been sterile before introduction, it may have been infected by brushing against the patient's clothing, or acquired germs from contact with the glans penis or meatus, or it may have carried germs along from a pouch behind a stricture or enlarged prostate in the urethra itself.

But unless the predisposing causes of congestion of the bladder wall or residual urine are present, the micro-organisms will usually be swept out of the bladder with the first act of urination without causing any damage.

II. *Infection of the Bladder with Bacteria which descend in the Urine from the Kidneys.*—The *Bacillus coli*, which exists in profusion in the intestinal canal, readily makes its way through the wall of the intestine into the blood circulation, and notably so if diarrhœa or intestinal disease is present.

After gaining the blood circulation the bacilli are eliminated by the kidneys, and passing out with the urine gain entrance into the bladder, and, under the existence of favoring conditions, such as congestion or residual urine, cystitis is excited.

III. *Infection of the Bladder through the Blood Current.*—Infective emboli occurring in the course of some general disease may be carried through the capillaries, and local foci of disease in the bladder may be originated through their agency.

This cause of infection, however, seldom occurs except as a result of tuberculosis.

IV. *Micro-organisms formed in an Adjacent Organ may be carried to the Bladder through the Channel of the Lymphatic Vessels.*—This form of infection has been proved experimentally and will serve to explain the occurrence of cystitis in women who are the subjects of salpingitis and endometritis, and in whom the micro-organisms probably pass from the ovaries or uterus to the bladder through the lymphatics.

CLASSIFICATION OF VARIOUS FORMS OF CYSTITIS.—Cystitis begins acutely and frequently becomes chronic. Various attempts to group the varieties from an ætiological or anatomical standpoint have been made, but for practical uses a division into *simple, suppurative,* and *specific* cystitis serves the purpose.

Under the term simple cystitis is understood the inflammation of the bladder which is not caused by germ infection, but which results from a mechanical cause, such as the irritation from a calculus or crystals in the urine, or from a chemical irritation caused by cantharides. Simple cystitis exists as a theoretical condition only, for, as a matter of fact, the complication of *germ infection* occurs in every case, and in a few hours the bladder becomes infected with micro-organisms and the *simple inflammation* is converted into suppurative cystitis.

PATHOLOGICAL CHANGES IN THE BLADDER.

Location.—The disease process is most marked in the region of the trigone, and particularly so around the ureters and the urethral orifice. The fundus is usually nearly or quite normal.

The mucous membrane is the part usually affected, but the inflammation may attack the deeper structures, and the muscular, subserous, and even the serous coats may be attacked.

In *cystitis* the cystoscope affords a means of studying the changes in the mucous membrane of the bladder. In the acute stage its color is found to be brilliant scarlet, with branching lines marking the course of the distended vessels, which bleed readily. The surface of the mucous membrane has lost its polish, is ragged and velvety, and has flakes of lymph adhering to it. In severe cases the epithelium is detached, leaving *erosions.*

In very septic cases portions of the mucous membrane slough away and hang from the walls in shreds, and minute abscesses may form in the submucous coat or among the muscular layers. Micro-organisms are invariably present, the urine is filled with them, and they lie on the surface of and between the epithelial cells.

The pathological changes in chronic cystitis resemble those of the acute form, but are more marked. The erosions are deeper, sometimes forming actual ulcers. The surface of the mucous membrane is black or slate-colored from the escape of blood pigment into the tissues through small capillary ruptures.

In the early stages the muscular coat may undergo a true hypertrophy of the fibres, but, as a rule, the prolonged inflammation and the vascular degeneration lead in time to a condition of fibroid induration and sclerosis of the bladder wall.

The walls are thicker and denser than normal, and their elasticity is entirely lost. As a result of these conditions the cavity of the bladder often becomes so small and contracted that it can only hold a few ounces. The bladder wall on contracting falls into folds with spaces between them, from which it is difficult to empty the urine even with a catheter.

In time the spaces become stretched, forming sac-like dilatations, which may be as large as the bladder itself.

These sacs are only covered by serous membrane and have no muscular fibres, so that they can not empty themselves of their contained urine, and, filled with stagnant, decomposing urine, they become a favorite seat for stone formation.

On the other hand, the bladder walls, instead of being hard and fibrous around a small contracted cavity, may become thin and flaccid, and the cavity may be distended to a capacity of a quart or more.

Membranous Cystitis.—As a result of intense septic infection of the bladder, combined with pressure on its blood-vessels sufficient to shut off the circulation and cause gangrene, a false membrane may form within the bladder which is thrown off as a cast of its walls.

The microscope shows these coats to be composed of epithelial cells, lymph, urinary salts, and micro-organisms entangled together.

The slough may make its exit through the urethra or the whole thickness of the bladder wall may slough into the cavity of the abdomen.

(*To be concluded.*)

Therapeutical Notes.

Senecio in Dysmenorrhœa.—The *Gazette hebdomadaire de médecine et de chirurgie* for April 5th gives the following as one of Dr. J. Prévost's formulæ:

℞ American fluid extract of senecio	4	parts;
Garus's elixir	156	"

M. Three or four tablespoonfuls to be taken daily.

Brocq's Ointment for Obstinate Psoriasis.—The formula is given as follows in the *Gazzetta degli ospedali e delle cliniche* for March 6th:

℞ Salicylic acid	3	parts;
Ichthyol, Tar, } each	10	"
Pyrogallic acid	6	"
Lanolin or vaseline	100	"

M.

The Hypodermic Treatment of Tetanus.—According to the *Indépendance médicale* for March 7th, the following formula has been highly extolled in tetanus and to combat prolonged and persistent attacks of epilepsy:

℞ Monobromide of camphor	45	grains;
Sterilized oil	900	minims.

M. From thirty to forty-five drops for an injection.

Picric Acid in the Topical Treatment of Zoster.—According to the *Presse médicale* for December 16th, Dr. Brocard has used the following formula in a case in which the vesicular element was not very marked:

℞ Picric acid	3	parts;
Cannabin	1	part;
Alcohol	8	parts;
Ether	12	"
Flexible collodion	16	"

M.

Amyl Valerianate for Biliary Lithiasis.—Dr. Pouchet (*Revue internationale de médecine et de chirurgie,* January 10th; *Lyon médical,* February 11th) reports excellent results from the use of this emulsion:

℞ Amyl valerianate	9	grains;
Oil of sweet almonds	2	drachms;
Powdered gum arabic	75	grains;
Syrup of quinces	7½	drachms;
Distilled water	15	"

M. This amount to be taken once a day, in half a glass of water or milk.

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Edited by FRANK P. FOSTER, M. D.

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THE MICRO-ORGANISM OF MALIGNANT GROWTHS.

PROFESSOR MAX SCHÜLLER, of the University of Berlin, is quite sure that he has discovered the micro-organism that gives rise to cancer, and he describes it in a preliminary communication published in No. 14 of the current volume of the *Centralblatt für Bakteriologie, Parasitenkunde und Infectionskrankheiten.* It appears to be an animal organism, a protozoon, and to be the same for sarcoma as for carcinoma—at least, no mark of distinction has yet been established between the specimens found in sarcomata and those found in carcinomata. It is a roundish or oval vesicular body, only occasionally irregular in form, three times as large as a red blood corpuscle or even larger when mature, of a golden-yellow or brownish color, and highly refractive of light. It consists of a comparatively firm, resisting, highly refractive outer investment, or capsule, of a clear and brilliant color, with the contents for the most part of a duller appearance. When it is so focused as to appear flat, a sort of stratification is sometimes plainly to be seen, and always a radiated striation, and the internal mass occasionally puts forth short saclike shoots toward the radiating striæ of the capsule, which is otherwise most sharply separated from the inner mass. With a different focusing the organism appears more globular, and fine openings, or pores, can be made out without difficulty, and they seem to be situated on minute elevations.

The author has repeatedly seen the living organism undergo changes of shape, but never move about; in dead specimens the inner mass seems to shrink away from the capsule. To preserve it alive, it should be kept away from the light and at a temperature not lower than that natural to the human body. In a drop of living culture it puts forth flagella, but when it is dead these disappear, being perhaps retracted. They are apparently offshoots from the central substance which are projected through the pores of the capsule.

Professor Schüller has practised inoculation experiments on animals, but time enough has not yet elapsed for any results to be observed; moreover, as he intimates, their failure to give rise to malignant growths would not disprove the ætiological relation of the micro-organism to such neoplasms, for parasites that flourish on one host are often quite incapable of surviving on a different one. Schüller's observations are certainly noteworthy, and, if it turns out that he is correct in his conviction, the first step will have been taken in the task of suppressing cancerous growths.

THE STUDY OF TICKS AND THE DISEASES CAUSED BY THEM.

THE *rôle* of the mosquito as the transmitter of the malarial parasite has of late directed attention once again to the possible relation between various endemic diseases and certain forms of parasites, more especially the ticks, or *ixodes*, of the order of *Acarideæ*, of which the *Acarus scabiei* is perhaps the most widely known example. That the bites of various insects of this order are a source of great trouble and discomfort is, of course, well known; but, while in certain districts public opinion, with that empirical instinct which is often too contemptuously disregarded by the scientific because no connection of cause is obvious, has linked certain of these parasites with febrile diseases—*e. g.*, the cattle tick with the red-water fever of Texas—only recently has scientific investigation in anything like a general manner sought to connect the two. The cue for this line of research might have been more widely taken from the investigations of Manson in China, who, so far back as the seventies, showed the mosquito to be the transmitter of *Filaria sanguinis* to man.

Recently, however, we have seen increasing and widespread attention devoted to the part played, not only by mosquitoes, but also by flies, bedbugs, fleas, etc., in the propagation of febrile diseases; and the various forms of lice or ticks open a profitable field for future work, much of which, inasmuch as diseases suspected to be caused by their agency are endemic in certain districts, can be advantageously pursued by medical men of a scientific bent practising in those districts.

A paper on Ticks and Tick Fevers, by Dr. L. W. Sambon, lecturer to the London School of Tropical Medicine, in the *Journal of Tropical Medicine* for April, gives an interesting *résumé* of what is already known or reasonably conjectured on this subject. The life history of the ticks may be briefly summed up as follows: On emerging from the eggshells in the larval stage, they climb the stems of shrubs, to which they attach themselves by their hindmost pair of legs, while with the foremost pair outstretched they wait till they can transfer themselves to some passing animal forming a suitable host. Into this animal they insert their rostrum, or beak, to absorb nourishment from its blood. In a day or two they fall off and undergo metamorphosis into the pupal stage. They then reattach themselves to some host as before, and, nourishing themselves from its blood, fall off again to develop into the adult stage. In this stage conjugation between male and female takes place, the male subsequently dying, while the impregnated female attaches herself to a host to absorb nutriment for her twelve to twenty thousand eggs. During their parasitic existence the ticks convey the various hæmatozoa, absorbed in a previous stage from an infected animal, or possibly even transmitted from the mother through the ovum to the larvæ, to their host; and thus the disease is propagated. The researches of Smith and Kilborne on Texas fever clearly showed that the cattle tick, *Ixodes bovis, Boophilus bovis, Ixodes sanguineus, Ixodes plumbeus, Ixodes Dugesi*, or *Rhipicephalus sanguineus*, as it has been variously named in divers places and by sundry investigators, is the medium of infection of Texas fever in cattle (as had long been held by Texan cattle farmers before the opinion received scientific confirmation) by conveying from one beast to another the *Pyrosoma bigeminum*, a hæmatozoal parasite of the protozoan group to which belongs also the malarial amœba. The black-water fever in man, commonly considered a severe form of malarial fever, is not improbably a disorder of a similar kind quite distinct altogether from malarial disease, and Sambon considers its causative agency probably analogous to, if not identical with, that which causes redwater fever in cattle. In the old-time attacks of "yellow fever" occurring on the west coast of Africa, which most authorities now agree in thinking not to have been yellow fever at all, but a severe form of blackwater fever, we find from the writings of Bryson and Horton that the distribution of the disease was most capricious, and, though they do not seem to have suspected the nature of the connection, both authors point out that the cases commonly occurred among those handling untanned cow hides. Other seeming connections between ticks and febrile disease are those between *Ixodes reduvius* and the so-called "louping ill" of sheep; *Argas persicus* and the disease of miana in the north of Persia; and *Ornithorodos moubata* and the disease of tete on the Zambesi in Portuguese East Africa. In Central and South America various ticks—called generically *nigna* in Carthagena, *pique* in Peru, and *garrapatos* in Mexico—cause much trouble, and among them are specially mentioned the *Argas talaje*, in Central America and Mexico, and *Argas turicata*, in the latter country. Both of these attack man as well as other animals, so that modern microscopy and other scientific means may probably serve to connect in the near future this class of insects with various endemic febrile diseases of local occurrence. It would be well for all practitioners proceeding to such countries to make themselves practically familiar with the methods of blood examination now employed in malarial disease, not only as against that disease itself, but in view of those methods enabling them to further add to medical science by the investigation of such local endemic diseases as may suggest themselves as being possibly transmitted through the agency of *acari*.

THE NEW YORK PASTEUR INSTITUTE.

THE director of the institute, Dr. Paul Gibier, has recently issued a bulletin in which, after a cursory sketch of the history of the institute, he gives its statistics for the first ten years of its operation, also a curious chronicle, consisting of extracts from various newspapers, of the eighteen cases of rabies that have been reported from different parts of the country since the publication of his preceding document of the same character. He then gives brief histories of seven fatal cases that came under his own observation during the year 1899.

Of these seven persons, three were treated with the Pasteur inoculations. One of them, a child three years old, had been bitten on the face. He received the first inoculation on the day after the bite, but he could not be kept quiet during his stay in New York, and Dr. Gibier suggests that the child's exertion and excitement may explain the fatal issue. It seems that quietude and a strictly hygienic course of life during the treatment are deemed important in their bearing upon its efficiency, and to insure these accessories a branch of the institute has been established in Suffern. Another of the seven did not come under observation until eighty-five days after the bite, and he died in three days after the close of the treatment. The third case was that of a man who applied on the day after he had been bitten, but died in five days after the conclusion of the treatment. Concerning this case Dr. Gibier remarks that it was one of the very rare ones in which, for reasons which he can not explain, the Pasteur treatment has proved futile. It is worthy of note that this man's wife, bitten by the same dog, was subjected to the treatment and is still living; she was bitten on September 12th.

Dr. Gibier makes some very sensible remarks as to what should be done with an animal suspected to have rabies. Whenever it can be confined and kept under observation with perfect safety, he says, it should be kept until it dies or recovers, and full notes of its behavior taken. If keeping the animal is attended with unavoidable danger, it should be killed. Then it should be decapitated and a small piece of the medulla oblongata cut off. This piece should be put into a small wide-mouthed bottle containing a mixture of equal parts of glycerin and water sterilized by boiling, and the bottle sealed. If a person bitten by the rabid animal has been sent to the institute, the notes taken of the animal's subsequent history and, in the event of its death, the piece of its medulla should also be furnished. In addition, the animal's stomach should be opened and examined as to the presence of food or of foreign bodies in it, and the notes of this examination sent to the institute.

THE JACOBI *FESTSCHRIFT*.

It is but a few years ago that a great dinner was given at Delmonico's in honor of the late Dr. Oliver Wendell Holmes's birthday. The one given last Saturday night in observance of Dr. Abraham Jacobi's seventieth birthday is thought to have exceeded even the Holmes dinner in the number of participants. And now comes the publication of a *Festschrift*—we are glad the committee stuck to that name, for there is no satisfactory English equivalent—to crown the public recognition of Dr. Jacobi's supereminent worth as a physician and as a man. The volume is a handsome octavo of nearly five hundred pages, got up in the usual admirable style of the Knickerbocker Press. Besides the preface, which gives a graphic sketch of Dr. Jacobi's career, it contains monographs by fifty-five well-known authors, printed in English, German, and French. Facing the title-page there is an exceptionally good portrait of Dr. Jacobi. The *Festschrift* custom is a most graceful one, and we hope that within a few years it will be established in the United States. It could not have been inaugurated under more favorable auspices than those connected with the celebration of Dr. Jacobi's seventieth birthday.

THE INTERNATIONAL DERMATOLOGICAL CONGRESS.

At the recent meeting of the American Dermatological Association, held in Washington in affiliation with the Congress of American Physicians and Surgeons, Dr. J. Nevins Hyde, of Chicago, Dr. Henry W. Stelwagon, of Philadelphia, and Dr. T. Caspar Gilchrist, of Baltimore, were appointed a committee to represent the association at the International Dermatological Congress to be held in Paris early in August, and to offer to the members of that body, in the name of the association, a warm invitation to hold the next international meeting in New York. The committee was further instructed to present the name of Dr. James C. White, of Boston, the association's first president and an honorary member of the French and Italian Dermatological Societies, for the presidency of the congress in the event of a favorable response, and urge his election. We hope that the committee will succeed in inducing the congress to elect Dr. White and to hold its next meeting in New York.

THE TREATMENT OF CARBUNCLE WITH SCLAVO'S ANTANTHRACIC SERUM.

The *Centralblatt für Chirurgie* for April 14th gives an abstract of a report by Dr. M. Asternio, published in the *Gazzetta medica di Torino* of unspecified date, of four cases of anthrax infection from cattle that came simultaneously under his care. He treated them all with Sclavo's antanthracic serum. One of them, a woman with a large carbuncle on the cheek, died during the night following the inauguration of the treatment. In the three other cases, all of which were severe and one apparently desperate, a rapid cure followed the use of the serum. It seems not incredible that this serious infection may be added to those that antitoxine treatment is destined to master.

A DIABETOGENOUS SUBSTANCE.

From some experiments reported by M. Lépine and M. Boulud (*Gazette hebdomadaire de médecine et de chirurgie*, March 28th) to the National Medical Society of Lyons it would seem that the urine of diabetics contains a substance of a diabetogenous character. They extracted the substance from the urine of a diabetic and injected it subcutaneously into guinea-pigs and dogs. The result was an intense glycosuria.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported for the two weeks ending May 5, 1900:

DISEASES.	Week ending Apr. 28.		Week ending May 5.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	10	8	13	2
Scarlet fever	165	13	152	13
Cerebro-spinal meningitis	0	3	0	4
Measles	714	27	637	32
Diphtheria	224	43	233	30
Laryngeal diphtheria (croup)	10	4	8	6
Tuberculosis	202	204	214	164
Chicken-pox	0	0	26	0
Small-pox	2	0	2	0

The American Therapeutic Society was organized in Washington on May 1st. Dr. Horatio C. Wood, of Philadelphia, was elected president. The new society will become affiliated with the Congress of American Physicians and Surgeons, which meets in Washington every three years. The meetings of the American Therapeutic Society will be held annually, the next meeting being in Washington on May 7, 1901.

The Plague in Hong Kong.—As we are about going to press the news comes that the Oriental plague has made its appearance in Hong Kong.

The Richmond Academy of Medicine and Surgery.—At the regular meeting, on Tuesday, May 8th, the order for the evening was a paper entitled Cerebral Gout, by Dr. A. G. Brown, Jr.

The Buffalo Academy of Medicine.—At the last regular meeting of the Section in Medicine, on Tuesday evening, the 8th inst., the following papers were presented for discussion: Typhlitis and Scolecitis, by Dr.

A. L. Benedict; Dress Reform, by Madame Mankell, and A Report of a Case of Influenza in a Child, with Four Distinct Pneumonic Attacks—Otitis Media Purulenta, Colitis, Marasmus, and Recovery, by Dr. Julius Ullman.

Changes of Address.—Dr. Burnett C. Collins, to No. 1163 Dean Street, Brooklyn; Dr. Stewart Lewis, to No. 13 Cambridge Place, Brooklyn.

Marine-Hospital Service Health Reports.—The following cases of small-pox, yellow fever, cholera, and plague were reported to the surgeon-general during the week ending May 5, 1900:

Small-pox—United States.

Mobile, Ala.	Apr. 14–28	14 cases.	
Washington, D. C	Apr. 21–28	1 case.	
Chicago, Ill.	Apr. 21–28	11 cases.	
Evansville, Ind.	Apr. 21–28	2 "	
Indianapolis, Ind.	Apr. 21–28	7 "	
Wichita, Kan.	Apr. 21–28	8 "	
Covington, Ky.	Apr. 21–28	6 "	
Lexington, Ky	Apr. 21–28	1 case.	
New Orleans, La.	Apr. 21–28	43 cases,	25 deaths.
Boston, Mass.	Apr. 21–28	1 case.	
Detroit, Mich.	Apr. 21–28	1 "	
Grand Rapids, Mich	Apr. 7–28	1 "	1 death.
Minneapolis, Minn.	Apr. 14–28	47 cases,	1 "
New York, N. Y.	Apr. 21–28	2 "	
Cleveland, Ohio	Apr. 21–28	12 "	
Pittsburgh, Pa.	Apr. 21–28	1 case.	
Salt Lake City, Utah	Apr. 21–28	1 "	

Small-pox—Foreign.

Prague, Austria.	Apr. 1–7	2 cases.	
Ghent, Belgium	Apr. 7–14	2 "	
Rio de Janeiro, Brazil	Mar. 2–23		42 deaths.
Hongkong, China	Mar. 10–31	10 "	5 "
Liverpool, England	Apr. 7–14	9 "	2 "
London, England	Apr. 7–14		3 "
Gibraltar	Apr. 8–15	4 "	
Athens, Greece	Apr. 7–14	5 "	1 death.
Bombay, India	Mar. 27–Apr. 3		120 deaths.
Calcutta, India	Mar. 3–10		19 "
Kurrachee, India	Mar. 24–Apr. 1	27 "	6 "
Nagasaki, Japan	Mar. 21–31	1 case.	
Tamsui, Japan	Feb. 22–28	87 cases.	
Chihuahua, Mexico	Apr. 14–21		2 "
Guadalajara, Mexico	Apr. 21	Epidemic.	
St. Petersburg, Russia	Mar. 24–Apr. 17	80 cases,	24 "
Glasgow, Scotland	Apr. 7–14	1 case.	
Madrid, Spain	Apr. 1–7		10 "
Valencia, Spain	Apr. 14	1 "	1 death.
Straits Settlements, Singapore	Mar. 19–26		7 deaths.

Yellow Fever.

Rio de Janeiro, Brazil	Mar. 2–23	104 cases,	50 deaths.
Panama, Colombia	Apr. 10–24	4 "	
Port Limon, Costa Rica	Apr. 21		1 death.
Nuevitas, Cuba	Apr. 24	1 case.	
Vera Cruz, Mexico	Apr. 14–21		3 deaths.
Livingston, San Salvador	Apr. 11	Epidemic.	

Cholera.

Bombay, India	Mar. 27–Apr. 3		7 deaths.
Calcutta, India	Mar. 3–10		74 "

Plague—Foreign.

Bombay, India	Mar. 27–Apr. 3		685 deaths.
Calcutta, India	Mar. 3–10		601 "
Kurrachee, India	Mar. 24–Apr. 1	248 cases,	166 "
Tamsui, Japan	Feb. 1–28	47 "	38 "

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 28 to May 5, 1900:*

Agramonte, Aristides, Acting Assistant Surgeon, United States Army, is assigned to duty in charge of the department laboratory.

Edgar, Benjamin J., First Lieutenant and Assistant Surgeon, United States Army, is assigned to and will report for duty at the General Hospital, Presidio of San Francisco.

Gibson, Robert J., Major and Surgeon, United States Army, is relieved from duty as commanding officer of the hospital ship *Missouri* and will report in person to the commanding general, Department of California, San Francisco, for temporary duty.

Gorgas, William C., Major and Surgeon, is relieved as chief surgeon, Department of Havana and Pinar del Rio, and will report in person to the commanding general, Division of Cuba, for duty.

Heizmann, Charles L., Major and Surgeon, United States Army, is assigned to temporary duty in San Francisco, awaiting transportation to the Philippine Islands.

Holmes, T. G., Acting Assistant Surgeon, United States Army, will proceed to San Francisco to accompany the battalion of Fourteenth Infantry from that point to Fort Wayne, Michigan, and return with the companies of the Seventh Infantry from the latter post to Vancouver Barracks, thence to accompany Company B, Twenty-fourth Infantry, on its change of station to Fort Wright, Washington.

McCallum, F., Acting Assistant Surgeon, United States Army, will report to the commanding general, First Division, for duty.

McLaughlin, W. B., Acting Assistant Surgeon, United States Army, will report to the chief sanitary officer of the department for duty.

Matthews, Willard S. H., Major and Surgeon, United States Volunteers, is announced as attending surgeon and examiner of recruits in St. Paul.

Reynolds, Frederick P., Captain and Assistant Surgeon, United States Army, will report in person to Bell, J. Franklin, Brigadier-General, United States Volunteers, commanding general, Second Division, for temporary duty as brigade surgeon, Fourth Brigade.

Stoney, Randell C., Acting Assistant Surgeon, United States Army, will report to the commanding general, Department of California, for duty.

Thompson, Louis A., Acting Assistant Surgeon, United States Army, will report to the commanding officer, Norzgaray, Province of Bulacan, Luzon, for temporary duty, pending the arrival of Carling, John, First Lieutenant and Assistant Surgeon, Thirty-fifth Infantry, under orders to join his regiment at that station.

Warriner, Benjamin B., Acting Assistant Surgeon, United States Army, will proceed to Fort Fremont, South Carolina, to relieve Alexander, James A., Acting Assistant Surgeon, United States Army, who will proceed to New York city for further orders.

Warwick, Clarence A., Acting Assistant Surgeon, United States Army, will report at Santa Mesa Hospital for duty, relieving Hallwood, James B., Acting Assistant Surgeon, United States Army, who will report for duty with detachment of the Twenty-fifth Infantry at Botolan, Province of Zambales.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending May 5, 1900:*

Barber, G. H., Passed Assistant Surgeon. Detached from the *Kearsarge* and ordered to the *Monongahela.*

BEEBE, D. C., Assistant Surgeon. Detached from the *Yorktown* and ordered to the *Isla de Luzon.*

BERRYHILL, T. A., Surgeon. Detached from the *Monongahela* and ordered home to await orders.

BOYD, J. C., Medical Inspector. Detached from duty as assistant at the Bureau of Medicine and Surgery, Navy Department, and ordered to the *New York* as fleet surgeon of the North Atlantic Station.

BROWNELL, C. D., Passed Assistant Surgeon. Ordered to the Naval Training Station, Newport, Rhode Island.

FITZSIMMONS, P., Medical Inspector. Detached from the *New York* as fleet surgeon of the North Atlantic Station and ordered to proceed home to await orders.

GATEWOOD, J. D., Surgeon. Detached from the Bureau of Medicine and Surgery, Navy Department.

HIGH, W. E., Assistant Surgeon. Detached from the *Manila* and ordered to the hospital.

MORGAN, D. H., Assistant Surgeon. Ordered to the *Vermont.*

WHEELER, W. M., Passed Assistant Surgeon. Detached from the *Vermont* and ordered to the *Kearsarge.*

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the United States Marine-Hospital Service for the Seven Days ending May 3, 1900:*

BAILHACHE, P. H., Surgeon. Detailed to represent the service at the convention for the decennial revision of the United States Pharmacopœia at Washington.

COBB, J. O., Passed Assistant Surgeon. To report to the chairman of the board of examiners for examination to determine his fitness for promotion to the grade of surgeon.

CORPUT, G. M., Assistant Surgeon. To proceed to Mullet Key, Florida, and assume command of the detention camp.

FRICKS, L. D., Assistant Surgeon. Relieved from duty at Washington and directed to proceed to Manila and report to the chief quarantine officer for duty.

GEDDINGS, H. D., Passed Assistant Surgeon. Detailed to represent the service at the convention of the decennial revision of the United States Pharmacopœia at Washington.

HOLT, E. M., Hospital Steward. To proceed to Portland, Maine, and report to the medical officer in command for temporary duty and assignment to quarters.

MAGUIRE, E. S., Hospital Steward. Relieved from duty at Evansville, Indiana, and directed to proceed to New York (Stapleton) and report to the medical officer in command for duty and assignment to quarters.

MASON, M. R., Hospital Steward. To proceed to New York city and report to the medical purveyor for temporary duty.

MCMULLEN, JOHN, Assistant Surgeon. Granted six days' extension of leave of absence.

ROSENAU, M. J., Passed Assistant Surgeon. Detailed to represent the service at the meeting of the American Medical Association at Atlantic City, New Jersey, from June 5th to June 8th.

STANSFIELD, H. A., Assistant Surgeon. Relieved from duty at Honolulu, Hawaiian Islands, and directed to proceed to Manila and report to the chief quarantine officer for duty.

TABB, S. R., Assistant Surgeon. Upon being relieved from duty at Savannah, to report in person at the bureau for further orders.

VON EZDORF, R. H., Assistant Surgeon. Relieved from duty at New Orleans and directed to proceed to Savannah and assume command of the service.

WASDIN, EUGENE, Surgeon. Detailed to represent the service at the meeting of the American Medical Association at Atlantic City, New Jersey, from June 5th to June 8th.

Board Convened.

Board convened to meet in Washington, May 3, 1900, for the examination of COBB, J. O., Passed Assistant Surgeon, to determine his fitness for promotion to the grade of surgeon. Detail for the board: WHITE, J. H., Surgeon, chairman; WOODWARD, R. M., Surgeon, and VAUGHAN, G. T., Surgeon, recorder.

Births, Marriages, and Deaths.

Married.

ENEBUSKE — FOLSOM.—In Cambridge, Massachusetts, on Thursday, April 26th, Dr. Claës Julius Enebuske, of Boston, and Miss Sarah McKean Folsom, daughter of Dr. Norton Folsom.

HALL—SEARLE.—In Brooklyn, on Tuesday, May 8th, Mr. Charles Henry Hall and Miss Jeannette F. Searle, daughter of Dr. William S. Searle.

HALL — ELLIS. — In Seminary, Mississippi, on Wednesday, May 2d, Dr. W. W. Hall, Jr., and Miss Carrie Ellis.

MADEN—DURYEA.—In Bensonhurst, Brooklyn, on Monday, April 30th, Dr. Antonio C. Maden and Miss Kathleen Duryea.

PEMBERTON — TODD.—In Richmond, Virginia, on Tuesday, May 1st, Dr. Russell Pemberton, of New York, and Miss Mabel Todd.

REGAN — MURRAY.—In Brooklyn, on Wednesday, May 2d, Dr. T. J. Regan and Miss Aleta C. Murray.

Died.

BURDICK.—In Johnstown, New York, on Monday, April 30th, Dr. John E. Burdick, aged sixty-two years.

GRAY.—In New York, on Tuesday, May 8th, Dr. Landon Carter Gray, in the fifty-first year of his age.

HOUGH.—In Ewing, New Jersey, on Sunday, May 6th, Dr. John Stockton Hough, in the fifty-fourth year of his age.

JONES.—In Benson, Vermont, on Monday, April 30th, Dr. Henry R. Jones, aged seventy-eight years.

KINNEY.—In Roxbury, Massachusetts, on Thursday, April 26th, Lucy M. Kinney, daughter of Dr. John E. Kinney.

PARKER.—In Boston, on Thursday, April 26th, Dr. David S. Parker, of South Boston, in the sixty-eighth year of his age.

POMEROY.—In Stuyvesant Landing, New York, on Tuesday, May 1st, Mrs. P. K. Pomeroy, wife of Dr. P. K. Pomeroy.

WILLIAMS.—In Atlantic City, New Jersey, on Sunday, April 29th, Dr. Edward P. Williams, in the sixty-ninth year of his age.

Obituaries.

LANDON CARTER GRAY, M. D.

By the death of Dr. Gray, which occurred on Tuesday, May 8th, the profession loses a genial member and a neurologist of prominence. He was a graduate of the Bellevue Hospital Medical College, of the class of 1873. He was a member of the faculty of the New York Polyclinic, and had at various times held the presidency of several medical societies. His decease, which had been expected for a number of weeks, was untimely, for he was only in his fifty-first year. He was the author of an excellent text-book of neurology.

Pith of Current Literature.

Medical Record, May 5, 1900.

Perforating Duodenal Ulcers. By Dr. Robert F. Weir.—The round or peptic ulcer of the duodenum is much rarer than ulcer of the stomach, is more difficult to diagnosticate properly, and is more apt to be confounded with other more distant surgical lesions, such as appendicitis, etc. These, generally speaking, are usually single, and are found on the anterior wall (most frequently) of the upper part of the duodenum, within an inch and a half of the pylorus. Perforation takes place in about fifty per cent. of the cases and is more common in men (seventy-nine per cent.) than in women (twenty-one per cent.). The ætiology appears obscure. Burns seem to be an ætiological factor, though this complication of a burn would seem to be due to septic infarctions, such as may be developed in frostbite, erysipelas, or tuberculosis. This ulcer is encountered at all ages. Symptoms are very slight. Pain, when characteristic, occurs several hours after eating and presents itself just below the gall bladder, and may reach to the median line or to a level with the navel. Reflex vomiting is present in seventeen per cent. of all cases. Right-shoulder pains are occasionally noted. Jaundice is rare, while hæmorrhage is to be expected in one third of the cases of non-perforating ulcers.

Within the past eight years the mortality (when operation has been performed within twelve hours) has fallen from thirty-nine to seventeen per cent. in the treatment of gastric ulcer, and a similar improvement will take place in the recognition and proper treatment of duodenal ulcers.

The treatment applicable to the management of a gastric ulcer holds good also in the case of a duodenal ulcer. Operation is seldom called for before perforation has occurred, though Codevilla has resorted in two cases to a gastro-enterostomy with a cure as the result of his intervention. Fifty-one cases follow in detail of operations for duodenal perforations.

A Preliminary Report on a New and Simple Method for Sterilizing Catgut. By Dr. Charles A. Elsberg.—This consists in boiling the spools of catgut (first freed from fat) in a hot saturated solution of ammonium sulphate in water for from ten to thirty minutes, then washing the spools by agitation in warm sterile water, carbolic acid, or bichloride solution of any strength. The spools are then preserved in strong alcohol.

Medical News, May 5, 1900.

The Medical School of the Future. By Dr. H. P. Bowditch.—It will be connected with a university, but to the faculty will be left the methods of instruction and the personnel of the teaching body.

An elective system of some sort will necessarily be adopted, as the amount of instruction provided will be far more than any one student can follow.

The laboratory method of instruction will be greatly extended, but the didactic lecture will not be entirely displaced from its position as an educational agency. The work will be concentrated upon one principal subject at a time, and these subjects will follow each other in a natural order.

Examinations will test both the student's application to his work and his permanent acquisition of medical knowledge.

Truth in Medicine. By Dr. E. G. Janeway.

Perforating Duodenal Ulcers. By Dr. Robert F. Weir.—Previously referred to.

The Present Status of Rectal Surgery. By Dr. Joseph M. Mathews.

Boston Medical and Surgical Journal, May 3, 1900.

The Ideal Ration for an Army in the Tropics. By Dr. Edward L. Munson.—This article, which is to be continued in the next edition of the *Boston Medical and Surgical Journal*, devotes itself in this issue to a consideration of the Physiology of Hot Climates. Statistical in character, it will not bear quotation, and must be read in its entirety to be appreciated.

Philadelphia Medical Journal, May 5, 1900.

The Medical School of the Future. By Dr. H. P. Bowditch.—Previously noted.

Adaptation of Pathogenic Bacteria to Different Species of Animals. By Dr. Theobald Smith.—The author inclines to the belief that the great specific energy of many disease germs was acquired in earlier geological ages, possibly in animals of very different type from those now living. But the process of making pathogenic bacteria is, not improbably, going on now in the animal world, to be noticed only when these bacteria have been transported by some accident from their unseen habitat to species which happen to be susceptible. He finds it difficult, for instance, to conceive the colon bacillus as acquiring pathogenic or invasive properties by a saprophytic life in the intestinal tract of man without at the same time inducing immunity in the race.

Some of the Physiological Methods and Means Employed by the Animal Organism in its Continual Struggle against Bacteria for Maintenance of Life and Health. By Dr. S. J. Meltzer.

The Relation of Bacteriology to Medicine. By Dr. Richard C. Cabot.

Bacterio-therapeutics, with Special Reference to Tuberculosis. By Dr. Edward R. Baldwin.

The Sociological Status of the Physician. By Dr. Clarence John Blake.—His principal value to the community springs from his intimate knowledge of the personal needs of his brother man. His sociologic status is the outcome of this distinctive privilege, and his recognition and proper use of it, as the teacher of the individual and as the exponent of the beauty and righteousness of cleanly, wholesome, and useful living, make his foremost duty to society.

Nephrectomy for a Large Aneurysm of the Right

Renal Artery, with a Résumé of the Twelve Formerly Reported Cases of Renal Aneurysm. By Dr. W. W. Keen.

President's Address at the Decennial Convention for the Revision of the United States Pharmacopœia. By Dr. H. C. Wood.

On Recent Advances in our Knowledge Concerning the Ætiology of Malarial Fever. By Dr. William Sydney Thayer.

Albany Medical Annals, April, 1900.

State Care of Tuberculous Patients. I. Report of the Committee on Hygiene.—This report was presented by the commissioners, Henry R. Hopkins, J. M. Mosher, M. A. Veeder, H. L. Elsner, and George Seymour, to the Medical Society of the State of New York, January 30, 1900. The commissioners "advise and recommend that this society cease not from its efforts until the State of New York affords to its incipient consumptives the beneficent and hopeful treatment of State sanatoria."

II. **The Duty of State and Municipality in the Care of Pulmonary Tuberculosis among the Poor.** By Dr. Edward O. Otis.—The author says that while the city and State between them have provided for the care of the insane, the feebleminded, dipsomaniacs, and all others diseased and injured, there remains a large number of poor consumptives for whom no provision has been made. The public must be convinced that consumption is the most prevalent disease of modern times; that it is curable in the early stages; that a certain proportion of consumptives, by want of care as regards their sputum, endanger the rest of the community; and that hopeless cases among the poor have no decent treatment or care.

Two sets of institutions in the author's opinion will be required to best meet the requirements: First, consumptive hospitals in or near the cities for the reception of poor consumptives in all stages of the disease, erected and maintained by the municipality, as are now the city hospitals for other diseases. Undoubtedly, as with hospitals for other diseases, there would be other such consumptive hospitals established and maintained by private charity; all the great London chest hospitals are so supported; but the initiative must come from the city, for the city or community has assumed it as its duty to care properly for its own sick poor. Second, several State sanatoria more favorably situated climatically for the application of the open-air treatment, and not too far distant from the city which would furnish the majority of its *clientèle*. From the city consumptive hospitals the more hopeful cases could be later transferred to such institutions, such sanatoria receiving only the incipient cases of those offering a fair prospect of arrest. By consumptive hospitals, the author does not mean asylums or homes where those afflicted with disease can comfortably die, but a place where curative treatment can be offered, so far as the conditions of location in or near a city will allow. The author considers that the expense of maintenance would be about $350 to $450 *per capita* yearly.

III. **Remarks upon the Work Accomplished at the State Hospital for Consumptives at Rutland, Massachusetts.** By Dr. Vincent Y. Bowditch.—This is the first State hospital of this nature. The chief point of interest is the number of "arrested cases." One of the greatest benefits of such sanatoria is their educational effect upon the community at large.

IV. **Some Results of the Climatic and Sanatorium Treatment of Tuberculosis in the Adirondacks.** By Dr. E. R. Baldwin.—During fifteen years, out of 1,200 patients cared for, 277, or twenty-three per cent., were discharged apparently cured; 669, or fifty-six per cent., with the disease arrested or much improved; 230, or nineteen per cent., were discharged in a stationary or unimproved condition, and 24, or two per cent., died at the institution. It was found that sixty-eight per cent. of incipient cases were discharged apparently cured, while only eleven per cent. of advanced cases recovered. The administration expenses have been kept down to seven dollars a week, Dr. Trudeau, the director, receiving no salary. The author believes that the good results here reported have been obtained because, first, the patients have been removed from their homes and occupations to a favorable, invigorating climate, with cheerful surroundings; secondly, and quite as important, on account of enforced rest in the open air, abundant feeding, and a regulated life; lastly, as a result of education in what is necessary for their own health and the protection of others.

The magnitude of the task of caring for the poor consumptive seems to the author only a greater reason for the State undertaking it.

V. **The Infectious Character of Tuberculosis and the Prognosis of Incipient Consumption.** By Dr. George Blumer.

VI. **The Policy of the State Relative to the Spread of Tuberculosis.** By Dr. Enoch V. Stoddard.—"It would not be difficult, under the general supervision of the State Board of Health, to found a system of hospitals, originated and managed by local boards of health. The enactment of a law by the legislature, containing such provisions, would at once serve to develop a series of local hospitals for the care of incipient as well as chronic cases of tuberculosis, in the vicinity of the great centres of population. These, in their turn, would serve as stimuli to the residents of smaller towns and villages for the establishment of their own hospitals. There could thus be originated and followed in every household a policy regarding tuberculosis which would exert a power of prevention sufficient to control the development of the disease as fully as any other malady of a contagious or infectious character."

VII. **Legislation Concerning Tuberculosis, Past, Present, and Future.** By Senator Horace White.—The author considers the arguments in favor of State care of consumptives, and meets the only argument which he has heard adduced against it—viz., that of expense—by considering the pecuniary value of the lives taken from the State annually by consumption. He is firmly convinced that the desired relief is sure to come.

VIII. **Taxation with Relation to the State Care of Consumptives.** By Hon. Otto Kelsey.—The author considers the cost of the present State expenses for public benefits, medical and otherwise, and finds his sympathies and personal feelings at direct variance with his judgment as to the practical side of the question. Good faith as a member of the legislature requires him to affirm that under present circumstances he does not believe that the State is prepared to assume this tremendous burden.

New Orleans Medical and Surgical Journal, April, 1900.

Is Food Inspection Beneficial to Health? By Dr. Charles Herzman.—The author considers the various diseases of which food is a medium of conveyance—viz., tuberculosis, trichinosis, cysticercus, distomiasis, ptomaine poisoning, etc., and asserts that a good food inspection is essential to health.

Regulations for Lay Nurses, to Prevent the Spread of Contagious Diseases and to Prevent Quarantines: Yellow Fever, Cholera, Plague, Small-pox, Diphtheria, Typhoid Fever, Scarlet Fever, Measles. By Dr. Edmond Souchon.—This is a series of regulations in one hundred and sixty-six paragraphs formulated by the author, presumably in his capacity of president of the Louisiana State Board of Health.

A Typical Case for the Use of Digitalis. A clinical lecture by Professor Arthur V. Meigs.

A Case of Jacksonian Epilepsy, Specific in Type—Traumatic Hernia—Carcinoma of Breast. A clinical lecture by Professor W. W. Keen.

An Interesting Case of Enteric Fever, with Remarks on the Diagnosis and Treatment of Peritonitis—Addison's Disease. A clinical lecture by Professor James C. Wilson.

The Treatment of a Simple Case of Nausea and Vomiting in Pregnancy—Care of the Breasts after Miscarriage. A clinical lecture by Dr. E. P. Davis.—A kind of muslin should be accurately applied to the body in order to support the breasts. This should be kept in place by straps passing over the shoulders and crossed behind if necessary. The binder should be applied in such a way and of sufficient tightness to gently compress the breasts and bring them as near as possible to the middle line. Over each nipple is placed a bit of sterile lint and each breast is covered by a pad of sterile gauze before the binder is applied. In many cases this is all that will be necessary. In other instances, where the breasts become congested with milk, gentle massage or pressure of the ducts from the periphery to the nipple and the application of the breast pump at times may be necessary. This can be done without giving the patient much pain, but should not be resorted to unless the accumulation of milk is of considerable quantity.

In a small proportion of cases the application of an ice-bag or coil is advisable. Great care should be taken that this application is made perfectly dry. The principal points in managing these cases are the proper application of the bandage and the keeping of the nipples perfectly sterile. The great majority of cases will do well with this simple management, a certain proportion will need the judicious application of the breast pump, and yet a smaller number may require the ice-bag in addition to the other measures.

Treatment of an Improperly Fed Child—Bronchopneumonia. A clinical lecture by Dr. E. E. Graham.

The Lancet, April 28, 1900.

A Case of Internal Derangement of the Knee Joint. By Dr. E. Owen.—The writer reports the case of a man, aged twenty-five, who, in playing football, had twisted his knee and lacerated the internal semilunar cartilage. He continued to engage in athletic sports at intervals for a year, until the pain of the knee and wasting of the muscles of the thigh compelled him to stop. A vertical incision, three inches long, was made behind the inner border of the patella, and the ragged anterior portion of the internal semilunar cartilage was found to be out of place, lying between the inner femoral condyle and tibial tuberosity. This portion of the semilunar cartilage was cut away from the internal lateral ligament and removed. The limb was put up in gypsum splints, a drain being left in for twenty-four hours. The man recovered perfectly and resumed his football playing with great vigor.

An Experimental Inquiry into Scurvy. By F. G. Jackson and Dr. Vaughan Harley.—In the *Journal* for May 5th, in the editorial on The Cause of Scurvy, will be found a critical notice of the investigations of these authors.

Endoscopy of the Œsophagus and Stomach. By Dr. G. Kelling.—The writer describes two instruments invented by himself for endoscopy of the œsophagus and stomach. The œsophagoscope consists of a series of metallic cylindrical segments, similar to those of a flexible silver catheter, each segment being half an inch in diameter and seven tenths of an inch long, the whole series being covered by a thin India-rubber tube. A wire passes through an eye on the back of each segment; when this wire is tightened by means of levers, the tube becomes perfectly straight and rigid. The instrument is inserted in a flexible state and is then straightened, when a view of the œsophagus may be obtained. A list of conditions is given in which œsophagoscopy is contraindicated: among them are varicose veins, cirrhosis of the liver, advanced cancer, aneurysm, mediastinal tuberculosis, etc. Persons with short necks and prominent upper jaws can not endure straightening of the œsophagus. General anæsthesia must not be used. A ten-per-cent. solution of cocaine is to be brushed on the pharynx and larynx.

The gastroscope is constructed on the same principle as the œsophagoscope, having in addition a rigid beak which is attached to the flexible tube at an angle. There is a small electric lamp at the extremity of the beak, and just above this a prism. The lamp and prism can be rotated. The instrument is inserted until the beak has passed the cardia, when it is rotated so that the beak points to the pylorus. It is then straightened and the electric current turned on in the lamp. An image of the stomach walls is transmitted through the prism and focused by means of a lens upon a plane mirror set at the angular junction of the beak and the straight portion of the tube. The mirror reflects the image directly to the eye of the observer. By rotating the lamp and prism, all parts of the stomach may be examined. The construction and methods of use of the instruments are described in detail, illustrations are given, and cases reported of their use.

A Case of Pernicious Anæmia Treated by Antistreptococcic Serum. By Dr. W. Elder.—The writer reports a case of pernicious anæmia which he treated in accordance with the views of Hunter as to the nature of the disease. Hunter believes pernicious anæmia to be due to an infection of the mucosa of the mouth, stomach, and intestine, characterized by blood changes, alimentary disturbance, and toxæmic symptoms. The patient, a man, aged thirty-five, had been sick six months. The illness began with an attack of diarrhœa, after which he grew steadily weaker and more anæmic. Bowels obstinately constipated; teeth very bad; earthy jaundice. Blood examination showed the following: Red corpuscles, 797,500; leucocytes, 4,520; hæmoglobin, twenty-four per cent.; many nucleated red corpuscles, thirty-one per cent. of which were typical megaloblasts; numerous poikilocytes, and well-marked polychromatophilia.

The treatment was as follows: Thorough and continuous cleansing of the mouth and teeth by means of antiseptic washes. Internally he received five grains of salol and fifteen grains of salicylate of bismuth every six hours. Every second day ten cubic centimetres of antistreptococcic serum were injected into the subcutaneous tissues over the dorsum ilii. The constipation was overcome with cascara sagrada. He received no arsenic, iron, or bone marrow. Eighteen injections of the serum were given in all. His condition steadily grew better, there was corresponding improvement in the state of the blood, and forty-five days after the commencement of treatment his blood had practically reached normal (reds, 4,800,000; hæmoglobin, one hundred and four per cent.), but a few nucleated red corpuscles were still present. One month after discharge he was still in good health.

On Cysts of the Breast; their Relative Frequency, Diagnosis, and Treatment. By Dr. T. Bryant.—Out of two hundred and forty-two consecutive cases of breast disease in women seen by the writer in private practice, sixty-seven were of cystic disease. Of these, twenty-three were in single and forty-four in married women. Forty-four cases were operated upon (*presumably successfully*). About one half of the cases occurred between the ages of forty and fifty. The writer reaches the following conclusions: 1. Simple cysts of the breast are far more common than they are generally believed to be. 2. They are chiefly found at the same period of life at which cancer is met with. 3. They are mostly quite amenable to local treatment without sacrifice of the breast gland. 4. There is no reason to believe that women who have these cysts are more prone to cancer than those who have them not. He recommends exploratory incision in all cases. If the cyst wall is found to be free from papillary growth, all that is necessary is to swab it out with tincture of iodine. Should there be any intracystic growth, however small, the dissection of the cyst out of the gland should be adopted as a rule of practice. When the growth is fleshy, the lobe involved or the whole gland should be removed.

Inversion of the Myomatous Uterus. By Dr. W. R. Williams.—Inversion is one of the most urgent complications of uterine myomata demanding surgical intervention. The myoma acts as a foreign body and the uterus continually strives to expel it. The tumor gradually dilates the cervical canal, and may enter the vagina and be extruded from the vulva. The thinning of the uterine wall at the seat of the implantation of the tumor also plays an important part in the mechanism of inversion. Some cases are due to traction on the tumor, as in Emmet's operation. The inverted myomatous uterus is very tolerant of all kinds of operative procedures. In many cases it is impossible to reduce the inverted organ; here a portion of the uterus must be removed. The author quotes three cases from the literature of the subject bearing on this point.

Strychnine as a Factor in Causing Cerebral Hæmorrhage. By Dr. L. Grant.—The writer calls attention to the danger of giving strychnine to patients who have arrived at the degenerative age, and especially in all cases of cirrhotic Bright's disease, chronic gout, and syphilis, or where a patient has thickened or tortuous blood-vessels, or even where there has been an hereditary tendency to apoplexy. He reports the case of a man aged sixty-four, with atheromatous vessels, who had been in the habit of taking the syrup of iron, quinine, and strychnine. A larger dose than usual was followed by a right-sided cerebral hæmorrhage which proved fatal. The writer believes the hæmorrhage to be due to the increased blood pressure caused by the strychnine.

On the Value of Abdominal Distention as an Indication for Exploratory Laparotomy in Intestinal Obstruction. By Dr. J. J. Waddelow.—The writer reports a case of acute abdominal obstruction in a man, aged fifty-four, with severe pain in the region of the gall bladder and marked abdominal distention, coils of intestine being visible through the skin. Fæcal vomiting was present for two days. Copious soap-and-water enemata were given daily, and after seven days the bowels moved spontaneously and the man made an uninterrupted recovery. The obstruction was probably due to a gallstone. On the sixth day the writer intended operating, but refrained from doing so because there had been no increase in the amount of abdominal distention, which he looked on as a favorable sign.

The British Medical Journal, April 21, 1900.

The "Riding Fragment" in Fractured Leg. By Dr. C. H. Golding-Bird.—According to the writer, the "riding fragment," or sharp projection in fracture of the tibia, is produced in two entirely different ways. In the first, the green-stick or Y-shaped fracture, extension of the leg causes the projection and shortening of the leg to disappear. In the second, the spiral fracture, there is little shortening of the leg, and extension is of no avail to reduce the marked projection. This second form is accompanied by outward rotation of the foot, and is much more common than has been supposed. In many cases it is found impossible to reduce the projection by inward rotation, even after cutting down and freeing the broken ends of the tibia from all attachments. In the writer's opinion this "spring-action" difficulty is due to the fibula. When both bones of the leg are broken by a twisting force, the fibula snaps directly across, and its end is driven into the muscle, so that the fibula then forms a straight spring, tending to twist the ends of the tibia apart. It is in such cases that the writer advises operation, and not only upon the tibia, but upon the fibula as well; the ends of the latter are to be cut down upon, freed, and placed in coaptation. The operation consists in free exposure of the fractures, thorough removal of extravasated blood, forcible replacement of the fractured ends with removal of the rhomboidal third fragment if necessary, and wiring with silver wire. The article is accompanied by excellent skiagraphs illustrating the different points brought out by the writer.

Calculi Impacted in the Ureters. By Dr. D. Newman.—The writer discusses the pathology, symptoms, and surgical treatment of those cases where all the symptoms point to the presence of a calculus in the renal pelvis, but where no stone is to be found, it having descended into the ureter. He reports four such cases, and calls attention to the great importance of exploring the ureters in every case. Calculus in one ureter causing complete occlusion, the other kidney being incompetent, leads very soon to complete anuria, which, however, is rarely followed by uræmia; life is generally prolonged for from nine to eleven days. The various modes of diagnosis and operation are discussed, the writer recommending the removal of the stone through an incision in the kidney where possible.

Large Sarcomatous Neuroma of the Internal Popliteal Nerve. By Dr. G. Buchanan.—The writer reports a case of a large sarcomatous neuroma of the internal popliteal nerve in a man aged twenty. The tumor was first noticed six months previously, and had steadily increased in size, but was painless. Upon operation it was found to be entirely within the nerve sheath, and microscopical examination showed it to be a round-cell sarcoma. A week later the leg was amputated at the thigh.

Absence of sensory and motor symptoms in the leg below the tumor showed that, although the nerve was extensively infiltrated by the new growth, only a few of the fibres had suffered.

A Case of Enterectomy by End-to-end Suture in a Boy Aged Seven. By Dr. F. C. Wallis.—The writer reports a case of fæcal fistula, with prolapse of the bowel through the opening, in a boy aged seven, due to an operation for acute intestinal obstruction seven months previously. The boy had tuberculous peritonitis in 1895, lasting thirteen weeks. The writer performed enterectomy, removing three inches and a half of intestine, and the ends of the intestine were united by two rows of sutures, the calibre of the intestine being too small to permit the use of decalcified bone tubes. The patient made an excellent recovery. In conclusion, the writer reviews the possible causes of such a case of intestinal obstruction, and the methods of removing the obstruction, of resection of the bowel, etc. Where there is doubt as to the condition of the gut, the writer recommends remedying the obstruction by opening the bowel.

On Double Castration for Tuberculosis of the Testes. By Dr. F. A. Southam.—The writer reports four cases of bilateral tuberculosis of the testes, in which he performed double castration. The present condition of all the cases is good; in one there is still induration of the vesiculæ seminales. Two cases had tubercular joint disease, both of which have quite recovered. One case had pulmonary tuberculosis, which is quiescent. In three of the cases the two testes were removed at separate operations, the interval varying from three years to three months.

Lengthening of Hamstrings by Operation for Contracture after Burn. By Dr. W. F. Brook.—The writer reports the case of a boy, aged fourteen, with marked contracture of the left knee joint following a burn at the age of three. He dissected away the cicatricial web, divided the fascial bands, and split and sutured the biceps tendon, completely dividing the inner hamstrings, which were too thin to be split. The shortening of the popliteal nerves and gracilis muscle was overcome by gradual extension by means of weights. The patient regained complete range of flexion and extension.

Five Cases of Complete Forward Dislocation of the Knee Joint Occurring Simultaneously. By Dr. E. V. Eames.—The writer reports the case of five miners, who, with thirteen others, were in a cage which fell sixty feet to the bottom of a colliery shaft. All five suffered from complete forward dislocation of one knee joint, due possibly to the position in which they were standing when the cage struck—*i. e.*, with legs straight and backs and shoulders bent. The dislocations were reduced under anæsthesia, and all recovered the use of the leg.

Twelve Cases of Mauser-bullet Wounds. By Dr. G. Ashton.—The writer reports twelve cases of Mauser-bullet wounds where, from the course of the bullet, serious if not fatal injuries were to be expected. Yet all but three of the cases returned to duty after comparatively short periods of time.

The Dublin Journal of Medical Science, April, 1900.

A Fatal Case of Congenital Bullous Eruption in an Infant. By Richard H. Kennan, M. D.—There are two classes of cases—pemphigus neonatorum and the pemphigoid eruption of hereditary syphilis. The author recapitulates the following points of his case as rendering it difficult to form a conclusion as to its nature and ætiology:

If the case is not regarded as one of syphilitic congenital bullous eruption, it must, as it seems to the author in the present state of our knowledge, be included in the only other well-defined class—that which most commonly receives the name pemphigus neonatorum. The fatal termination, though not absolutely negativing such a diagnosis, at any rate removes it from association with the majority of such cases. Again, the remarkable localization of the sites of the earliest and severest cutaneous lesions—viz., the hands and feet—still further assist in making its correct inclusion among that class very problematical. On the other hand, if it is received among those cases owning a syphilitic cause, we are opposed by the facts that, first, no evidence could be gained from the parents, either by interrogation or examination, which could in any degree point to the existence of syphilis in them. Secondly, that, though it is true but one of the three previous pregnancies has been successful in producing a child which has passed safely through the period of infancy, there is nothing in this fact alone to give any assistance of a positive kind; further, the second, or surviving, child has neither history nor sign of congenital taint. Thirdly, post-mortem examination has failed to establish confirmatory evidence in favor of a syphilitic origin.

One of these considerations taken alone would give but slender ground for the justification of an opinion, but taken together they must, the author thinks, be allowed considerable weight.

Notes on a Case Simulating a Perforating Gastric Ulcer. By William John Thompson, M. D., and F. Conway Dwyer, F. R. C. S. I.—A case is recorded the symptoms of which, occurring in a thin and anæmic girl of twenty-three with a family history of phthisis, led very rationally to the diagnosis of a gastric ulcer which had become perforated. Mr. Dwyer opened the abdomen, but, finding no ulcer, enlarged the wound downward and discovered "a coil of jejunum in an intensely inflamed condition, covered with thick flakes of lymph, and having on its surface two almost gangrenous patches." Perforation, though absent, was inevitable. Resection was practised with Murphy's button. The patient made a good recovery. The authors say: "The practical lesson to be learned from such cases as the one recorded is not to lose valuable time in academically balancing probabilities, but to proceed at once to operation. If the case is one in which surgical aid is unavailing or unnecessary, no harm will be done by a surgeon versed in the technique of abdominal work, while prompt interference has saved many lives."

Digitalis in Heart Disease. By Reginald C. Peacocke, M. D.

Clinical Reports of the Rotunda Hospitals for One Year, November 1, 1898, to October 31, 1899. (Continued.) By R. D. Purefoy, M. D., F. R. C. S. I. (Master), and R. P. R. Lyle and H. C. Lloyd (Assistants). —(To be continued.)

Gazette hebdomadaire de médecine et de chirurgie, April 26, 1900.

Treatment of Acute Psychoses by Rest in Bed (Review).—M. P. Lérieux and M. F. Farnarier recommend this measure highly and affirm that its universal application would result in many more cures than is now the case.

Lyon médical, April 22, 1900.

Perineal Uretrostomy.—M. Poncet and M. Delore define this operation as the formation of a permanent urinary meatus made just behind the scrotum. The inferior wall of the divided urethra is sewed to the borders of the cutaneous incision. The operation is to be performed when there is an impassable stricture of the urethra with complete stenosis, which remains incurable despite attempted dilatation and internal or external urethrotomy. The authors report a number of cases which have been satisfactory in result.

Ablation of a Primary Carcinoma of the Epiglottis.—M. Jaboulay records a new operation which is a modification of older ones. He first performs a subhyoid pharyngotomy, then a median section of the hyoid bone, as devised by Gussenbauer, and finally a total ablation of this bone. This procedure, carried out with a crucial incision, combines the advantages of previously devised operations.

La Presse médicale, April 14, 1900.

Glomerulitis.—M. V. Cornil describes the pathological appearances of sections of kidneys in the various nephritides, laying special emphasis upon the important rôle played by the glomerulus in each of the renal affections.

Polymorphous Dermatitis. By M. L. Brocq.

La Presse médicale, April 18, 1900.

Appendicular Pleurisy.—M. M. G. Dieulafoy describes the pleurisy originating from an appendicitis by the formation of pus cavities behind the colon and their extension upward to and perforating the diaphragm. The infection of the pleura follows in from six to ten days after the onset of the inflammation of the appendix. It is usually limited to the right side. Its beginning symptoms are violent pain in the right hypochondrium, thoracic pain extending to the right shoulder, a sharp cough without expectoration, and intense dyspnœa. The transudate may be serous only, but more frequently it is putrid and fœtid. Auscultation and percussion give the signs of a large transudation. Sometimes the signs of a pneumothorax are present, due to the formation of gases of putrefaction. The prognosis is always serious. It depends upon the general condition and the pulse. The treatment must be that of an empyema, at the same time operating for the appendicitis. The author regards the surgical treatment of appendicitis at an opportune time the most rational means of treating the disease, and as being, at the same time, prophylactic of the severe complications which may follow it.

Prolapse of the Rectum.—M. Gérard Marchaut says that the best method of operating these cases so as to insure a permanent result is that of recto-coccypexy, which consists in suturing the ampulla of the rectum by its posterior wall to the coccyx. The rectum has considerable freedom of movement and can not again become prolapsed.

L'Indépendance médicale, April 18, 1900.

Galactophoritis and Lymphangeitis of the Breast.—M. Maygrier says that the treatment of these conditions should be prophylactic. The nipples should be kept moistened with compresses wet with boric-acid solution. Fissures and cracks may be avoided or cured by the application of an alcoholic solution of orthoform, which is sedative and at the same time promotes cicatrization. The infant's mouth must be washed before nursing and, if it has an ophthalmia, the eyes must be covered while it is at the breast. With rigid hygienic and prophylactic measures, an abscess of the breast may be avoided.

Le Progrès médical, April 21, 1900.

Severe Form of Acute Malarial Cachexia.—M. Jean P. Cardamatis reports the case of a child who suffered from this condition and who had not come into contact with persons sick of malarial fever and had not been in a malarial district in several days. The case proves to the author's satisfaction that deep malarial intoxication can appear in a person not deeply impregnated who had had, however, for a considerable time a low febrile movement. His attendant ailments had increased his paludism and apparently furnished a fruitful soil for the malarial hæmatozoa.

Hysteria in Childhood.—M. Bourneville and M. Boyer, in reporting a well-marked case of hysteria in a child of ten, of vicious ancestry, emphasize the alcoholic history of the ancestors. The physical marks of degeneration lay in a marked asymmetry of the head and face and a slight deformity of the penis. The child always showed mental weakness. The disease first showed itself at twelve years and a half and probably was induced by fright and alcoholic excess. Under appropriate educational treatment, the mental weakness has almost disappeared and hysterical attacks have not recurred.

Journal des praticiens, April 14, 1900.

Tubercular Ulceration of the Tongue.—M. H. Morestin, in an extensive article, gives a sketch of the development of the recognition of this condition. He thinks the majority of cases are infected by the saliva through the sputum, and gives as a reason why infants rarely suffer from this disease that they do not expectorate, although substances containing tubercle bacilli may infect a susceptible buccal mucous membrane. The lesions progress slowly until the mucous membrane is destroyed, when the process advances rapidly. The edges of the tongue are most frequently attacked, the ulcers being single usually, but they may coalesce. The ulcers are round or oval, with dentated, irregular edges. The base of the ulcer is whitish or grayish, crater-like, with little nipples projecting from the bottom. No tumor or induration can be felt. The submaxillary and cervical glands become enlarged. Pain is almost constant and is of a sharp, lancinating character. Eventually, constitutional symptoms develop. The actual cautery is the best means of treatment, unless the lesion occupies the tip of the tongue, when its extirpation is the most useful measure. When the pharynx and larynx become invaded and the general condition of the patient becomes cachectic, treatment is of no avail.

Diagnosis is not very difficult. A tuberculous lesion can be diagnosticated microscopically by finding tubercles and tubercle bacilli in a small piece removed for examination; and grossly it can be differentiated from tumors because it does not itself present a tumor. Other ulcerations must be distinguished by their course and by microscopic examination.

Deutsche Medizinal-Zeitung, April 19, 1900.

Treatment of Chronic Nervous Diarrhœa.—Dr. Curt Pariser says that if the diarrhœa depends upon parasitic invasion of the lower intestine, local treatment must be resorted to, as well as in diarrhœas of a reflex nature from genital or nasal affections, herniæ of the linea alba, chronic gastritis, or enteroptosis. Morphine must be used if it is dependent upon the crisis of locomotor ataxia or Basedow's disease; in diabetes, the diet must be carefully regulated, and when tobacco or morphine intoxication is the basis of the ailment, no further intoxication must be allowed. In hysterical or neurasthenic individuals, complete isolation and rest are the best means of curing the symptom diarrhœa. A suitable diet is of the greatest assistance, and mild hydriatic measures, such as warm baths, are helpful. Arsenic, cannabis indica, the bromides, and the tannin preparations are the main drugs to be employed. A stay at Wiesbaden, Homburg, Kissingen, Carlsbad, or Marienbad is useful in cases which present a catarrh of the intestine, but in the purely nervous cases these are useless.

Deutsche Medizinal-Zeitung, April 23, 1900.

Cardiac Disease in Diabetes and its Treatment.—Dr. Schott says that the most frequent heart complication of diabetes is a neurotic affection, motor as well as sensory. Weakness of the heart muscle, with its attendant complications, is next in order of frequency, which, with myocarditis, must be carefully watched in diabetic subjects. Valvular lesions of the heart are least often seen. The prognosis depends upon the complications, the patient's general condition, and the severity of the lesion. The treatment involves the care of the diabetes as well as of the cardiac affection. Treatment at Carlsbad, Neuenahr, and Vichy is of service, but this must be resorted to with care so that the heart will not become weakened or excited. A diabetic diet must be ordered and strictly kept. The author does not favor the use of digitalis in these cases for fear of upsetting the stomach, and nourishment is an important element of treatment. He recommends hydriatic treatment to secure an action on the heart itself, to strengthen the nervous system, and to stimulate the skin. Mild gymnastics, especially "resistance" calisthenics, are advised, and psychical treatment is important.

Wiener klinische Wochenschrift, April 19, 1900.

The Cause Leading to the Inception of Uterine Contractions at Full Term.—Dr. Josef Thenen gives a short historical sketch of the causes leading to the beginning of the birth act. He says that the changes of pregnancy represent the specific reaction of the female organism to the irritation of a living fœtus. These changes are functional and are physiological. Uterine contraction is the first indication of the returning normal function of the uterus following directly the physiological termination of pregnancy. He finds in the placenta certain appreciable degenerative changes which justify the assumption of a physiological separation of mother and products of conception, with the expulsion of the latter in response to the irritation upon the uterus. Studying the placenta and fœtus in the last two months of pregnancy, the author finds that the placenta increases in weight but little during this time, while the fœtus undergoes a comparatively enormous augmentation. This difference Dr. Thenen ascribes to the undernourishment of the placenta during this period, and the placenta undergoes in consequence a retrograde metamorphosis. In other words, the fœtus develops at the expense of the placenta.

These considerations lead the author to the following hypothesis concerning the beginning of labor: The degeneration of the chorionic villi is the starting process of a physiological separation of mother and child, as the villi can no longer supply a vital connection between the two, and in consequence the irritation of a living fruit of conception is diminished. The separation proceeds with the chorionic degeneration, but the pregnancy continues so long as there is sufficient placental tissue intact to secure a vital connection between the mother and the fœtus. The degenerative placental changes spread until finally the "reaction of pregnancy" in the maternal organism is no longer present. and the end of pregnancy has then been reached. The uterus, then reacting to normal impulses, contracts until the fœtus and its attachments are expelled. The author concludes by offering clinical proofs for his hypothesis.

The Influence of Alcohol upon the Excretion of Reducible Substances in the Urine.—Dr. Adalbert Gregor finds that the ingestion of alcohol, notably beer, increases the quantity of reducible substances in the urine, which, he shows, is attributable entirely to the alcohol.

Wiener klinische Rundschau, April 15, 1900.

Blood Pressure in Normal and Cardiac Persons after the Administration of Digitalis.—Dr. Ernst von Czyhlarg found that when an infusion of digitalis is given to individuals with normal circulatory apparatus in quantities equal to that administered to persons with valvular disease, there is no increase in the blood pressure nor in the quantity of urine excreted, while the reverse is true of persons who have heart disease.

The Relation of Acromegaly to Diabetes Mellitus.—Dr. Wilhelm Schlesinger speaks of the frequent observance of the coincidence of sugar in the urine in cases of acromegaly. He reports three cases—one of genuine diabetes mellitus, one of polyuria in which the sugar gradually disappeared after great variations in its percentage, and one of alimentary glycosuria. The last case he thinks is dependent upon a tumor of the hypophysis.

Movement of an Intrathoracic Tumor in Deglutition.—Dr. G. Holzknecht reports a case of an intrathoracic tumor which moves with deglutition. Careful examination has proved it to be an aneurysm of the arch of the aorta, which, from its movement with the œsophagus, must be closely united with the trachea. Thyreoid tumors have always been supposed to be those which moved during deglutition.

Correlative Changes in Sensation.—Dr. E. Strausky and Dr. B. F. Ten Cate find that: 1. In healthy persons, hyperæsthesia of a small surface of skin evokes greater sensibility for the tactile and pain senses in other cutaneous areas on both sides of the body. This they call correlative change or variation. 2. These changes are most pronounced in those areas of the skin which receive their nerve supply from the same spinal segment. 3. In neighboring segments, the correlative changes are present, but less marked. 4. In cases in which sensation is disturbed, the correlative changes show a deviation from the normal. The authors do not believe it possible to draw any conclusions from their work except that they think the gray matter of the cord is the seat of these variations in sensation.

The Diagnosis of Sciatica.—Dr. E. Sucharipa has examined by rectum twelve patients with sciatica in order to prove Ehret's observation that intrapelvic pressure upon the sciatic nerve elicits pain which is identical with that of an attack of sciatica, and that the pain spreads in a radius identical with that of an attack. This observation was confirmed in the main part, but must be modified in this respect, that pain was also experienced in the lower abdominal region in the area supplied by the ileo-hypogastric nerve, but not in the areas supplied by the obturator or crural nerves.

Centralblatt für Gynäkologie, April 21, 1900.

A Contribution to the Casuistics of Pelvic Echinococci. By Dr. Gräupner.

The Electrothermal Sound. By Dr. A. Schücking. —The author describes the construction of the instrument and explains that it is not meant for cauterization, but simply for subjecting diseased passages to the influence of heat. He has used it for about a year with excellent results in amenorrhœa, endometritis, cervical catarrh, and erosions, but these affections do not constitute the entire field of its usefulness; in urethral gonorrhœa in men it may be employed with good results. An incandescent spiral wire in the interior of the instrument furnishes the heat.

Centralblatt für innere Medicin, April 21, 1900.

On the Intervals of Feeding in Nurslings. By Dr. Arthur Keller.—Observations in the children's clinic of the University of Breslau have convinced the author that a child needs to be suckled only five times in twenty-four hours, whether it is sick or well. In the old books, he remarks, intervals of two hours between feedings were directed, but those of recent years give the proper frequency of feeding as once in three hours. This rule, he says, is generally upheld in theory, but is not sufficiently insisted upon in practice.

Berliner klinische Wochenschrift, April 16, 1900.

Cell Division.—Dr. Walther Flemming, in an exhaustive historical review of the work done on cell division during the nineteenth century, concludes that, despite the advances made in technical procedures, our present knowledge is only that the usual cell division is by mitosis, although the cell may divide by simple fission without the elaborate process of mitotic change. We know no more, however, of the significance of the metamorphoses in the cell prior to and during its mitosis than we do of the physiology of the cell.

Experiences in the Sanatorium in Grabowsee.—Dr. Karl Brandenburg emphasizes the importance of minute examination, especially of the apices, in cases of suspected pulmonary tuberculosis. It is only by the recognition of the early forms of the disease that its course can be successfully checked.

New Electric Ophthalmometer. By Dr. Hugo Wolff.

Selected Points of Diagnosis and Treatment of Pulmonary Tuberculosis. (Conclusion.)—Dr. H. Senator recommends absolute mental and physical rest in case of hæmoptysis, the restriction of the diet to fluids, an ice-bag over the chest, and, if it seems necessary for the purpose of giving something to allay the patient's nervousness, the administration of some simple acid. He has little faith in ergot as a constrictor of the pulmonary vessels in severe bleeding, and in a minor hæmoptysis its use is not necessary. He places more reliance in hydrastis or hamamelis, and prefers stypticin to any of these. Lead acetate he has found useful, but its administration must not be long continued; for, although it is supposed to aid the coagulability of the blood, it may upset the digestion. Gelatin may be employed as follows: Fifteen or twenty grains are boiled in half an ounce of water, sugar or some flavoring extract is added, and a tablespoonful is given repeatedly after warming. Morphine is given to reduce the excitement and coughing and to secure sleep. In prolonged or very severe hæmoptysis, the author advises auto-infusion by bandaging the extremities, and the inhalation of astringent substances—tannin, alum, or chloride of iron—although he does not regard the latter procedure as of much value.

For the febrile movement, Senator employs the usual antipyretic drugs. If the fever lasts for the entire day, he gives a tablespoonful hourly of fifteen to twenty-five grains of pyramidon dissolved in half an ounce of sweetened water, together with sponge baths of menthol dissolved in spirits of camphor (one part to twenty-five). The external use of guaiacol is also advised. For night sweats, he recommends painting the back and sides of the chest with a twenty-per-cent. solution of formalin, inclosing the parts in cotton.

Unusual Case of Acute Infectious Anterior Poliomyelitis in an Adult.—Dr. Karl Gumpertz reports such a case, in which the disease seemingly originated as a sequel to typhoid fever.

Wiener medizinische Blätter, April 19, 1900.

Gastro-intestinal Auto-intoxication in Nervous Diseases.—Dr. Otto Kauffmann says that a certain number of nervous disturbances and organic nervous diseases can be explained by gastro-intestinal intoxication. The presence of indican in the urine is so variable that no reliance can be placed upon its discovery, and indol itself may not be formed even if there is a marked disturbance of the digestive processes. The entire subject must be considered only in the light of extensive clinical observation.

Surgical Treatment of Basedow's Disease.—Dr. J. Schulz continues his review of the subject and gives the histories of some personal cases.

Die medicinische Woche, April 23, 1900.

Absorption and Assimilation of Fats. By Dr. William Connstein.

German Physicians in Italy. By Dr. Eugene Cohn.

Rivista critica di clinica medica, April 14, 1900.

The Influence of Diet upon the Quantity of Ethereal Extract Obtained from the Blood. By Dr. Luigi d'Amato. (Continued, *vide* preceding issue of the *Journal.*)—The figures obtained by the writer show conclusively that an exclusive meat diet, or one composed solely of farinaceous substances, increases the amount of ethereal extract (fat) obtained from the blood. Pettenkofer and Veit have fed dogs on an abundant diet of lean meat, and have recovered from the urine and the fæces of these animals all the nitrogen that had been ingested in the meat, but they failed to recover all the carbon represented by the amount of meat ingested that was eliminated in the breath, the urine, and the fæces, and therefore, some of the proteid material must have been converted into fat and deposited in the tissues. It may seem reasonable to assume that a proteid diet is sufficient for all the needs of the body, but it must be remembered that the capacity of living on proteids alone is more pronounced in carnivorous animals than in man. In order to determine whether the proteid diet was sufficient for his dogs, and whether the surplus of fat in the body was being drawn upon and diminished, the author weighed the animals from time to time. He found that they slowly but constantly lost in weight, and hence concluded that their diet was not giving them all that the body needs. As regards the exclusive carbohydrate diet, he says that, while the amount of adipose tissue is increased by an abundant carbohydrate diet, the destruction of organic proteids that must go on in order to keep up the equilibrium of nitrogenous metabolism will ultimately result in the death of the animal.

The writer then discusses the various theories concerning the place where fats are oxidized in the body, and the manner in which the reserve of adipose tissue which is deposited in various parts is utilized by the organism for the development of energy. It is probable that the transportation of fat from the places of deposit to the places of consumption takes place through the blood current, either directly or by the lymph channels.

Biliary Pigments in the Blood and the Urobilinogenic Action of the Kidney. By Dr. Fabio Vitali.—A discussion concerning the presence of biliary pigment in the normal blood. The writer refers to his experimental work, maintains that no biliary pigments are present in the normal blood, and answers the objections of Mircoli to this statement. In the second part of the paper he disputes the objections of Silvestrini against his theory of the renal origin of urobilinuria.

Riforma medica, April 2, 3, and 4, 1900.

Concerning the Preparation of Tetanolysin. By Dr. G. Tizzoni and Dr. E. Centani.—After describing the mode of preparation of tetanolysin, the writers sum up their results in the following conclusions: 1. That both old and fresh cultures lacked all hæmatolytic properties whatever. 2. That this power appears in the precipitate which results from the addition of ammonium sulphate to the culture, and that the efficiency of the tetanolysin increases with the age of the culture. 3. That this power varies in the different specimens of precipitate without regard to the original potency or to the decomposition of tetanospasmin. 4. That the precipitate obtained from Tizzoni's cultures has from one hundred to two hundred times less hæmatolytic power than that which is obtained from the German cultures. 5. That heat and light are not favorable to the formation of tetanolysin, and a temperature of 55° C. destroys this substance. 6. That the serum of animals that had been "vaccinated" with cultures which did not contain any tetanolysin possesses very marked antilytic powers. 7. That the relation between the antilytic powers of Behring's serum against tetanus, and that of Tizzoni's serum against the same germ, is not in proportion to the lytic powers which the precipitates derived from the respective cultures exhibit.

Riforma medica, April 5, 1900.

Contribution to Blennorrhagic Psychopathies. By Dr. Francesco Cascella.—The author reports a case of a young man, aged twenty-five, who had no hereditary taint, but became infected with gonorrhœa and a few days after the attack developed began to show mental disturbances which assumed the general type of melancholia. He complained of confusion of ideas, and grew despondent, listless, etc. He had to give up the study of painting which he was pursuing at Naples, and returned home, where his condition became so alarming that he was sent to the sanitarium where the writer had him under observation. His urethritis was treated, and as the gonorrhœal process improved, his mental condition grew better until he was discharged cured three months after admission. Strange to say, the same sequence of events repeated itself a second, third, and fourth time, each successive acute attack of gonorrhœa being accompanied by severe mental disturbances which necessitated the patient's return to the sanitarium. These attacks recurred after fresh infections at intervals varying from a few months to two years. Each time his mental state became normal after the gonorrhœa disappeared. The last two attacks were accompanied by symptoms of mania rather than of melancholia. Three years have passed since the last attack, and the writer lost sight of the patient, but supposes that he profited by the experience and took care not to get another attack of gonorrhœa. He says that there can be no doubt as to the ætiologic connection between the gonorrhœal infection and the psychic symptoms; and the existence of such a relation demonstrates the significance of the infectious and toxic theory of insanity. In the present case we have to deal with a form of toxic insanity which Venturi christened "psychopathia blennorrhagica." There are numerous theories as to the pathogenesis of the mental affection. The most plausible hypothesis, in the light of our present knowledge, is that the psychic disturbances are due to the action of the toxines produced by the germs of gonorrhœa, but the whole matter is still obscure. The author does not admit that Neisser's diplococcus is the sole pathogenic agent of gonorrhœa. That insanity does not occur in all cases of gonorrhœa is due to the fact that most nervous systems are much more resistant to the action of the toxines than that of the unfortunate painter whose case is here reported. The mental disturbances can not be attributed to anxiety, because the patient knew well enough that his disease was curable after the first attack had passed away; nor were they caused by fear of the strict discipline of his family, because the patient was at the time alone in Naples and perfectly free from supervision.

Miscellaneous.

The Prognosis of Brain Syphilis.—Dr. Charles J. Aldrich (*Cleveland Medical Gazette*, April) formulates the following propositions: The general laws of prognosis in acute brain disease hold good in acute specific lesions to a limited extent only. Since we have the results of an infection to deal with that has little tendency to self-limitation, it must follow that both brain and spinal-cord lesions have a great tendency to relapse. Age, sex, social status, alcoholism, cachexia, and sexual excesses, all have vital prognostic importance. Alcohol and syphilis are the twin devils of pathology, which neither fleet-footed Mercury can overtake nor iodine exorcise. Syphilis of the nervous system as a pathological process differs in no way from syphilis elsewhere except as influenced by its histological environments. Syphilitic apoplexies are seldom rapidly fatal, and are less liable than others to be followed by permanent injury. The lesions of the nervous system produced by syphilis in the secondary, or blood, stage of the disease are far more remediable than the late lesions. To the specific endarteritis we must look for the principal cause of syphilis of the large ganglia. The prognosis of syphilis of the convexity is usually good; and in the localized convulsive seizures which are commonly termed Jacksonian epilepsy the prognosis is generally good.

Periodical Inebriety.—Dr. R. C. Remondino (*Southern California Practitioner; St. Louis Medical Gazette*, April), as the result of a careful study of many cases of periodical inebriety, has formulated the following conclusions: 1. The disease is a secondary condition due to some physical or psychical defect in the affected individual. Many of the subjects have absolutely no alcoholic desire or habit, except after the experiencing of a train of mental and physical disturbances which call loudly for stimulants. 2. A radical change of occupation, climate, or residence will often remove the cause and restore the patient to the normal. The literature on the subject is replete with instances wherein the disease was of a traumatic origin and where the removal of the cause affected a cure. 3. The periodicity may at times be due to a diathetic condition analogous to that upon which is grafted gout or rheumatism. Such cases are the more easily remedied. Persons who have hereditary tendencies to the disease, involving of necessity some settled constitutional or organic cause with attending temporary psychical derangements, are the most unmanageable. 4. There is in the majority of these cases a tendency to self-limitation of the disease at certain ages. 5. Any physical condition that tends to disturb the equanimity of the nervous system may be an occasion for this form of inebriety. There is a sexual factor affecting celibates. When this exists marriage will be of the greatest service. 6. There exists a strong racial proclivity to this form of the disease, which involves the offspring of light or ruddy-haired and blue-eyed races. Ancestral habits of deep drinking, such as were indulged in by the races in the north of Europe during their semicivilized state, have largely influenced the appearance of the disease among their progeny. 7. American climates, owing to their greater dangers and variability and other tendencies to intensify most nervous diseases, favor the development of the disease where a predisposing cause already exists. A removal to and a permanent residence in the more humid and variable climates of England or the south of France—even the climate of Italy or that of Germany—will often at once remove all possibilities of a recurrence of the disorder. 8. It is useless to attempt a moral treatment with these cases to the neglect of the physical or environing causes upon which the condition depends for its existence. When himself, the patient is fully alive to the humiliation and disgrace, as well as to the social and financial losses, that the disease entails when in its activity. He has a far stronger realization of all these than any sermonizer who has never been in his place. During the attack he is perfectly helpless and irresponsible. 9. That the disease is apt to end in habitual drunkenness by an extension of the morbid processes upon which the original disorder was based and the weakening of the mental and moral calibre of the afflicted one is undeniable. That this danger exists and that the patient may, in the end, as a result of the extension and greater wrecking powers of the disease, become an epileptic or a paretic, if not an actual lunatic, should teach us the folly of simply moralizing with such patients while we neglect the common causes of nervous diseases. 10. Occupation subjecting the afflicted one to great nervous and mental strain or shock should be carefully avoided. Public life and politics should be prohibited, as well as any position which is apt to bring the person into any prominence. The greater the evenness of the ways upon which such a life can glide the less liability to an attack or occurrence of the disease. Such a person should at no time assume the burdens of any weighty responsibility if he wishes to avoid danger. 11. Malaria, foul air, badly ventilated rooms, habitual night work, irregularity of diet or of the bowels, in fact, any blood-deteriorating condition, should be carefully avoided. Gross eating and accidental or habitual constipation, by the resulting autotoxæmia generated, will, in the end, often bring about an attack in the predisposed or develop a tendency in a favoring temperament where none previously existed. 12. For these reasons, bathing, exercise, regularity of work, added sleep, and a purge when depressed or feeling heavy, with a general strict observance of all hygienic laws, are indispensable conditions to be observed by those who are disposed to the disorder under discussion. Emotional individuals should avoid any disturbances in their sentiments, such as any excess of grief or joy; a parting from old friends, a sudden meeting after long separation, a death, birth, or marriage, are all elements that may bring on a spell by the induced psychical and physical disturbances they may engender. The victim of this diathetic disorder can not watch over himself too assiduously if he wishes to break up his predisposition to the disease.

A Case of Perforating Ulcer on the Posterior Surface of the Stomach; Operation; Recovery.—Mr. Samuel Davey, M. R. C. S., and Mr. Frederic Eve, F. R. C. S. (*Lancet*, January 20th), record the case of a woman, thirty-eight years of age, who had suffered for some time with symptoms of gastric ulcer and was seized about 11 A. M. with an acute and sudden pain in her "stomach," which she localized over the whole of the epigastric region, but stated that the pain was much worse on the left side of the abdomen, the area indicated being of about the size of one's hand and immediately over the cardiac end of the stomach. The patient was lying on the couch with the legs flexed on the abdomen; the abdominal muscles were extremely rigid, and the slightest attempt at manipulation of the abdomen caused severe pain. The extremities and the tip of the nose were quite cold and the pulse was quick and small. She had vomited twice, but blood had not been noticed. The collapse was great. A quarter of a grain of acetate of morphine was given subcutaneously. A few hours later, on Mr. Eve's arrival, a marvelous change had occurred in her condition; the pain had quite disappeared, the legs were extended, and the rigidity of the abdominal muscles had to a very great extent subsided. With the exception of some coldness of the nasal tip all the symptoms of collapse had passed away; in fact, so far had the patient recovered that she expressed herself as being perfectly comfortable. Since three o'clock the temperature had risen to 102° F. and manipulation of the abdomen could be carried out without giving rise to pain. An exploratory operation being agreed to, Mr. Eve opened the abdomen in the middle line, with an incision about five inches in length and commencing about two inches below the ensiform process. When the peritoneal cavity was freely opened a very small amount of turbid peritoneal fluid welled into the wound. The anterior surface of the stomach now presented itself, and, although a careful search was made, no perforation could be detected. On tearing through the great omentum a few recent flakes of lymph were observed adhering to the posterior surface of the stomach, near the lesser curvature. Although careful inspection was again made no perforation could be found. Mr. Eve now divided the left rectus muscle horizontally, parallel with the costal margin, in order that a better view of the stomach might be obtained. The stomach was gently drawn out of the abdomen and turned upward, when a perforation on the posterior surface close to the lesser curvature and the attachment of the lesser omentum was seen. The gastric juice welled slowly from an opening just large enough to admit an ordinary probe, and around the orifice was a disc-shaped induration of the stomach. The perforation and adjacent area were stitched with about eight Lembert's sutures so as to cause an infolding of the wall of the stomach at this part. All visible flakes of lymph were sponged away and the abdominal cavity was thoroughly washed out with boiled water. A Keith's tube was inserted in the lesser cavity of the peritonæum and the wound was closed in the usual way.

The recovery was uneventful. Mr. Eve calls special attention to the complete subsidence of symptoms after a quarter of a grain of morphine. The patient did not appear ill, had no pain, and no tenderness could be elicited even on applying firm pressure over the epigastrium. The points which, in the opinion of the authors, justified an operation were the previous definite history of ulcer of the stomach, the very typical symptoms of perforation observed by Mr. Davey, the presence of a temperature of 102° F., together with slight rigidity of the abdominal muscles, and the absence of any lesion of the thorax or elsewhere to explain the temperature and previous symptoms.

When asked to postpone operating until the following morning and to see the patient again then, Mr. Eve declined to do so on the ground that if the perforation existed the chances of recovery would be greatly discounted by the delay. The perforation was only found after minute examination. This was due to the small size and the very slight amount of fluid oozing from it. Its site was determined by a well-marked induration of the stomach wall around it and the presence of a few patches of lymph in its neighborhood. Although the opening was situated on the posterior wall close to the lesser curvature and about from an inch and a half to two inches from the cardiac orifice, there was no difficulty in exposing it or inserting the sutures. No free gas existed in the abdominal cavity. When gas is present, Mr. Eve thinks it is mainly the result of decomposition. Cases of peritonitis due to gastric ulcer are recorded in which the abdomen was full of gas, although no perforation existed.

A Peculiar Case of Puerperal Pyæmia.—Dr. J. W. Bard (*Cleveland Journal of Medicine,* March) describes a case of puerperal pyæmia with the following peculiar features: 1. The appetite and digestion remained good through the entire sickness. 2. There was almost total absence of either constipation or diarrhœa. 3. There was no swelling or tenderness of the abdomen at any time, nor any indication of affection of the liver except bronzing of the skin during the second and third weeks. 4. With the exception of an abscess on the left hip, all collections of pus have been on the right lower extremity. 5. With the exception of pain in the left thumb during the fourth week, there was no pain at any time in the left upper extremity; nor were there at any time any joint pains in the right lower extremity, the joint pains being limited to the right arm and left leg.

Compresses of Ether in Strangulated Hernia.—M. Charles Fiessinger (*Journal des praticiens,* January 20th) records a case of femoral hernia, strangulated for forty-four hours, in which the application of compresses of cotton kept moist with ether at once relieved pain and caused a general improvement. The measure was used simply as a palliative while preparing for operation, but the improvement encouraged persistence in the compresses for three quarters of an hour, when spontaneous reduction took place, notwithstanding that three attempts at taxis, together exceeding half an hour in duration, had failed before the ether was applied. In cases seen very early the author counsels a more patient trial of this method than is usually accorded to it.

Gallstones.—Dr. A. H. Cordier (*American Journal of Surgery and Gynæcology,* April), in a paper on Some Pathological and Clinical Phases of Gallstones, makes the following deductions: 1. Cholelithiasis is of frequent occurrence and usually gives rise to symptoms, either severe and manifest or obscure. 2. Cholesterine as a gallstone-producing agent must be present in an abnormal quantity. 3. Cholesterine is in a great measure a product resulting from the destruction and disintegration of the epithelium of biliary ducts and gall bladder. 4. Bilirubin calcium, an insoluble compound, the outgrowth of the union of bilirubin and the lime salts, forms the nucleus of almost all the stones formed in the ducts and of the majority of those formed in gall bladders. 5. Jaundice, ptomaine poisoning, and suppuration are late symptoms of cholelithiasis. 6. Dyspeptic symptoms, swarthy skin, uneasiness in the region of the gall bladder ("congestion of the liver"), and loss of weight are some of the remote and local outcomes of the presence of gallstones. 7. Inflammatory diseases of the duodenum and bile passages are the most direct causative factors in the production of gallstones. 8. Some cases get well without any assistance from the physician or surgeon, yet the progress of the cases that terminate favorably without surgery can be greatly assisted by the physician. 9. The surgery is especially difficult and the inexperienced should not undertake to do it. 10. A ball-valve stone usually continues giving rise to symptoms until removed by surgery. 11. Stones in the gall bladder producing septic symptoms should be removed.

Salol in Small-pox.—Dr. Charles Begg (*British Medical Journal,* March 3d) recently read a paper before the Edinburgh Medico-chirurgical Society relating his experience in China of the use of salol in small-pox. An observation he made during the progress of a case of intestinal trouble led him to believe that it might be useful in quite another class of cases. His patient was taking four powders a day, each containing fifteen grains of salol. They produced a condition of slight mental depression, but the important point was that, although when in health he was specially liable to severe irritation from mosquito bites, he now suffered no discomfort from their attacks, and hardly noticed their attentions. This was not due to the mental condition. The puncture from the bite was plainly visible, with a total absence of the characteristic reaction, neither swelling, heat, nor irritation being present.

This observation was followed up by giving the drug freely in cases of irritable skin diseases—acute eczema, prurigo, etc.—of which so many cases were seen in the tropics. In these cases his belief in the power of the drug was confirmed. Then, naturally, he thought of small-pox, and on trying it obtained the following remarkable results: First, it kept the patient free from all sense of irritation, without the slightest desire to scratch. Those who knew anything of small-pox cases would at once see the great gain to the patient by preventing exhaustion from sleepless nights and drain to the system from weeping vesicles and pustules torn by scratching, avoiding danger to the eyes from soiled fingers, conserving energy for the most trying time of the disease—namely, the convalescence. In the second place almost all the vesicles terminated as vesicles, and the stage of maturation was absent except in a few isolated vesicles, which matured in the usual way. In his last case, an Englishman, aged sixty, with confluent small-pox, only two groups of vesicles, one on either upper arm, matured. They did so with perhaps greater energy than usual, taking on more the character of abscesses. In all the other vesicles the lymph dried up, and this was an end of them. The relief to itching was most marked, and could be demonstrated to depend on the drug, returning at once on the dose being reduced. Dr. Begg had not observed any evil effects from a daily dose of one drachm continued for long periods, and the mental depression quickly passed off with discontinuance of the drug, nor did it always appear in any marked degree. Salol was accused of having caused death from a hundred and twenty grains given during eight hours, but, as the death took place four days after administration one would like to know more particulars. Salol was said to be of slow excretion, but was admitted to be quickly decomposed into its component parts by the whole digestive tract except the stomach. Both the phenol and the salicylic acid were found abundantly in the urine, which became dark, but a large quantity must be given off by lungs and skin, because the characteristic sweet, fruity odor was very quickly perceptible in the patient's room, and was more pronounced than in the case of any other drug he knew. In acting as an intestinal disinfectant it was acting, of course, quite outside the body, but the marked affinity it showed for elimination by lungs and skin would explain the above-noted results of clinical observation by allowing it to act directly on the nerve terminals, and to reach the vesicles more surely than could be done by hypodermic needle, a treatment long ago suggested, in the case of abscesses, with carbolic. Dr. Begg had just found that salophen had been reported in the medical papers for 1897 as of use in pruritus, which would go to confirm his observations. Salophen was introduced to replace salol on account of the ill effects thought to result from the elimination of phenol. It was said quickly to remove the pain and swelling in acute rheumatism, but did not prevent relapses. Dr. Begg hoped that those who had the opportunity would not fail to bring small-pox patients early and fully under the influence of this drug, in order that they might see if the results obtained in China were confirmed here. He knew of no reason why it should not be so, for it was during the cool season in China that the disease showed itself. Still, there was always the charge to be met, namely, that one had perhaps been dealing with a milder type of the disease, or that the drug had been helped in its action by climate, just as in the case of sprue. Until he successfully treated cases from India it was doubted whether the disease as seen in China was at best more than a mild form.

The Internal Treatment of Cystitis.—Dr. Burnside Foster (*St. Paul Medical Journal*, February), in a recent communication to the Ramsy County Medical Society, said that when the urine was already alkaline, either ammoniacal from decomposition or because of the presence in it of a fixed alkali, the administration of alkalies would make matters worse. When, however, the urine was highly acid, alkalies were indicated, of which the most useful was liquor potassæ. It might be administered well diluted and mixed with a little mucilage. A convenient formula was:

℞ Liquor potassæ	2 drachms;
Mucilage of acacia	1 ounce;
Tincture of hyoscyamus to....	4 ounces.

M. S.: One teaspoonful every four hours.

If the urine was already alkaline, and particularly if it was ammoniacal, we should prescribe urinary antiseptics, as salol, boric acid, or benzoate of sodium. Perhaps the most reliable urinary antiseptic at our disposal was urotropin, and in cases of bacteriuria and in some cases of ammoniacal decomposition of the urine its action was rapid and certain.

Complete Anuria without Uræmia.—Rénon (*Giornale internazionale delle scienze mediche,* February 28th) reported to a recent meeting of the Société médicale des hôpitaux a case of complete anuria lasting seven days and terminating fatally, but without any uræmic accidents. The patient was an old man, aged sixty-nine, affected with right hemplegia with secondary contraction and impairment of his faculties. His arteries were atheromatous, the heart enlarged, and the aortic orifice dilated. After some wandering pains in the right lumbar region, the patient presented complete anuria without uræmic symptoms, and died with signs of pseudo-bulbar paralysis on the third day of a second crisis of anuria. At the autopsy the kidneys were found enlarged, filled with lithic-acid calculi, the liver was cirrhotic, there was hypertrophy of the heart with atheroma of the mitral and aortic valves, and two foci of cerebral softening, the one in the left hemisphere, the other, smaller one, in the protuberance. In spite of the existence of all these lesions the patient resisted his anuria for seven days without displaying the least disturbance. This case lends support to Widal's view as to the complex nature of the factors of uræmia.

The Relation between Anæsthetics and Insanity.—Dr. G. H. Savage, physician to and lecturer on mental diseases, Guy's Hospital (*Clinical Journal,* April 11th), concludes an article on this subject as follows: "To sum up, then, an anæsthetic may cause insanity; it may relieve for a time in a few maniacal cases; it may be given to the insane with impunity, as a rule, when operations or examinations are necessary; but there is danger it may lead to a fresh attack of insanity if it is given to patients who have had previous attacks of insanity, and to those who are subject to recurrent insanity of any form."

Letters to the Editor.

ANTITOXINE AND THE DIPHTHERIA DEATH-RATE IN NEW YORK.

32 East Fifty-third Street,
New York, *April 28, 1900.*

To the Editor of the New York Medical Journal:

Sir: Dr. J. Edward Herman, in the *Journal* of April 28, 1900, after referring to a recent article by myself, states that "the true death-rate (*of diphtheria*) for the entire city of New York for 1899 was probably more than twenty per cent."

During 1899 there were in the entire city of New York 11,550 cases of diphtheria, with 1,925 deaths; a mortality of only 16.6 per cent. These figures include the boroughs of Manhattan, the Bronx, Brooklyn, Queens, and Richmond. Antitoxine is less used in Brooklyn than in any other borough of this city, the adherents to the views of Dr. Herman being possibly more numerous there. Yet in Brooklyn there were 2,894 cases of diphtheria during 1899, with 744 deaths, giving a death-rate of 25.7 per cent. In the borough of Manhattan, where antitoxine is being more widely used every day, out of 7,612 cases in 1899, only 960 proved fatal, giving a death-rate of 12.6 per cent., just fifty per cent. less than that in Brooklyn. These are the official figures of the health department of this city, and include all cases of the disease, regardless of the mode of treatment. J. S. Billings, Jr., M. D.

LARYNGEAL SPASM IN MEASLES.

Louisburg, N. C., *April 30, 1900.*

To the Editor of the New York Medical Journal:

Sir: Mention made by Dr. Emilio Cioffi recently of the vagus nerve in relation to malignant measles leads me to write of the following experience as met with in the treatment of four cases of measles. These were severe, but not of the malignant type, and in each, while fever and rash were at their height, my attention was called to a rather peculiar and unlooked-for symptom, expressed by the patient as a "choking feeling," so alarming and distressing to one as to require morphine hypodermically to relieve the spasm. In the same case there was marked arrhythmia in the heart's action, lasting two days. I was satisfied that no condition of true croup existed, and that the trouble lay in some temporary nervous derangement. I was and am inclined to attribute the condition to a spasm of the laryngeal muscles. If so, since the pneumogastric nerve, through its recurrent laryngeal branches, furnishes the motor supply to the larynx, it substantiates Dr. Cioffi's view that the toxines of measles have a selective effect upon the vagus nerve (as supposed to have been the exciting cause of the laryngeal spasm in question).

My investigation of literature on the subject (though not complete) has shown no mention of the symptom alluded to above.

Thomas W. Davis, M. D.

BOOKS, ETC., RECEIVED.

The Pathology and Surgical Treatment of Tumors. By N. Senn, M. D., Ph. D., LL. D., Professor of Surgery, Rush Medical College, Chicago, etc. Second Edition, revised. Illustrated by Four Hundred and Seventy-eight Engravings and Twelve Full-page Plates in Colors. Philadelphia: W. B. Saunders, 1900. Pp. 5 to 718. [Price, $5.]

Essentials of Diagnosis. Arranged in the Form of Questions and Answers, prepared especially for Students of Medicine. By Solomon Solis-Cohen, M. D., Professor of Clinical Medicine and Therapeutics in the Philadelphia Polyclinic, etc., and Augustus A. Eshner, M. D., Professor of Clinical Medicine in the Philadelphia Polyclinic, etc. Illustrated. Second Edition, revised and enlarged. Philadelphia: W. B. Saunders, 1900. Pp. 5 to 417. [Price, $1.] [*Saunders's Question Compends, No. 17.*]

A Digest of External Therapeutics. With Numerous Formulæ arranged for Reference. By Egbert Guernsey Rankin, A. M., M. D., Physician to the Metropolitan Hospital, Department of Public Charities, New York. Second Edition, revised and enlarged. New York: Boericke and Runyon Company, 1900. Pp. viii–754. [Price, $3.50.]

A Handbook for Nurses. By J. K. Watson, M. D. Edin., Assistant House Surgeon, Sheffield Royal Infirmary and Sheffield Royal Hospital, etc. American Edition under the Supervision of A. A. Stevens, A. M., M. D., Professor of Pathology in the Woman's Medical College of Pennsylvania, etc. Philadelphia: W. B. Saunders, 1900. Pp. xii–413. [Price, $1.50.]

Manuel complet de gynécologie médicale et chirurgicale. Par A. Lutaud, Professeur libre de gynécologie, etc. Nouvelle édition entièrement refondue. Contenant la technique opératoire complète et 607 figures dans le texte. Paris: A. Maloine, 1900. Pp. xxviii–712.

Leçons sur les suppurations de l'oreille moyenne et des cavités accessoires des fosses nasales et leurs complications intracraniennes. Par le Dr. Henry Luc, Ancien interne des hôpitaux de Paris. Avec 28 figures intercalées dans le texte. Paris: J.-B. Baillière et fils, 1900. Pp. x–500. [Prix, 10 fr.]

Leçons de clinique chirurgicale faites à l'Hôpital de Montpellier. Par le Dr. E. Tédenat, Professeur de clinique chirurgicale à la Faculté de médecine. No. 1. Montpellier: Coulet et fils. Paris: Masson et cie., 1900. Pp. ii–4 to 490.

Lehrbuch der klinischen Hydrotherapie. Für Studirende und Aerzte. Von Dr. Max Matthes, a. o. Professor und Direktor der medizinischen Policlinik an der Universität Jena. Mit Beiträgen von Stabsarzt Dr. Paul Cammert, Privatdocent Dr. Ernst Hertel, und Professor Dr. Felix Skutsch. Mit 55 Abbildungen im Text. Jena: Gustav Fischer, 1900. Pp. xii–410.

Das Weib in seiner geschlechtlichen Eigenart. Nach einem in Göttingen gehaltenen Vörtrage von Dr. Max Runge, Director der Universität-Frauenklinik zu Göttingen, etc. Vierte Auflage. Berlin: Julius Springer, 1900. Pp. 38.

Bulletin of the American Academy of Medicine. Volume IV. No. 6. April, 1900.

Annual Report of the Mount Sinai Hospital of the City of New York. January, 1900.

La Cheratomicosi per Aspergillus fumigatus (con una tavola). Pel Dott. Domenico Basso, Libero docent di oftalmoiatria. [Estratto dagli *Annali di ottalmologia.*]

Typhoid Fever and our Water Supply. By Edmund W. Holmes, M. D., of Philadelphia. [Reprinted from the *Pennsylvania Medical Journal.*]

Variation of Type in Diphtheria and Scarlet Fever. By Henry D. Fulton, M. D., of Pittsburgh. [Reprinted from the *Medical Council.*]

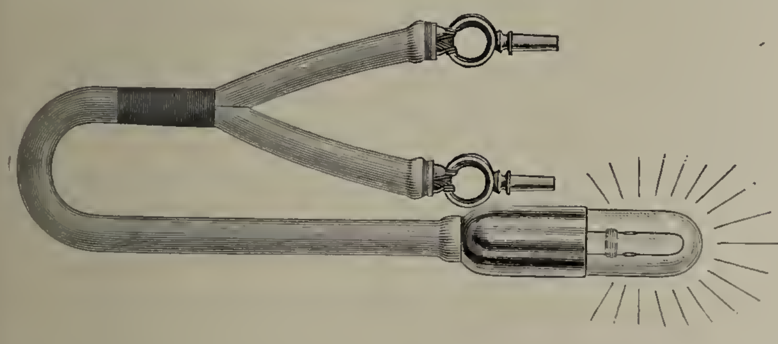
New Inventions, etc.

A NEW GASTRODIAPHANE.

By H. W. Lincoln, M. D.

Every one having to any extent investigated the diseases of the stomach according to modern methods will, I think, admit that we could get on much more smoothly, *in diagnosis at least*, were it not for the use of the stomach tube, or, as it is yet often called, "stomach pump." Try as you will, it is next to impossible to convince a young child or neurasthenic adult, or, for that matter, many who are not ordinarily nervous, of the ease and minimum of danger and discomfort attendant upon the passage of the soft, flexible tube into the stomach.

We may obtain sufficient gastric contents in most cases with the Einhorn bucket described by me in the *Medical News* for March 17, 1900. By this means also we may practically determine the emptiness or not of the fasting stomach—*i. e.*, the motile power. For approximating the size and location of the organ, however, we must have recourse to the tube, at the distal end of which is fitted an incandescent lamp (see Einhorn, *Diseases of the Stomach*, p. 35; or *Medical News*, March 17, 1900). Unlike the inventor, I have experienced considerable difficulty in the use of this gastrodiaphane, due to the large size of the tube, or the length of the silver collar and lamp, or to faulty manipulation. In persons accustomed to the passage of the tube there is no trouble, but in a new patient it is far different. In order to try to overcome the above-mentioned objections I have had the diaphane herein illustrated constructed. It consists of a semicapsule of silver into which is fitted an incandescent lamp of extra heavy glass. The capsule (silver and glass) measures eight tenths of an inch in length by a quarter of an inch in diameter. Instead of having said capsule set into the distal end of a stomach tube, which in the Einhorn lamp transmits the wires, I have had the wires inclosed in a very fine rubber tubing less than an eighth of an inch in diameter—a trifle thicker than that used to carry the intragastric electrode wires. Sixteen inches from the lamp upon the tubing it is well to have the mark indicating when the light is in the stomach. Thus far this instrument has given me great satisfaction. I have been asked if there is sufficient firmness in the wires to enable the lamp to be passed on toward the pylorus. This I can answer in the affirmative. The method of use is briefly as follows: Have the patient drink half a pint or a pint of water, and place the capsule *far back* in the mouth; one swallow usually effects passage over the larynx; then, on drawing the patient's attention in conversation or allowing him to drink a little more water, the lamp easily finds its way into the stomach. The method of illumination and examination is well known. No dark closet is necessary; simply covering the head with a dark cloth, as in photography, as mentioned by Dr. Charles Fischer, *New York Medical Journal*, December 30, 1899, enables one to obtain as good results as the darkest room. As regards the merits of this method of examination, there is, of course, diversity of opinion. I think it is, if not equal to, next to the method of inflation with the tube of which I spoke in the *Philadelphia Medical Journal*, January 30, 1900. In removing the gastrodiaphane one point should be borne in mind—viz., where the capsule reaches the larynx, *do not pull.* First instruct your patient to swallow, and at that instant draw gently, when there will be no difficulty in recovering the instrument. I have not selected my cases in the use of this lamp, except that I have embraced every opportunity to introduce it in persons never having had the tube passed. The results have been very gratifying to me. Another point of advantage lies in the fact that it may with safety be employed in cases in which the introduction of a tube would hardly be justifiable. The faucial irritation and gagging are minimal.



113 Hancock Street.

Miscellany.

A Chinese Doctor's Life is not a Happy One.—According to the *Medical Times and Register* for April, the London *Times* describes the visit of a celebrated doctor named Chen in medical attendance upon the emperor. He was commanded to appear, and 6,000 taels (about $4,500) was paid to him in advance for his traveling expenses and fee. He was told that the emperor was suffering in his organs of breathing, from feverishness, and general weakness. He was not allowed to ask his patient a question, and, though admitted twice to his presence, he was compelled to cross the room upon his knees, keeping his eyes constantly upon the floor. The empress described to the doctor the patient's symptoms, but he was not allowed to feel his pulse, though he was permitted to lay his flat hand upon the person of his sovereign. Dr. Chen is said to have remarked that, under these circumstances, one doctor was as good as another, and he petitioned that he might be allowed to return home on account of the sickness of his aged mother. This form of excuse being very common, the matter was inquired into, and Dr. Chen was able, by expending 18,000 taels, to prove that he had in fact an aged mother, and that she was sick, whereupon permission was given him to return home. His escape may have been the means of saving his life, but it cost him a good deal of money.

A Remarkable Case of "Superfœtation."—Dr. John P. Nicholson (*Medical Brief*, April) states that on the evening of February 21, 1900, he was called to see Mrs. J., aged forty-one, multipara, the mother of nine children, and found her suffering greatly with severe pains in the pelvic region, in nowise expulsive. It was plain that labor would soon set in. Examination revealed an abnormal state of affairs. The os was partly dilated, the waters had escaped, and Dr. Nicholson feared he had to deal with a cross presentation. After several hours, true labor pains came on, and with some difficulty he removed a fœtus, apparently three months old. It was seemingly healthy, not at all offensive. This occurred about 3 A. M., February 22d. At 11 A. M., after an entirely normal labor, his patient gave birth to a well-developed living child, weighing eleven pounds.

There was one large and a separate small placenta. Superfœtation, or the possibility of impregnating a female already pregnant (except at a very early period), is generally denied. In this instance we have an apparent impregnation after six months. During an experience of forty years the author has not encountered or known of a similar case.

The Dose of Orphol.—The manufacturers state that communications upon the subject received from physicians lead them to believe that orphol is often given in quantities too small to produce the best results. Bearing in mind the innocuous nature of the drug, the rapidity of peristalsis in most cases in which it is indicated, and the amount of material to be disinfected, the remedy should be given in relatively large doses (ten to fifteen grains for adults) and frequently repeated. They add that in all instances in which the fæcal discharges are unduly offensive, its use should be vigorously pushed until the stools are completely deodorized.

The British Medical Association will hold its annual meeting at Ipswich on Tuesday, Wednesday, Thursday, and Friday, July 31st to August 3d, inclusive.

The Late Dr. Edward Mulheron, the Late Dr. Charles C. Eastman, and the Late Dr. S. F. McFarland, of Broome County.—At a recent special meeting of the Medical Society of the County of Broome resolutions were adopted as follows:

"*Whereas*, In the death of Dr. Edward Mulheron this society has lost one of its active and reputable members; therefore, be it

"*Resolved*, That in respect to his memory there be entered upon the minutes of this society the following sentiment, as a slight appreciation of his worth and standing:

"A Christian doctor he,
  Whose gentle, skillful ways
Restored the sick to health,
  Or smoothed declining days;
At home, a father kind,
  To us, a faithful friend.
He lived the life we all know
  Nor faltered at its end."

"*Whereas*, This society is called upon to record the death of Charles C. Eastman, M. D., first assistant physician of the Binghamton State Hospital; one of its most respected, honored, and useful members; as an expression of our regard in the loss which we have sustained, be it

"*Resolved*, That we, the Broome County Medical Society, deeply regret the death of our esteemed colleague, and desire to express the sense of the great loss suffered by the medical profession, the community in which he lived, and this society of which he was a devoted member; and be it also

"*Resolved*, That we tender to his bereaved family our heartfelt sympathy in the irreparable loss which they have sustained."

"The Broome County Medical Society has heard with unfeigned sorrow of the death, on the 25th, of Dr. S. F. McFarland, an honored member of this society.

"We recognized in him an able physician and specialist, who had gained the confidence of the community by a prompt and faithful attention to his patients and by the sound judgment and practical skill which he exhibited in all his professional work. Plain and direct in manner, he made no use of the little artifices so often employed to win popular favor, and so void of guile was he that he had a hearty contempt for all those grosser practices which are sometimes resorted to in order to gain notoriety.

"In his intercourse with his professional brethren he was kind and affable, always treating with respect and consideration their opinions and suggestions. As a citizen he was an example of morality, temperance, and devotion to duty, and was thereby endeared to the people of the city in which he lived. He was wholly free from the greed of riches, and to the last made no distinction between the rich and the poor in the readiness with which his professional services were bestowed.

"Viewing him in all his private and public relations, his survivors can point to no more worthy exemplar than was presented in the life and character of the deceased.

"*Resolved*, That an account of this action be recorded in the minutes of this society and, as a mark of our appreciation of our deceased member, that a notice of these proceedings be published in our city papers, and that the secretary be instructed to send a copy of the foregoing minutes to the family of the late Dr. McFarland with the assurance of our heartfelt sympathy in their bereavement."

The Treatment of Exophthalmic Goître.—At a meeting of the New York Neurological Society held on April 3d Dr. B. Farquhar Curtis presented a woman, half of whose thyreoid gland he had removed for exophthalmic goître. The operation was performed in November, 1897. There had been symptoms for some time previously, and the goître was of moderate size. The eyes were quite prominent, and the pulse ranged from 120 to 130. Primary union had followed the operation, there had been no interference with the general health, and she had improved steadily since that time. The left half of the thyreoid had been removed. In less than two months after the operation she was able to resume her occupation of bookkeeper, and her pulse gradually became slower. Apparently the cure was a permanent one.

Dr. Curtis also reported a case of resection of the sympathetic nerve, and presented the patient, a woman of twenty-nine years. She had had three pregnancies, and the disease had been worse during each pregnancy. The symptoms had lasted about four years before the operation, and had been quite marked during the two years immediately preceding it. In December, 1898, there were moderate exophthalmia, a rather rapid pulse, and some nervousness. In May there was paralysis of the left vocal cord, and twelve days later Dr. Curtis operated upon her at Bellevue Hospital, removing the cervical sympathetic on each side, but leaving the goître untouched. While she was in the hospital the pulse was at no time above 106. Since the operation the nervousness had diminished, and the eyes had improved decidedly. The first effect of the operation had been a reduction of the size of the gland.

Dr. Theodore Janeway said that when the patient returned to him, last January, the thyreoid had increased in size, the pulse was about 90, aortic and systolic murmurs had developed, and she suffered a good deal from headache. Examination of the urine showed nothing abnormal.

Dr. Curtis said that he had done nine thyreoidectomies for this disease, and in none of the cases had the operation itself been complicated in any way, not even by hæmorrhage. Of the nine cases, six had ended in recovery and three fatally. The first of the fatal cases was that of a woman who had been in fair condition at the time of the operation, but became stupid immediately thereafter, and had a temperature of 107° F. before her death. This death had seemed to be chargeable to thyreoid poisoning rather than to uræmia. In the second fatal case the symptoms had been quite severe, and the exophthalmia marked. The woman did not suffer much from shock, but on the day following the operation she became very restless, and the temperature and pulse rose rapidly. She suddenly succumbed, apparently from heart failure. The third fatal case was that of a woman of twenty-three years, apparently in excellent condition, with a moderately large goître and a good deal of nervousness. She stood the operation well, but thirty hours later there was great rapidity of the pulse and respiration, together with a high temperature and great nervous excitement. A little albumin was found in the urine. In all three cases there had been nothing, from the surgical standpoint, to criticise; hence he believed the fatal results were attributable to thyreoid poisoning. He had never seen such symptoms in an ordinary case of thyreoidectomy. It was worthy of note that in one of the cases, marked by a pulse varying from 120 to 150, the pulse dropped to 100 before the patient had left the operating table, and had since then varied between 90 and 100.

Dr. Graeme M. Hammond said that the results obtained by Dr. Curtis seemed to point very strongly to the majority of these cases being the result of overactivity of the thyreoid gland. It was not improbable that some special nervous condition was the underlying cause of this overactivity of the gland. He thought one should hesitate before advising thyreoidectomy in cases of exophthalmic goître in view of a mortality of thirty-three and a third per cent. It would be interesting to know the effect of the administration of thyreoid extract in cases exhibiting these toxic symptoms after operation.

Dr. E. D. Fisher said that he had seen a patient in whom the cervical ganglia had been resected, and her general condition had certainly improved. A number of these operations had been reported, and it seemed to be a justifiable procedure. Some operators had reported the occurrence of considerable hæmorrhage at the operation, and had explained it by a marked dilatation of the blood-vessels supposed to be a part of the effect of the cervical sympathetic. In some of the cases relief had followed even removal of one ganglion. On the removal of each ganglion in the case just presented there had been noted a very transient dilatation of the pupil on that side.

Dr. W. M. Leszynsky said that the prognosis of the disease had always seemed to him to depend largely upon the financial ability of the patient. Patients of the poorer class found it desirable to submit to an operation. He had tried repeatedly, and in vain, to secure the admission of such patients to our city hospitals for a prolonged course of treatment.

Dr. Fisher thought many of these cases did not respond to even the best methods of treatment, and under the most favorable conditions.

Dr. Leszynsky contended that the early resort to proper treatment, an essential feature of which was prolonged rest, would cure very many cases.

The president, Dr. Frederick Peterson, took the same view as Dr. Leszynsky did. Both operations described by Dr. Curtis seemed to him very serious ones to undertake until safer methods of treatment had been given a fair trial.

Dr. Curtis said that in his cases the opinion had been expressed at the time that the poisonous symptoms were the result of the escape of too much thyreoid secretion into the system. It was possible that an earlier operation would eliminate this danger.

A Tumor of the Superior Parietal Convolution Accurately Localized and Removed by Operation.—At the recent meeting of the American Neurological Association a case of unusual interest from the clinical, physiological, and surgical points of view was reported. The medical history of the case was presented by Dr. Charles K. Mills, the surgical history by Dr. W. W. Keen, and a pathological report on the nature of the growth by Dr. William G. Spiller.

The patient was a man, fifty-six years old, who had had some neurasthenic and other symptoms since 1884, but who first began to have paræsthetic attacks affecting his right upper extremity in 1894. These attacks were of irregular and infrequent occurrence, and were variously described as antlike feelings and crawling, tingling, or battery sensations. After the attacks the arm usually felt somewhat heavy. He frequently complained of a feeling of pressure or discomfort in the head, and especially in the left frontoparietal region. Sometimes this feeling was described as a headache, but he never had the typical headache of brain tumor. Optic neuritis was absent from first to last, and vertigo and vomiting were so infrequent as not to call for special consideration. The patient was frequently hysterical and despondent.

About five months previous to the operation he began to show some ataxia in the right arm and later in the right leg, and when investigation of his condition was first made all forms of cutaneous sensibility were impaired, muscular sense was lost, and astereognosis was a marked symptom. As the case progressed paresis and eventually paralyis of the arm and leg supervened, this, when complete, of course masking the ataxia. The patient became affected with a disorder of speech chiefly showing itself as verbal amnesia and fatigue on reading. At one examination he showed a temporary partial right hemianopsia. Reversals of the color fields and contractions of the fields for form similar to those supposed to be typical of hysteria were present at several of the examinations. The reflexes on the ataxic and paralyzed side were somewhat exaggerated, ankle clonus being present. The patient was emotional and decidedly hysterical.

An operation, which was successfully performed by Dr. Keen on November 24th, exposed a tumor in the exact region which had been assigned as the seat of the growth—namely, the superior parietal convolution. The patient made a complete surgical recovery, and improved in all his symptoms with comparative rapidity. His speech completely returned, the paralysis of the leg and arm largely disappeared, cutaneous sensibility was in time restored, and he was so far recovered that he was able early in March to start for a short trip to Egypt. He reached this country again on April 19th, and was seen last by Dr. Mills on April 24th, just a week before the meeting of the Congress of American Physicians and Surgeons. He had regained all the movements of the extremities on the affected side, although he had not full strength in the affected limbs. The muscular sense, especially in the lower extremity, was still somewhat impaired, as would be expected from the tissue lost by the encroachment of the growth.

The operation was as follows: As the flap was not to be in the thin squamous portion of the temple, but in the parietal, which might cause great embarrassment from a very thick skull, not only by the time required to chisel through the bone, but by the difficulty of fracturing the base of the osteoplastic flap, Dr. Keen first made two trephine openings half a centimetre in diameter at the two points between which he wished to fracture the flap. The skull was found, as had been feared, unusually thick—a full centimetre. This being the case, a Gigli wire saw was passed between the two points and the bone sawed half through in order to weaken the base of the flap. A large flap, each side of which was ten centimetres long, was then made, the anterior border of it being a little in front of the fissure of Rolando, the upper border within a centimetre of the median line.

As soon as the dura was exposed at the lower portion, fluid was suspected beneath it. A dural flap was then cut, with the base upward. The tumor suddenly came into view at the anterior superior angle. It measured 5.5 centimetres by 4.5 centimetres, and weighed an ounce and three drachms after removal. It was made up of small granular masses like those of an ordinary raspberry, and was of a deep red or purple color. In order to remove the entire tumor a portion of bone was taken away with the rongeur forceps anteriorly. The tumor had begun as a subcortical mass and recently burst through the cortex. The tumor, being separated from the brain tissue, was removed, and with it a long, fingerlike cyst which extended, by measurement, ten centimetres (four inches) into the substance of the brain and contained from an ounce and a half to two ounces of fluid. The patient made a complete and very smooth recovery, the wound being entirely well by the sixth day.

Dr. Spiller made a careful microscopical investigation of the growth. He classes it as an endothelioma, and believes that it probably originated in the walls of the blood-vessels.

The Ohio Hospital for Epileptics, in Gallipolis, receives a total appropriation of $480,400 from the legislature of Ohio for 1900 and 1901. In the bill $125,000 are authorized to be spent for construction, including a general hospital for $35,000, an administration building for $50,000, and two additional residence cottages for patients for $40,000. Considerable new land will be purchased, including a large addition to the colony farm. Ample provision has been made for the continuation of scientific research in the pathological laboratory, for which a special building will be erected, along with a new morgue. A special appropriation was made to enable this laboratory to participate in the pathological exhibition of the American Medical Association. The resident patients at this institution now number 858, and the constant increase of population and the large number of applications for admission call for the additions made possible by the legislative grants.

A Presentation to Dr. Abraham Jacobi, president of the medical board of Mount Sinai Hospital, was made on Sunday, May 6th, by the medical board and other members of the staff of that institution. It took the form of a silver tankard bearing the following inscription: "To Dr. Abraham Jacobi, on the seventieth anniversary of his birthday, from the Mount Sinai Hospital, in grateful recognition of forty years of devotion and fidelity, May 6, 1900." According to the *New York Times* for May 7th, "engraved on the tankard, which stands about two feet high, are representations emblematical of Dr. Jacobi's lifework in connection with the diseases of children. On one side is shown the figure of a child, holding the rod of Æsculapius, indicating the benefit and relief from suffering Dr. Jacobi has brought to children by his life study of their ailments. The blossoms, fruit, and leaves of the poppy are also shown, representing the hidden secrets of Nature, which Science extracts for the benefit of mankind."

A Medical Exposition Excursion from Illinois, Iowa, and Missouri.—According to the *New York Times* for May 4th, about three hundred doctors and their families from Illinois, Iowa, and Missouri will visit the Paris exposition in a body, under the auspices of the Illinois Medical Association. Berths for four hundred and sixty passengers have already been secured, and it is expected that there will be at least five hundred in the party when they sail from New York on June 30th.

While pleasure is the ostensible purpose, this excursion will afford physicians the opportunity to visit the leading medical institutions and hospitals on the Continent. More time will be spent in Germany and France than in any other of the old countries, although Ireland, Scotland, England, Russia, and Italy will be visited. The passion play at Oberammergau will also be seen.

Fatal Accident to Dr. Vincent, of Peary's Expedition.—According to the *New York Times* for May 5th, Dr. Edward Everett Vincent, who was a surgeon of Lieutenant Peary's 1893 arctic expedition, was riding a bicycle along Grand River Avenue, Detroit, on May 4th, and in endeavoring to escape collision with a buggy was struck by a car, thrown under the wheels, and instantly killed. Dr. Vincent spent several years in the ice fields during the party's quest for the north pole, and made some valuable contributions to science concerning the ethnology of arctic tribes.

The Thirteenth International Medical Congress.—At a meeting of the American National Committee, held at the Cosmos Club, Washington, on May 2d, Dr. W. W. Keen, of Philadelphia, in the chair, the secretary read the minutes of the preceding meeting and reported that already about two hundred American physicians had joined the congress. It was unanimously voted that the president of the American Medico-psychological Association be added to the committee, and further voted that the organizations whose presidents compose the committee be requested to contribute to the expenses of said committee.

Original Communications.

A STUDY OF THE BLOOD IN CANCER OF THE STOMACH.

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AND

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Compared with other data, the information to be obtained from an examination of the blood in gastric cancer is of slight value. The relationship between stomach conditions and blood changes is in many points obscure. A study of the blood may be all important, especially in cases which show a marked likeness to pernicious anæmia, particularly in the early stages of the disease, when the diagnosis is so often doubtful. We shall give first the results of the blood examinations which were made in the present series of a hundred and fifty cases. The blood, as a rule, shows the characters of a secondary anæmia. Cases which present a normal or even a high blood count are usually those with obstinate vomiting, or with a constant secretion of fluid into a dilated stomach. Even with great emaciation the blood count may be high.

I. Red Corpuscles.—There were accurate counts in fifty-nine cases. The average number was 3,712,186 to the cubic millimetre—a high blood count when it is remembered how many of the cases were far advanced or cachectic. The following table gives the counts in each million, with the number of cases that came to autopsy, and the number of these showing ulceration:

Number of Corpuscles.	No. of cases.	Autopsies.	Ulceration.
Over 6,000,000	3	0	0
From 5,000,000 to 6,000,000	7	2	1
From 4,000,000 to 5,000,000	17	4	2
From 3,000,000 to 4,000,000	16	3	3
From 2,000,000 to 3,000,000	8	3	3
From 1,000,000 to 2,000,000	8	1	1
Below 1,000,000	0	0	0

Twenty-seven cases, nearly one half of the total number, have a blood count above 4,000,000 red corpuscles, and only sixteen, or twenty-seven per cent., are below 3,000,000. The highest count, 6,120,000 to the cubic millimetre, was in a much emaciated patient with a very dilated stomach. Of the cases below 2,000,000—eight in number—only two had a count below 1,500,000. The lowest count, 1,168,000 to the cubic millimetre, was taken six days before death, and the autopsy showed an ulcerated growth, involving nearly the whole of the lesser curvature, measuring nine and a half by ten centimetres. The other case, with a count of 1,200,000 to the cubic millimetre, and showing many of the features of pernicious anæmia, will be referred to again.

Improvement in the blood condition was not common. Many of the cases during their stay in the hospital held their own or gained slightly, but marked gain was not observed. This might be of assistance in a doubtful case, as rapid improvement under treatment would be against a diagnosis of gastric cancer. On the other hand, a loss in the blood condition was rarely marked. In one case the count on first admission was 4,160,000, and two months later, on readmission, the red corpuscles had fallen to 1,728,000. The hæmoglobin fell from forty-five to nineteen per cent. during the same time. The average count in twenty-one fatal cases—the last count before death being taken—was 3,230,000 to the cubic millimetre.

A study of the blood is of great importance in the diagnosis from pernicious anæmia. F. P. Henry,* who has called attention to its great value, states that he has never seen a case of stomach cancer in which the red corpuscles were below 1,500,000 to the cubic millimetre (there were two in this series), and never any case of pernicious anæmia coming to a fatal issue in which they were not below 1,000,000. He well remarks that in stomach cancer the diminution in red corpuscles does not keep pace with the cachexia, while in pernicious anæmia the cachexia holds no pace with the oligocythæmia.

Examination of Stained Specimens.—With marked anæmia the red corpuscles showed the usual characteristics—a moderate degree of variation in the size and some poikilocytosis. In the more severe cases nucleated reds were found, either normoblasts or forms midway between them and megaloblasts. In no case where stained specimens were examined is there any record of a typical megaloblast having been found—a point of importance in the diagnosis from cases of primary pernicious anæmia.

II. Hæmoglobin.—In fifty-two cases the average percentage of hæmoglobin (von Fleischl instrument) was 46.9, a low record in proportion to the average number of red corpuscles—namely, 3,712,186. These two averages give a color index of 0.63. In nearly one half of the counts the red corpuscles were 4,000,000 or over. Taking even seventy per cent. as an equivalent amount of hæmoglobin, we find that rather less than one fifth were above this figure. The following table is of interest:

Percentage of Hæmoglobin.	No. of cases.	Autopsies.	Ulceration.
80 or over	3	1	0
70 to 80	7	2	0
60 to 70	6	0	0
50 to 60	5	2	1
40 to 50	8	3	2
30 to 40	14	3	3
20 to 30	7	1	1
Below 20	2	1	1

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* *Archiv für Verdauungs-Krankheiten*, Band iv.

Of the three cases with more than eighty per cent. of hæmoglobin, two had above 5,000,000 red corpuscles; the third was only a few thousands short of the same figure.

Of the influence of ulceration of the growth on the blood condition, no conclusions can be drawn from so few cases; but it will be noticed that the cases with the lowest records of red corpuscles and hæmoglobin nearly all showed ulceration.

III. White Blood-corpuscles.—There are records in sixty-two cases. An increase in the number of leucocytes is variously estimated to occur in from one third to one half of the cases. Taking 8,000 to the cubic millimetre as the maximum of normal, there were twenty-nine cases, or nearly half, with counts below this. There were three cases with leucocytes below 4,000, the lowest count being 3,300, in a case which presented no special features except a low red count —namely, 1,678,000. The highest count, 28,000, occurred in a case with extensive secondary involvement of the liver; otherwise there were no features to account for the leucocytosis.

The accompanying table gives the number of cases with counts between certain figures, the number of autopsies, and the occurrence in these of ulceration and metastases.

Table of Leucocytes.

No. of Leucocytes.	No. of cases.	Autopsies.	Ulceration.	Metastases.
Below 5,000	14	3	2	2
5,000 to 8,000......	15	3	2	3
8,000 to 12,000.....	15	3	2	2
12,000 to 20,000....	15	4	3	4
20,000 to 30,000....	3	2	2	2

Of the cases between 5,000 and 8,000 none were over 7,500, so that this seems to form a convenient division between the normal and increased numbers.

Neither ulceration nor the presence of metastases appears to have any direct bearing on the leucocytosis, since in the cases that came to autopsy ulceration and metastases were about as frequent in cases with normal as with an increased number of leucocytes. The situation of the growth did not seem to have any influence on the number of leucocytes. The relation of the temperature and the number of leucocytes is shown in the following table:

Temperature.	Number of cases.	Number of counts.	Leucocytes below 7,500.	Leucocytes 8,000 to 12,000	Over 12,000.
Normal..........	53	20	11	5	4
One brief rise....	5	1	0	0	1
Subnormal.......	9	5	3	1	1
Slight rise, below 100°	23	8	5	3	0
About 100°.......	20	7	4	2	1
100° to 101°......	18	10	2	2	6
101° to 102°......	5	3	1	0	2
102° to 103°......	6	1	0	1	0
Over 103°........	2	1	1	0	0

From this it will be seen that both with normal and with elevated temperatures we have a normal and an increased number of leucocytes. Among a hundred and ten cases in which the temperature was not above 100° F., of forty-one cases with counts there were eighteen showing leucocytosis. Among thirty-one cases showing some fever there were, of fifteen counts, eleven showing leucocytosis. These give percentage figures of forty-four in non-febrile cases and seventy-three in febrile cases respectively as having leucocytosis, a marked difference, and speaking, to some extent, for a connection between the two conditions.

The counts given above were the average ones. In seven cases there was some change in the numbers, in all but one an increase. No definite cause could be found for this, but one of them had chills with elevation of temperature.

Stained Specimens of Leucocytes.—There were no special peculiarities other than those of a secondary anæmia. Accurate differential counts were made in twenty-two cases of the series. The results are given in tabular form, the average figure for each class being given. The classification used is that of Ehrlich, and it may be mentioned that the dividing line between the large and small mononuclears, so far as size was concerned, was the average size of the polymorphonuclear leucocytes.

Table of Differential Counts of Leucocytes.

Number of Leucocytes.	Number of cases.	Polymorphonuclears.	Small mononuclears.	Large mononuclears and transitionals.	Eosinophiles.
Under 5,000........	4	74.7	12.5	11.2	1.6
5,000 to 8,000......	6	82.7	8.4	8.2	.5
8,000 to 12,000.....	6	76.2	11.5	10.1	1.7
12,000 to 20,000.....	5	88.8	5	5.2	1
Over 20,000........	1	85	5.1	7.8	1.5
Average of total..	22	81	9	8.5	1.1
Average of cases below 8,000....	10	79.5	10	9.3	1
Average of cases over 8,000.....	12	82.2	8.2	7.8	1.3

The cases with leucocytosis show a somewhat higher percentage of the polymorphonuclear forms, but the average difference is not as great as might have been expected. The cases with counts between 12,000 and 20,000 show the largest percentage. The relative number of large mononuclear and transitional forms as compared with the small mononuclear is of interest, as some writers have thought that in carcinoma of the gastro-intestinal tract the former were increased at the expense of the small. Thus Sailer and Taylor * have published the counts in twenty-two cases, of which eight were cancer of the stomach. In the majority of these there was an increase of the large mononuclear forms over the lymphocytes, and this was most marked in the cases without leucocytosis. Of course, in a question of this kind much individual difference may exist in regard to the classification of the various forms. But the results in the present series do not support this view. It will be seen on referring to the table that the figures for the two groups of mononuclear leucocytes are fairly close together, and instead of an increase of the large forms, especially in cases without leucocytosis, the contrary was the case. Judging from this series, the difference is not marked enough to be of any value in differential diagnosis.

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* *The International Medical Magazine*, 1897.

Presence of Myelocytes.—These may be present in a very severe secondary anæmia. The statement has been made, for example, by Van Valzah and Nisbet * that myelocytes are frequently found in cancer of the stomach. In no case, however, in this series is there a note of a myelocyte having been found. There are, of course, differences of opinion as to what the term myelocyte includes. Cabot,† in an article on The Myelocyte of Ehrlich, speaks of the difficulty of giving an accurate definition to cover all the forms. Certain small neutrophiles, which appear mononuclear, are perhaps most likely to give rise to differences in blood counts by different observers. Ehrlich ‡ speaks of small forms of myelocytes with variations in size between them and an ordinary typical form. At all times one may see small polymorphonuclear neutrophile cells in which the nucleus may be tightly wound so as to be like or even assume actually a round shape. But the general structure is that of a polymorphonuclear neutrophile, and this is generally brought out by Ehrlich's triple stain or by a hæmatoxylin stain.

Digestion Leucocytosis.—Müller # and others have called attention to the possible importance of this sign in the diagnosis of stomach conditions, the absence being held to be suggestive of cancer. Without a large number of statistics, not only in cancer but in other stomach conditions, some hesitation must be expressed in regard to the value of a digestion leucocytosis, especially in view of the figures given below.

In twenty-two cases in which an accurate record was obtained, digestion leucocytosis was present in ten and absent in twelve. In all the cases considered as showing digestion leucocytosis an increase of at least one third of the number of leucocytes was given. Of the ten cases with digestion leucocytosis, the diagnosis was confirmed by autopsy in two, death occurred after a typical course in two, in two cases cancerous masses were obtained by the stomach tube, and in the remaining four cases there was a gastric tumor with other symptoms which excluded error in diagnosis. While the total number of cases is small, the large proportion with digestion leucocytosis raises doubt as to the value of its absence as a diagnostic sign of cancer.

IV. Cancer of the Stomach simulating Pernicious Anæmia.—In its onset and course in a certain number of cases carcinoma of the stomach resembles pernicious anæmia. Gradually increasing pallor with loss of weight and strength, in many instances so insidious that no definite time could be stated, was present in thirty-eight cases of our series. As in pernicious anæmia gastro-intestinal symptoms are common, the chances of error are considerable. The following cases are given in illustration:

Case I. *Shortness of Breath; Pallor; Gradual Loss in Weight; Skin of a Lemon Tint; Analysis of Gastric Contents Favorable to Diagnosis of Cancer; Examination of Blood Favorable to Cancer.*—No. 132. T. B., hospital number 19,601, male, aged forty-six years, admitted June 31, 1897, complaining of weakness and nausea. His family history was negative. He had previously had occasional attacks of dyspepsia associated with diarrhœa.

The present illness began about February with breathlessness and lassitude. About March he noticed that his skin was yellow, and this had rather increased. After this he had occasional attacks of vomiting not associated with pain. He had lost above forty pounds in weight. He had not had hæmorrhages.

Examination showed a man who looked very ill but had not lost the subcutaneous fat. The skin was of a lemon-yellow color. The gums and mucous membranes were very pale. In the right epigastrium there was tenderness on palpation and the suggestion of a mass, but nothing definite was to be made out. One small, hard gland was felt above the left clavicle.

Blood: Hæmoglobin, twenty-three per cent.; red corpuscles, 1,200,000; leucocytes, 4,000.

The differential count was polymorphonuclears, 66.2 per cent.; small mononuclears, 17.5 per cent.; large mononuclears and transitionals, 11.7 per cent., and eosinophiles, 4.5 per cent. One nucleated red corpuscle was seen in counting four hundred leucocytes, this was rather larger than a normoblast. The red cells showed a moderate amount of poikilocytosis.

A second blood count gave hæmoglobin, twenty-three per cent., and red corpuscles, 1,280,000.

Test breakfast yielded forty-five cubic centimetres of material, which showed absence of free hydrochloric acid and the presence of lactic acid.

The urine was clear; specific gravity, 1.020; no albumin, no casts.

The patient improved slightly during a short stay in the hospital, and then insisted on going home. He lived outside of Baltimore, and it has been impossible to get any trace of him.

The appearance of this patient resembled that of pernicious anæmia. The high color index of the blood was in favor of this also, but the absence of megaloblasts with anæmia of such a grade was against it. The stomach contents, the tenderness, and the suggestion of an epigastric mass, with the enlarged gland above the left clavicle, all spoke for the diagnosis of gastric cancer. Another point in favor of carcinoma was the progressive decline, which is rarely seen except in a few acute cases in pernicious anæmia, in which as a rule there are periods of improvement. In the following case, however, marked benefit followed a few weeks' treatment in the hospital and made the diagnosis of cancer doubtful.

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* *The Diseases of the Stomach*, p. 537.

† *Boston Medical and Surgical Journal*, January 2, 1896.

‡ Ehrlich. *Die Anämie.* Wien, 1898.

# *Prag. med. Woch.*, 1890, Nos. 17, 18, 19.

CASE II. *Indefinite Onset; Loss of Energy and Strength; Shortness of Breath and Increasing Pallor; Slight Stomach Symptoms; Diagnosis of Pernicious Anæmia; Gradual Improvement; Return of Stomach Symptoms; Nodular Mass in the Region of the Stomach.*—No. 146. T. B., hospital No. 21,660, male, aged forty-five years, admitted January 7, 1898, complaining of indigestion and weakness. He had been previously healthy, had smoked heavily, and used alcohol moderately. For some years he had been a commercial traveler and often got his meals irregularly.

The history of the present illness was indefinite. For above a year he had not felt as well as usual. While on the road he had one or two attacks of slight indigestion and diarrhœa. Under treatment and rest this condition rapidly improved. About March, 1897, he began to notice that he was easily tired, felt listless, and did not have any energy. There was marked shortness of breath on exertion. About May, 1897, he noticed that he was growing very pale, and this has progressed. During the summer he had some belching of gas and discomfort in the abdomen, but no pain or vomiting. At times he had fever, and during September this was high. He then spent six weeks in bed. There had been at times œdema of the ankles. In October, 1897, he consulted Dr. Osler, who found his blood count to be: Hæmoglobin, thirty per cent.; red corpuscles, 3,000,000. He was kept in bed and given arsenic. Under this treatment he improved, and by December went back to his office. But the symptoms of weakness and shortness of breath soon returned. The stomach symptoms also were rather worse, although he did not have any pain, nausea, or vomiting. He tried lavage, which improved his condition. It was noted that large amounts were always found in the stomach.

Examination showed marked pallor with a somewhat muddy, yellow tinge. It was not cachectic. The sclerotics had a pearly look. Emaciation was not marked.

In the abdomen there was slight fullness in the epigastrium, but no mass was made out. Slight peristalsis was visible only after inflation.

Test breakfast: Several were given, and the amount obtained was always large, varying from two hundred to four hundred cubic centimetres. The total acidity was usually about fifty. Free hydrochloric acid was never found, and there was a marked reaction for lactic acid.

Blood: Several examinations were made, all showing about the same result.

Hæmoglobin, twenty-five per cent.; red corpuscles, 2,840,000 to 3,048,000; leucocytes, 11,500.

The red cells in the fresh specimen showed slight poikilocytosis. In the stained specimens no nucleated reds were found. The differential count was practically normal. Digestion leucocytosis was absent.

It was learned from his physician, Dr. Harrison, of Roanoke, Virginia, that the patient died on April 22, 1898. Two days before death, after washing out the stomach, a hard tumor was felt, evidently in the stomach.

When this patient first consulted Dr. Osler in October, 1897, the history and clinical picture were those of a progressive pernicious anæmia. Still, the blood showed a relatively low hæmoglobin, and the absence of free hydrochloric and the presence of lactic acid were very suggestive of new growth. He improved, however, rapidly in the hospital, and when he left we were in doubt as to the nature of the trouble.

In connection with these cases one may be mentioned in which the question of cancer of the stomach arose, but which afterward was proved to be pernicious anæmia.

CASE III. *Insidious Onset, with Gradual Failure of Strength and Loss of Color; Stomach Symptoms; Loss of Weight; Extreme Anæmia; Cancer of the Stomach Suspected; Readmission with Profound Anæmia; Blood Characteristic of Pernicious Anæmia.*—J. K., hospital Nos. 10,136 and 10,261, admitted first on June 15, 1894, complaining of weakness and vomiting. His family and previous histories were negative.

The present illness began insidiously about five months before. He noticed that he was growing pale and that he was having pain in the back. His appetite gradually failed, and two months before vomiting began. The vomiting was generally after food. The vomitus never contained blood. He had lost over thirty pounds in weight.

Examination showed marked pallor and some emaciation. There was nothing of note found either in the thorax or abdomen. A solid body was felt below the left costal margin on deep inspiration, which was thought to be the spleen.

Test breakfast gave twenty-five cubic centimetres of yellowish fluid, neutral in reaction, and containing neither free hydrochloric acid nor lactic acid.

Blood: Hæmoglobin, twenty-seven per cent.; red corpuscles, 1,048,000; white corpuscles, 4,400.

Stained specimens did not show any nucleated reds and no apparent increase in the lymphocytes (no exact differential count was noted).

He remained in the hospital for only three days, and the diagnosis was left between gastric carcinoma and pernicious anæmia. He was readmitted two weeks later. The only new symptoms presented were œdema of the feet and increasing weakness; otherwise his condition had been much the same.

The blood examination showed on admission: Hæmoglobin, seventeen per cent.; red corpuscles, 918,000; white corpuscles, 4,800.

One week later it was: Hæmoglobin, nineteen per cent.; red corpuscles, 970,000.

Stained specimens showed a number of typical megaloblasts along with a few normoblasts. The differential count showed polymorphonuclears sixty-eight per cent. and lymphocytes twenty-nine per cent.

On August 15th the count was: Hæmoglobin, forty-eight per cent.; red corpuscles, 1,908,000. Only two nucleated reds were found, one a normoblast and the other a megaloblast. The differential count showed 34.4 per cent. of lymphocytes.

The patient was in the hospital until October 12th, when his count was: Hæmoglobin, sixty-nine per cent.; red corpuscles, 3,600,000.

Stained specimens were practically normal. There were no nucleated reds, and lymphocytes were seventeen per cent. of the leucocytes.

CASE V. *In Hospital Six Years Before with Per-*

nicious Anæmia; Gradual Recovery; Second Admission with Loss in Weight and Vomiting; Presence of a Tumor in the Epigastrium and the Characteristic Features of Cancer of the Stomach.—One case of the series—W. M., hospital No. 16,611, who was admitted on July 9, 1896, with gastric symptoms and a definite stomach tumor—had been in the hospital with pernicious anæmia six years previously. He was first admitted in 1890, when the diagnosis of pernicious anæmia was made. He then had a blood count of about 1,000,000 red corpuscles. After a stay in the hospital of eight months he was discharged with a red count of 4,900,000 and hæmoglobin ninety-two per cent. On a second admission for diarrhœa in 1892 his count was in the neighborhood of 3,000,000. His general health was good. On his last admission he complained of "sick stomach." He gave a history of having been very well since his admission in 1892. The present trouble began only about one month before admission. He thought it had been brought on by his having drunk very cold beer when he was overheated. Vomiting began, which had been nearly continuous. Examination showed a gastric tumor, absence of hydrochloric acid, and presence of lactic acid in the stomach contents.

One or two additional points of interest may be noted. In a few cases of cancer the sallow lemon tint of the skin, so characteristic of progressive pernicious anæmia, is present. In No. 33, male, aged sixty-nine, while there was marked general anæmia, there was a curious distribution of yellow pigment over the skin. No. 49, too, presented a very yellow tint of the skin, which made us for a time suspect primary anæmia. In the case of J. R. C., aged sixty-four, seen June 6, 1896, with Dr. Baden, the anæmia was profound, and the whole appearance of the patient was that of a primary anæmia, the general tint of the skin being of a lemon color. A well-marked tumor was present.

Conclusions.

1. In a doubtful case a blood count below 1,000,000 red blood-corpuscles is strongly in favor of pernicious anæmia.
2. While nucleated red blood-corpuscles are present in all very severe anæmias, megaloblasts rarely if ever occur in cancer of the stomach.
3. Neither an increase in the leucocytes nor special variations in the forms appear to be of any moment in the diagnosis of cancer of the stomach.
4. The presence or absence of digestion leucocytosis is too uncertain to be of much assistance in diagnosis.

Micro-organisms in Dental Caries.—Kenneth W. Goadby, L. D. S. (*Dental Cosmos*, April), as a result of careful experimental investigations in this subject, maintains that in dental caries (1) the liquefying organisms are mostly aerobic; (2) the acid producers are largely anaerobic; (3) the liquefying of gelatin does not imply digestion of dentine; (4) the demonstration of cladothrix in the mouth does not imply that the other organisms of the lower class of schizomycetes are simply phase forms of the higher variety.

CYSTITIS.

By HENRY H. MORTON, M. D.,

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THE POLHEMUS MEMORIAL CLINIC.

(*Concluded from page 734.*)

SYMPTOMS OF CYSTITIS.

Local Symptoms. I. *Frequent Urination.*—The inflamed and irritable condition of the bladder walls and posterior urethra render the bladder very intolerant of any tension, and after a small quantity of urine collects it is expelled. Prolonged standing or jolting increases the desire to urinate in cystitis, and particularly so when the inflammation depends upon a vesical calculus.

II. *Painful Urination.*—In acute cases the pain is more or less constantly present over the bladder and is aggravated by the act of urination. As the desire to urinate comes on, the pain increases, and as the bladder contracts the pain may be agonizing, is felt in the bladder and rectum, and radiates to the end of the penis and down the thighs. In severe cases there is a desire to urinate every few minutes, and the act of urination is accompanied by great straining or tenesmus.

In the presence of stone or posterior urethritis of gonorrhœal origin the pain is increased after the act of urination on account of the bladder walls being squeezed together by the muscular contractions.

Strangury is noted in the most severe cases only, in which the pain is continuous and where the patient makes violent and straining efforts to urinate and only expels a few drops of blood-stained urine each time.

In chronic cases but little pain is experienced, except in the instances of enlarged prostate, when the bladder is hypertrophied and very much contracted.

III. *Pyuria.*—Pus in the urine is a constant occurrence in every case of cystitis. If the urine is acid in reaction, the pus appears as a cloud distributed through the urine; but if the reaction is alkaline and ammoniacal, the pus is coagulated and takes the form of a viscid, tenacious, ropy mass at the bottom of the vessel.

IV. *Hæmaturia.*—A slight amount of bleeding occurs from a rupture of the congested capillaries in the bladder walls in all cases of cystitis.

The blood is always intimately mixed with the urine and disseminated through it.

A gush of pure blood following the act of urination is a characteristic sign of inflammation of the posterior urethra.

Constitutional Symptoms. — The constitutional symptoms in cystitis are caused by the toxines which are absorbed into the circulation, and their severity depends upon, first, the amount of the poison absorbed, and, secondly, the rapidity of its absorption.

If the bladder is able to empty itself thoroughly, absorption does not take place to any great extent, and the constitutional disturbance is not marked.

If, on the other hand, the bladder can not evacuate itself completely, or if pyogenic organisms have invaded its walls, severe constitutional disturbance follows.

In acute cystitis the bladder can usually empty itself, the temperature is not high, and the constitutional symptoms are not particularly marked, but if from some cause obstruction to the outflow of urine exists, and the protecting epithelium has been desquamated from the bladder wall, an opportunity for the absorption of toxines is afforded and the constitutional symptoms are grave.

This is particularly true in cases of mixed infection, in which the *Bacillus coli* is associated with the *Urobacillus liquefaciens septicus* or *Staphylococcus pyogenes.*

The ammonia which is formed from the decomposed urea helps to break down the protecting layer of bladder epithelium, and the erosions thus formed allow large quantities of toxines to pass rapidly into the blood circulation.

In old men, at the beginning of catheter life, an anæsthetic form of cystitis is not uncommon. It is always associated with chronic urinary fever and is often fatal.

In chronic cystitis the constitutional disturbance is slight because there is very little absorption of toxines from the bladder.

Grave symptoms occur only when an acute attack is ingrafted upon a bladder which has suffered with chronic inflammation. Some organism which is capable of decomposing urea enters and ammonia is formed. The tissues, altered by long-continued inflammation, respond violently to the irritant, the kidneys become involved, and septic poisoning follows.

Diagnosis.—The symptoms of frequent urination and pain, when accompanied by turbidity of the urine from pus and occasionally blood, are very characteristic of cystitis.

The presence of pus or blood in the urine, however, only signifies that there is a condition of suppuration somewhere along the genito-urinary tract. In chronic cases of cystitis it is always important to exclude such local conditions as stricture, stone, or enlarged prostate, and in acute cases the absence of gonorrhœal or tuberculous infection should be ascertained and the state of the prostate and seminal vesicles should always be examined.

The use of the cystoscope is not admissible in acute cases on account of its increasing the existing irritation, but in chronic cystitis it is indispensable. By its means it is possible to exclude malignant disease and tuberculosis of the bladder and calculus, and the presence or absence of an enlarged and projecting middle lobe of the prostate can be readily ascertained.

Pyelitis can at the same time be diagnosticated or excluded sometimes from the appearance of the ureteral openings, but with absolute certainty by catheterizing the ureters.

The *microscopic* examination of the urine is almost as important; to determine the character of the micro-organisms, the variety of the urinary crystals, and the form of the epithelial cells, from which some conclusion as to the involvement of the kidneys may be drawn.

Prognosis.—Acute cystitis may heal completely or it may become chronic. The cure of chronic cystitis depends entirely upon its causation. When it is due to stone, stricture, or enlarged prostate, and its cause can be removed by surgical interference, the prognosis is good. Chronic cystitis in itself rarely causes death, except in the aged and debilitated, who die from absorption of toxines and urinary fever; but if inflammation of the bladder continues for some time, the infection travels up the ureters and the kidneys become the seat of disease, which ultimately proves fatal.

Treatment of Cystitis, Preventive. — Suppurative cystitis is always caused by micro-organisms, of which the most common form is the *Bacillus coli communis,* which originates in the intestine and may make its way into the bladder through the urethra, general blood circulation, or lymphatics.

Under ordinary conditions the *Bacillus coli* is a harmless saprophyte, but diarrhœa, constipation, and other intestinal disorders convert it into an extremely virulent pyogenic germ. Hence it follows that the intestinal canal should be kept as aseptic as possible by means of calomel, purgatives, and intestinal antiseptics.

Local foci of infection, where germs can grow in the urethra and around the external genitals of the male and female, should be kept clean and aseptic.

As long as the mucous membrane lining the bladder remains unbroken and the organ is capable of being completely emptied of its contained urine, bacteria may be introduced into the bladder without harm, as they are soon flushed out by the stream of urine, and cystitis can rarely be induced unless the bladder wall has been congested and the epithelial lining eroded, or it contains residual urine caused by an enlarged prostate, stricture, or vesical atony.

On this account it is important to attend to any local diseased conditions which interfere with its proper emptying and allow residual urine to accumulate or the bladder walls to become congested and eroded.

Catheters and sounds must be sterile before using, and the external genitals should always be cleansed before instrumentation.

General Treatment of Acute Cystitis.—In all but the mildest cases the patient should be kept in bed until the severity of the symptoms is controlled and the acute stage is past.

The room should be maintained at an even temperature, for the congestion of an inflamed bladder is notably increased by chilling the surface of the body and by the muscular efforts of walking.

Purgatives.—A brisk calomel purge should always be administered at the beginning of an attack for the purpose of clearing out the intestine, which is the main source from which the *Bacillus coli* is derived. It has been shown experimentally that rectal obstruction is almost immediately followed by the appearance of enormous numbers of colon bacilli in the urine, which come either from the kidneys or directly from the rectum to the bladder, through the thin intervening walls.

During the progress of the case a daily movement of the bowels should be secured by Hunyadi or Rubinat water.

Hot Sitz baths at a temperature of 100° or 105° F. are serviceable in allaying the vesical irritability and tenesmus. The exposed part of the patient's body should be well covered with blankets while taking them.

The diet should be light and largely composed of milk. Meat should not be allowed at all, or only in small quantities. Fresh fruit may be taken in moderation. Alcohol is interdicted, unless, perhaps, in old men who need a stimulant, in which case whisky well diluted may be used.

Diluents.—Pure spring water or distilled water may be taken freely, unless the desire to urinate is very frequent and urgent.

The various infusions of triticum, buchu, etc., probably render the urine bland, simply through the water they contain.

Alkalies should never be administered as a routine measure, since in cystitis the urine is frequently alkaline from decomposition of urea into ammonia, or from a fixed alkali, and the internal use of alkalies do harm by increasing the alkalinity.

If the urine is highly acid, and deposits uric-acid crystals, bicarbonate or citrate of potassium is useful in allaying the irritation.

Opium is often required in acute cases to control the vesical tenesmus, pain, and irritability. It is given preferably in half-grain morphine suppositories, but may be used by the mouth as well.

It is unwise to inject morphine into the bladder. If the bladder mucous membrane is unbroken it will not be absorbed, and if erosions are present absorption may occur too quickly and give rise to symptoms of poisoning.

The same holds true of *cocaine*, which has little or no effect in causing local anæsthesia of the bladder, as it does in other mucous membranes, and has the great disadvantage of very materially increasing the congestion of the mucous membrane, at times sufficiently to cause retention of urine.

Balsams.—Sandalwood oil has a very beneficial action in allaying the too frequent urination and pain of cystitis in its acute stage. Later in the attack, when the secretion of pus has diminished so that the urine, instead of being turbid, presents only a fine cloudiness, the oleo-resins, such as turpentine and copaiba, cubebs, and fluid extract of Pichi, and minute doses of cantharidin, dissolved in alcohol, have an effect in quickly causing a cessation of the suppuration and a clearing up of the urine.

Urinary Antiseptics.—The antiseptics are supposed through their germicidal properties to destroy the inflammatory process at its root.

Salol may be considered as a representative of the group. It is given in doses of ten grains three times a day, and acts promptly as a destroyer of micro-organisms, through the constituent carbolic acid which, from its decomposition, is set free in the urine.

In the same way boric and benzoic acids, in doses of twenty grains a day, exercise their germicidal power, and are to be chosen when the urine is alkaline in reaction from the presence of a fixed alkali.

In the group of aniline derivatives may be mentioned methyl blue and urotropin.

Methyl blue, first recommended by Einhorn, in the quantity of fifteen grains a day in tablets or capsules, is often of service when the urine contains large quantities of bacteria. The urine, from using this drug, becomes at first greenish in color and later of an intense blue.

Urotropin, which dissolves phosphatic concretions and causes the phosphaturia to disappear with rapidity and often permanently in many cases, has proved to be a urinary antiseptic of great value, and particularly so in cases of chronic cystitis accompanied by ammoniacal decomposition of urine.

It does not destroy the micro-organisms, but prevents their growth and development.

The proper dose is twenty-four grains a day; if this is exceeded, burning in the urethra and frequent urination occur.

Local Treatment of Acute Cystitis.—Bladder washing, which is so essential in chronic cases, is entirely inadmissible in the acute forms. The only varieties of local application which can be used without doing harm are *instillations of nitrate of silver.* These can be used with advantage in the most acute cases of cystitis. The principal indications for their use are painful and frequent urination, provided the bladder is capable of emptying itself.

By means of an Ultzmann's syringe twenty drops of nitrate-of-silver solution, increasing in strength from four grains to ten grains to the ounce, are deposited every second or third day in the post urethra, from which point it flows back into the bladder and trickles over the surface of the trigone, which, together with the post urethra, are the parts most involved in the inflammatory process.

The bladder should be empty before the instillation, as the nitrate of silver is neutralized if it comes in contact with the urine. Instillations are mainly useful in acute cases, although sometimes of service in chronic cystitis.

Chronic Cystitis, General Treatment.—After the severe pain and frequent urination of the acute stage have passed off the urine still contains pus in large quantities, and has to be voided more frequently than in the normal condition.

The patient should no longer be confined to bed, but should have the benefit of the fresh air, although much walking is, of course, out of the question for him. He should be instructed to clothe the body in flannel, to wear woolen stockings and India rubbers in damp weather, and cautioned particularly to avoid exposure to a draught or dampness.

The sandalwood oil is of less use in chronic cases than in acute, but the oleo-resins are of value; and the urinary antiseptics, urotropin and salol, have here their field of greatest usefulness.

By means of general treatment but little can be accomplished, and the main reliance is the local treatment.

Local Treatment of Chronic Cystitis. I. *Indications.—Remove any local source of irritation within the bladder or any obstacle to its evacuation.*

Palliative measures for the cure of cystitis are of no avail if a calculus or tumor is allowed to remain within the bladder, or a stricture or enlarged prostate causes residual urine to accumulate.

II. *Remove the urine from the bladder and keep it empty.*

In cystitis, if the bladder is able to empty itself completely, the micro-organisms are soon swept away and the attack is over, but if residual urine is allowed to remain and become stagnant it affords an excellent culture medium for the growth of the germs.

The simplest form of drainage of the bladder is by means of a soft-rubber catheter passed once a day or oftener, as needed; but in atonic bladders, or severe cases, this is not sufficient, but the bladder *must be kept empty.*

Permanent catheterization may be employed by passing a catheter into the bladder through the urethra and tying it in so that the urine is voided as fast as it is secreted by the kidneys.

The disadvantages of this method are that after a few days it is apt to excite inflammation of the urethra, epididymitis, urinary fever, or suppression of urine.

In consequence of these drawbacks, except in very light cases of cystitis or in the presence of debility which is so great that there is danger in giving an anæsthetic, it is best to drain the bladder through a perineal or suprapubic incision.

Perineal Drainage; Technique of Operation.—A lithotomy staff is introduced into the bladder through the urethra and an incision is made through the perinæum into the membranous urethra by thrusting a long, straight bistoury three quarters of an inch in front of the anus until its point strikes the groove in the staff. A gorget is introduced into the bladder through the wound and a 30 French soft-rubber catheter carried along it till its eye lies within the cavity of the bladder.

A silk suture is then passed through the skin of the perineal wound and the catheter, in this way keeping the catheter from being forced out by the contractions of the bladder.

Instead of a rubber catheter, Watson's silver perineal drainage tube may be used in cases where the bladder is tolerant, but the metal tube is apt to excite more pain than the soft-rubber catheter.

The catheter is attached to a rubber tube whose end lies in a bottle on the floor to receive the urine.

In this way the bladder is kept entirely empty and can be thoroughly cleansed by irrigations.

The length of time during which drainage is to be maintained varies greatly, depending upon the degree of the cystitis. It should be continued until the urine is free from pus and acid in reaction and the muscular walls of the bladder have regained their tone, and this in a severe case of long standing may require some months.

Suprapubic drainage is to be preferred to drainage through the perinæum when it is continued for some length of time, as the flow of urine through the abdominal fistula can be received in a rubber bag under the patient's clothing (the Bloodgood bladder drain), and he can go about and keep dry.

The operative treatment is resorted to only in particularly severe cases, which, on account of extreme tenderness, make all local means of treatment impossible. Such instances occur in patients with contracted bladders and but little residual urine. They suffer from severe and constant pain and frequent and painful urination, with the discharge of a few drops of ammoniacal urine each time.

Again, in inveterate cases of chronic cystitis, when the bladder is atonic and perhaps sacculated, and where bladder washing and instillation have been used without effect, permanent drainage through a fistula often causes a marked improvement.

III. *Destroy micro-organisms or check their growth and remove pus and fermentation products from the bladder by means of—*

Irrigation of the Bladder.—Washing the bladder is the most efficient mode of cleansing the bladder walls of adherent pus, micro-organisms, and urinary salts.

The micro-organisms which lie beneath the mucous membrane can not be reached, but by lessening the congestion of the mucous membrane and removing decomposed urine it is put in a condition which favors its recovery.

Although the bladder can be filled by hydrostatic pressure from an irrigator, it requires a catheter to wash it out. The only suitable forms of catheter are the soft rubber and the gum elastic. They should be of large size and provided with two eyes, as the stream flowing through them stirs up the stagnant urine more effectually if it enters the bladder from two directions.

A large hard-rubber syringe holding five ounces may be used, and has the advantage that it is possible to judge of the extent to which the bladder is filled by the feeling of resistance to the inflowing stream offered by the muscular walls of the bladder. The successive jets entering also set up contractions of the muscular walls which have an influence in restoring their tone. The general custom is to use an *irrigator* raised to the height of two to four feet and attached to the catheter by a short glass connecting tube. The patient should rest upon a table or a sofa in a half-sitting position and the anterior urethra should be irrigated to cleanse it before the catheter is carried into the bladder. As soon as a sense of resistance is perceived or the patient feels pain, the inflow should be stopped, and after a short pause the fluid be allowed to flow out again, and the proceeding repeated until the solution comes away clear. The amount of fluid necessary to flow in at one time is small—from two to five ounces is enough.

Solutions for Washing the Bladder.—For simply cleansing the walls of the bladder and removing adherent pus and decomposing urine, normal salt solution, six per cent., or boric-acid water, four per cent. in strength, are well adapted to the purpose; salicylic acid, three parts to one thousand, has some effect in checking the fermentation process.

On account of the bacterial origin of the cystitis many and various antiseptics have been recommended, but on more extended trials they have proved disappointing and have fallen into disuse.

Nitrate of silver is an exception to the antiseptics just mentioned, and is the most valuable remedy we possess in suppurative cystitis. It should be used in the strength of 1 to 4,000 up to 1 to 500, beginning with the weaker and gradually increasing. The solution should be retained in the bladder two or three minutes, and then allowed to flow out again. If much pain is caused, it may be neutralized by washing afterward with salt solution. The application should be made every two to three days. Permanganate of potassium is less useful than nitrate of silver in cystitis, but is occasionally of service. In chronic cystitis, when the bladder is contracted and much pain is complained of, the distention attendant upon washing the bladder contraindicates its use, and instillations of nitrate of silver have to be substituted.

40 Schermerhorn Street, Brooklyn.

A Persian Remedy for Sterility.—According to the *Gazette hebdomadaire de médecine et de chirurgie* for April 15th, which cites as authority the *Lyon médical* of unnamed date, among the common people in Persia a sovereign remedy for sterility in women is the "swallowing of that which is removed in circumcision." The prepuce among Oriental people is an amulet.

"ÆSTIVO-AUTUMNAL FEVER" IN NEW ORLEANS, SUMMER AND AUTUMN, 1899.*

By H. A. VEAZIE, M.D.,
NEW ORLEANS.

Synonyms.—"Summer-autumn fever," "paludal fever," the prevailing fever, "new disease," pernicious malarial, malignant malarial, congestive malarial, hæmorrhagic fever, up-river yellow fever. This is a fever that prevails in nearly all parts of the world, influenced to a greater or less extent by climate, a pseudo-epidemic fever that prevails in tropical countries the year round. In semitropical and temperate climates, from about August 1st to frost, it assumes an epidemic character in some years; this depends on terrestrial and meteorological conditions. This fever belongs to the third malarial group of different authors. The blood of patients contains æstivo-autumnal parasites, which is considered as conclusive evidence of the character of the disease. This is the smallest of all the malarial parasites and forms crescentic and ovoid bodies in the red blood-corpuscles and then destroys them.

This parasite is the *Hæmatozoon falciparum* of Welsch, the crescentic body of other authors. It is the cause of the fever (in our opinion) that has been prevailing in this city. It is for you, gentlemen, to decide if we are correct, after you have heard the report of cases in Charity Hospital read by Dr. J. D. Bloom, house surgeon of the Charity Hospital of New Orleans, and of the pathological and bacteriological and microscopical work done by O. L. Pothier, pathologist and bacteriologist of the Charity Hospital; and of his assistants, Dr. S. F. Mioton and Dr. M. Couret; and the most excellent series of outside cases by Dr. G. S. Bel, most carefully observed and reported by him.

Without their work my paper would be very incomplete indeed. I have a few cases myself, but prefer not to include them—cases that without the cinchona (quinine) test of Torrii (1712), and microscopical evidence, I most certainly would have called yellow fever, and I was astounded at my inability to differentiate the diseases in many cases without them.

We are, I hope, about to decide permanently a question that has puzzled the medical profession for a couple of centuries. I believe that this fever, when it assumes malignant features, can be mistaken by the most careful and observant clinicians for yellow fever, as it has so many symptoms of that fever.† Many old authors thought the two diseases one and the same, their means of investigation being limited to taxis, inspection, and personal experience, not having the benefit of our present instruments of investigation;

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* Read (*in part*) before the Orleans Parish Medical Association, October 28, 1899.

† *United States Marine-Hospital Reports*, 1893, vol. ii, pp. 48–59.

hence the difference of opinions. I have letters from other cities which I shall read if you like. They are from Dr. Arthur V. Meigs, of Philadelphia; Dr. Henry M. Hurd, of Johns Hopkins Hospital, Baltimore; and Dr. B. E. Baker, of Charleston, South Carolina. Since reading my paper, I have received one from Dr. W. S. Thayer, of Baltimore. I here thank them for their kind replies to my letters of inquiry. I give quotations from them further on.

This fever was known to the Romans. I think the name "æstivo-autumnal" comes from them. In this city it seldom assumes an epidemic form; consequently we are not as familiar with it in that form as we should be. It has been my opinion for several months past that this is the fever prevailing here, and I so expressed myself, when one of my friends, whom you all know, said "Prove it," and that is what we are endeavoring to do.

I saw Dr. J. D. Bloom in order to get the assistance of the pathological department of the Charity Hospital, which I found was conducting experiments to the same end, and had accumulated sufficient material and facts, with Dr. G. S. Bel's cases and my own observations, to justify this paper. He also referred me to Dr. G. S. Bel a few days before Dr. Bel reported his cases, and this explains why we are all working together. I shall say this for myself and my associates: We are simply hunting for the truth as medical men; we do not wish to oppose, but to convince others that we are right in our diagnosis and opinions, and to aid us as medical men to treat the disease properly. With these remarks I preface my article.

Name and synonyms you have already in preceding notes.

Its history dates from earliest times, and it has been written on under various names since medical men began to write.

Ætiology.—It is now beyond a doubt that the cause of æstivo-autumnal fever is a parasite in the blood. The immortal Laveran in 1880, against great opposition, proved to the world that malaria was due to certain living bodies or parasites in the blood, and that there were several groups or families that produced fever of different types. Twenty or twenty-five years ago my preceptor, Professor Joseph Jones, M. D., professor of chemistry and clinical medicine in the medical department of the University of Louisiana (Tulane University now), after examining the blood on an axe, not only told that it was human blood, but that the person from whom it came was at the time suffering from malaria of a special type, afterward proved, in the trial of a criminal case which is on record in our courts.*

The æstivo-autumnal parasite constitutes the third group of most authors. It is the *Hæmatozoon falciparum* of Welsch, *Laverania malariæ* of Grassi, and various other names, such as crescentic bodies, etc., of other authors. We are simply interested in this one form: to discuss the others would take us through the whole subject of malaria, and make my paper too long. To go into its description would also take too much time. I refer you to late writings on malaria, especially those of Thayer, of Baltimore, which are quite complete and handy. I would also refer you to the works of Councilman; of Sternberg on malarial and yellow fevers; to Osler, Dock, and Hewitson; to Sajous's *Annual*, and to Gilman Thompson in Pepper's *System of Medicine.* I here give them all credit for facts which are theirs and which are used in this paper, especially William Sidney Thayer, M. D., of Baltimore; also to Passed Assistant Surgeon G. B. Young, United States Marine-Hospital Service, in report for fiscal year 1897, pages 253 to 265.

If this parasite causes the disease, how does it enter the blood? The three ways for its entrance are the respiratory tract, the digestive tract, or through the skin by insect bites. A natural belief is that it enters by the respiratory tract, but it has not been proved. Thayer and all others have failed to succeed by their experiments to produce it in this way. I can not go into details, however; these were experiments. All attempts to introduce it by the digestive tract have also failed. There were experiments, however, that were successful in introducing it hypodermically. The evidence is conclusive that it can occur in that way. Many experiments have been tried with mosquitoes which have failed, but others, after painstaking and properly conducted experiments, have succeeded most unquestionably.

I shall detail only enough to bring conviction, which I hope is not impossible, that this parasite can be introduced in this way, and that by experimental proof it is the cause of malarial fevers.

Ross and others have done much to prove this theory.* L. H. Warner † gives most interesting experiments. "He succeeded in cultivating, in properly prepared blood serum, a parasite from the albuminous poison of mosquitoes which was identical with the malarial parasite." Bignamini's article in the *Lancet*, December 3, 1898, gives much information on this subject. "It has been demonstrated by Bignamini, Bastianelli, and Grassi that there are found or are developed in the middle intestine of a certain mosquito (*Anopheles claviger*) crescents to all appearances like the æstivo-autumnal parasite." The unsuccessful experiments were made with a mosquito called the *Culex pipiens.* Positive experiments were made by Bignamini and Grassi with the following varieties of mosquitoes which abound in malarial regions. They are the *Culex penicillaria*, *Culex malariæ*, and *Anopheles claviger.* Persons who were never malarious, or rather whose blood contained no parasites, were inoculated September 26, 1898, and on November 1st the patients were seized by a chill, their blood contained æstivo-autumnal parasites, and they went through all the phases of æstivo-autumnal fever. This can be said to be a positive demonstration, a successful experiment. A word for the benefit of mosquito investigators: I never saw the larvæ of mosquitoes so plentiful as they were this year.

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* Professor Joseph Jones's *Medical and Surgical Memoirs.*

* *British Medical Journal*, January 30, 1897.

† *New York Medical Journal*, vol. lxviii, No. 24, December 10, 1898.

The period of incubation is not positively determined. Six, fourteen, or as long as thirty days is possible.

Course of Disease and Symptomatology.—The disease is usually ushered in with a chill of greater or less severity. Fever rises rapidly, 102° to as high as I have seen, 105.5°. Pulse variable—all the way from 100 to 160, according to various conditions or stages of the disease. Nausea, violent headache, backache, and pains in the limbs usher in the disease. Fever is usually gone, or very much reduced, in ten hours. Sometimes it returns if the patient is not treated, or perhaps it never returns, having been cured by the processes of Nature. If the attack is severe, the fever not leaving but assuming a somewhat continuous, "subcontinuous," or continued character, if not broken by appropriate treatment, the patient gets into a state of collapse. Jaundice with hæmorrhages,* albuminuria, black vomit, uræmia, and death occur if quinine is not properly used, the disease simulating in a most remarkable manner yellow fever.

The clinical charts vary considerably as to pulse, respiration, and temperature. The face and chest are quite red; the eyes congested; there is very little photophobia; the pupils are about normal for the amount of light present. Ophthalmoscopic examinations of the retina show it somewhat congested and the optic disc slightly. The lips are sometimes red, during chill quite blue; the gums usually normal or slightly red, except in bad cases, then spongy and bleeding. The tongue is somewhat broad, with a yellowish coating, sometimes indented. In spontaneous recoveries, or cases properly treated, it continues to get cleaner and more natural. There is tenderness over stomach, liver, and spleen. The liver is somewhat enlarged, also the spleen. Jaundice is usually noticeable after the first day. The urine is often at first increased in quantity, then diminished, and often contains albumin; in bad cases, albumin, casts, bile, and blood.

Examination of the blood taken from the lobe of the ear, or even the finger tips, shows æstivo-autumnal parasites. As has been shown by repeated examinations, they were present throughout the disease, and were usually found on the first examination this year in this city. They were found in all of Dr. Bel's cases, fifty-five in number. In every case of mine where blood was examined, in all the cases in the Charity Hospital ante mortem and post mortem, in the brain and other organs examined by Dr. O. L. Pothier, pathologist of the Charity Hospital, the organs were found actually packed with malarial parasites.

Diagnosis.—Finding the parasite in the blood is considered absolute proof of the character of the disease by authors and clinicians all over the world. Dr. Hurd, of the Johns Hopkins Hospital, writes me "it is the crucial test," and if the parasite is found it is "unquestionable," "and the disease is malarial."

You can see by his letter that he attaches very little importance to charts, pulse, respiration, or temperature. Dr. A. V. Meigs, of Philadelphia, writes me: "It has seemed to me likely that you (physicians) in the South were making yellow fever cover more than was legitimate."

This disease is so variable in different climates that its diagnosis is most difficult. Some old authors have gone so far as to state that the two diseases—malarial and yellow fever—were one and the same, but from the light of recent microscopical and bacteriological work they are different diseases. Diagnosis from simple inspection, taxis, watch, and thermometer is out of date. We must now appeal to more accurate methods, or relegate ourselves to the days of Hippocrates.*

Let us see if we can discover any differences in the symptoms. There are some, but they are totally unreliable, only giving presumptive evidence when this form of malaria assumes malignant features. Autumnal fever in very temperate climates is like our intermittents until quinine is given or spontaneous cure occurs; then the charts look a little like ours, and both resemble mild yellow fever in this climate. The periods of fever, calm, reaction, and decline are in some cases quite marked; in other cases, especially if treated with quinine, defervescence occurs so quickly that you hardly know what to think it is, except malaria. The temperature is high, and sometimes the pulse low. I have seen a case—temperature, 104.5°; pulse, 100—jaundiced in thirty-six hours. The blood showed æstivo-autumnal parasites in great quantities on one slide. This patient on my second visit complained bitterly that my remedies did no good. I was treating her for yellow fever. The blood was examined, parasite found, a solution of quinine given, and rapid improvement followed.

In autumnal fever we observe a chill, intense headache, backache, pains in bones and joints; also in yellow fever we see the same, except that the pain in the limbs is confined more to the knees and calves of the legs. The expression of the face in autumnal fever is that of pain and dull; in yellow fever, excited, anxious, and very flushed, very much like the face of an excited inebriate—a scarlatinal red extending down on thorax.

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* Hæmoglobinuria occurs only in infection with the æstivo-autumnal parasite" (Bastinelli). Thayer's review, *American Journal of the Medical Sciences.*

* W. S. Thayer's *Lectures on Malarial Fevers*, p. 3.

In autumnal fever the eyes are congested but not watery, as in yellow fever. In autumnal fever the pupils are normal, or slightly contracted, and there is very little photophobia; in yellow fever the eyes are very red, watery, the pupils contracted, and there is great photophobia. By ophthalmoscopic examination the retina is seen intensely congested, as is also the optic disc (epidemics of 1878 and 1897).

In autumnal fever the tongue is usually covered with a yellowish coating, somewhat broad and possibly indented on the sides, and is protruded rather slowly. In yellow fever the tongue is covered with a white coating, the papillæ showing through, the edges red, and the tip very red and pointed. It is protruded quickly. Often in the *later stage and during convalescence* from yellow fever the tongue is swollen and indented, as is never noticed in the beginning of the illness when the case is one of yellow fever. Sometimes in yellow fever the tongue is not coated at all, but simply very red at tip and edges, looking occasionally very much like a scarlatinal tongue.

In autumnal fever I have not noticed any sore throat (only, in one case, parotiditis). In yellow fever we frequently have an erythematous eruption, and often amygdalitis and parotiditis. In autumnal fever the gums are not extra red—slightly so; in yellow fever they are very red. In autumnal fever there is sometimes herpes labialis, but not so frequently as in other forms of malaria; in yellow fever it is not at all common.

In autumnal fever the liver and spleen are tender and enlarged; in yellow fever the liver is slightly enlarged, the spleen normal. In autumnal fever, the region of the stomach is tender and nausea is sometimes great and vomiting severe and obstinate; in yellow fever, there are great nausea and vomiting, not easily relieved, and great tenderness over the stomach. In autumnal fever, there is loss of appetite; in yellow fever, a ravenous appetite. In autumnal fever, the bowels are sometimes loose; in yellow fever, as a rule, they are hard to move, and constipation for several days is the usual history.

This is about the history of the first thirty-six or forty-eight hours of both diseases. The two diseases can simulate each other from the start. From this time on either disease may go on to recovery, especially if proper treatment is instituted, or the intermission of æstivo-autumnal fever may be mistaken for the period of calm of yellow fever, and the recurrence of a paroxysm in autumnal fever for the secondary fever of yellow fever. In both diseases we can have, during the period between the first and second paroxysms, a subnormal temperature and pulse. Yellow fever, however, very seldom goes below 99° during the period of calm, whereas autumnal fever does so quite frequently, and as low as 98.5°, and in some cases 96.5°, with a pulse of 44. These cases occurred in Baltimore, according to Thayer.

Here is where the two diseases are getting so alike. Jaundice appears earlier in most cases of autumnal fever. I have seen it on the first and second days; in yellow fever, from the third to the fifth day. In autumnal fever, albuminuria is usually slight, but in some cases high, as is seen in the cases reported by Dr. Bloom and Dr. Bel. In autumnal fever, bile is often present in the urine without albumin. In the hæmorrhagic cases we find albumin, bile, and stained casts; albumin appears at almost any time. In yellow fever, albumin and bile usually appear at about the third day of illness. The pulse and temperature are usually low in both diseases at this stage. There is more correlation of pulse and temperature in autumnal fever than in yellow fever; still, we have charts showing rising temperature and falling pulse in autumnal fever. In yellow fever, the pulse, as a rule, does not correlate, and is often irregular. In autumnal fever, the pulse will in some cases go along at about 70 or 80, the temperature rising and falling, and the pulse not changing. We have seen marked blood stasis in both diseases. Suppression of urine and retention occur in both diseases.

We have black vomit in both diseases. In Dr. Bel's practice it occurred in about ten per cent. of cases treated. Black vomit occurs in a score or more diseases, and is not pathognomonic of yellow fever, as we all know.

After all, the only reliable and safe course to pursue in diagnosis between the two diseases is to call to our aid all the instruments of precision and the history of the case, and, if we find by microscopical examination that the blood contains the malarial parasite, our diagnosis will in a few hours be made absolutely certain. With a few good doses of quinine, if it is absorbed, the temperature falls almost to normal and the patient declares he is well.

Autumnal fever attacks all ages, sexes, and races about alike, with some little difference in regard to sex and age—males more often than females, and both about the age of puberty and early maturity; natives as well as foreigners; a slight immunity for old residents. Yellow fever picks out the foreigners and residents of other States, and the colder the climate they come from the greater the severity of the disease and the mortality, especially if they are new arrivals. Of the reported cases of deaths from yellow fever up to date (October 28, 1899), much more than half are from the State of Louisiana, as will be seen by the records.

In this disease the morbid anatomy is that of malaria, and the parasites are found in the various organs of the body—liver, brain, kidneys, bone marrow, etc. If the case is one of malignant character, the person is killed so quickly that the morbid changes have not time to take place, but the parasites are found in all the most important organs. If the patient dies in coma, the brain is full of them. The parasite seems to select a certain organ, and the symptoms will point to that organ: for instance, coma, the brain; albuminuria, the kidneys; jaundice, the liver.

I shall not detain you with details of pathological, microscopical, and bacteriological investigations, for the gentlemen (Dr. J. D. Bloom and Dr. O. L. Pothier) following me have this portion of the subject more in hand. Up to the present time, no one seems to have been able to develop from the body of patients dying of this disease in this city in this year (1899) cultures like Sanarelli's; not even from the blood of living subjects have they been cultivated (Dr. G. S. Bel's cases and others).

The blood counts correspond with malaria, the corpuscles being diminished. In yellow fever they are about normal. Of one hundred and fifty-four examinations of blood in 1897 at the Yellow Fever Isolation Hospital, under the management of the Charity Hospital, of which I was visiting physician, only sixteen contained the parasites of malaria. In most of the sixteen they were found during convalescence from yellow fever, and Dr. H. P. Jones, resident physician of Isolation Hospital, thought that as the country back there was malarious they contracted it there. When we found the malarial parasite in the beginning of the illness, it was considered malarial. Dr. Jones and I then guided ourselves accordingly, and if parasites were found we unhesitatingly gave quinine, and the patients rapidly improved. In the post-mortems at Isolation Hospital in 1897, Dr. O. L. Pothier called attention to a yellowish line in the kidneys of yellow-fever cases, which has been called by Dr. H. P. Jones "Pothier's line," or sign, and it is considered quite distinctive of yellow fever by him and others, and I myself think it is characteristic of yellow fever, especially when associated with other evidence. This year it has not been found in the kidneys in cases that died at Charity Hospital.

The mortality from æstivo-autumnal fever is very small if quinine is properly given—about two per cent.; otherwise it is great—as high as "seventy-five per cent. in Algeria"; the cases going into the hæmorrhagic and other forms, especially if there is previous organic trouble.*

Complications, sequelæ, and relapses are common. Anæmia often follows, even in mild cases. Chronic kidney and liver troubles may follow, also gastric and intestinal troubles. Paralysis may occur. Retinitis and chorioiditis may occur. It is very liable to complicate pregnancy, and is often a complication in severe surgical operations. In fact, this disease can cause a host of troubles and most complicated pathological changes.

(*To be continued.*)

For Ascarides.—To destroy pinworms, the *Medical Dial* for April advises the injection *per rectum* of cod-liver oil, pure or made into an emulsion. By mixing with the yolk of an egg it is rendered non-irritating.

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* G. M. Sternberg. *Malaria and Malarial Diseases*, p. 267.

THE GENESIS OF ANTITOXINES.

By JUSTIN D. LISLE, M. D.,
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The problems suggested by recent results obtained in biology and experimental medicine are so numerous and have opened up such a large field of important work that every laboratory is striving with feverish energy to answer questions that will shed a precious light upon modern medicine. Bacteriology is contributing valuable facts every day, but it is to immunity and its laws that we must look for the guide that will conduct medicine to the dignity of a precise science. Although the body of Pasteur rests peacefully in the gilded mosaic tomb under the *Institut*, yet his work goes on, his ideas permeate every branch of experimental research in advanced medicine, and many of his dreams and those of his collaborators are realized facts of to-day. Is it to be wondered at that, when the first child lay strangling with diphtheria and was snatched safe and sound from out of the very jaws of death by an injection of antidiphtheritic serum, experimenters and physicians began to think the golden age was upon us, and that death and the grave would pass away? But the optimist is always many years in advance of the investigator, and theory travels faster than fact. Serum therapeutics can be said to have started when Richet and Héricourt observed that the blood of the dog, an animal refractory to the staphylococcus, when transfused into the veins of an animal sensitive to staphylococcic infection, conferred a partial immunity; but, if the dog had been previously vaccinated against the staphylococcus, his blood would confer a complete immunity. These experiments were performed with the blood entire, but the investigations of Bouchard and Charrin demonstrated that this immunizing property resided in the blood serum, and from this began serum therapeutics. Previous experiments in technical bacteriology revealed that the pathogenic microbes secreted or fabricated a substance that, when separated by filtration or other means from the microbe, would cause the same effects in the animal economy as the microbe itself, and that inoculation with this substance (toxine) would excite immunizing properties (antitoxine) in the animal inoculated. It was at this point that the body of experimenters began to divide into "schools"—the "chemical" and the "cellular" factions. The first question, that of immunity against the microbes themselves, being so thoroughly settled and explained by the classical experiments and theory of Metchnikoff, now gave place to a still more complicated and intricate problem, that of the toxines and antitoxines. How and from what are these antitoxines made? How does an antitoxine act upon a toxine so as to completely neutralize all its properties, an action as complete as that between an acid and an alkali? If we take a toxine, that is to say, a substance (the product of a microbe) possessing a certain definite chemical formula, but, so far, not conforming to any organic type, and inject a non-fatal dose into an animal organism, there will be found in the serum of that animal a substance that will, *in vivo* and *in vitro*, completely destroy the action or properties of the toxine employed. Without considering for the moment the origin of the antitoxine, but viewing the action of the antitoxine upon the toxine, it does at first seem to be a purely chemical phenomenon. Take a toxine of the most virulent kind and subject it to the boiling temperature, or add a proportion of certain chemicals (antiseptics), or, lastly, a ratio of antitoxine, and this toxine is converted into a body that is perfectly harmless; truly, a molecular change has taken place, at least in the first two instances, and why not in that of the third? Experimental evidence goes to prove that many of the results obtained *in vitro* do not agree with those *in vivo*. Fatal doses of tetanus toxine, when mixed *in vitro* with fresh cerebral matter, lose all their toxic properties; on the other hand, if large injections of cerebral matter are introduced into the veins of an animal, and these injections are immediately followed by the injection of a fatal dose of tetanus toxine, the animal will die with tetanus. Is not this result caused by the large mass of tetanus toxine injected at one place not being able to come in contact with sufficient cerebral matter already in the general circulation to chemically neutralize the poison before it can exercise its toxic effect? This brings us now to the consideration of two phenomena that can hardly be explained by the chemical theory—*e. g.*, natural immunity and vaccination. In both of these conditions there is no element (antitoxine) to neutralize the toxine that is afterward introduced. Nothing save cellular resistance will account for the lack of effect from the toxine. The question of the action of a toxine upon an antitoxine is not the principal subject of contention among the schools. The controversy is upon the subject of the *origin of the antitoxine*. Is the antitoxine made from the toxine, a chemical derivative, so to speak, or, in other words, is the toxine the mother of the antitoxine? Does the toxine excite the cells of some tissue of our body, or some element of the blood, to pour forth a special substance that will neutralize the effects of the excitant? It seems that the primary condition for the formation of an antitoxine is that the toxine or poison employed to excite or make the antitoxine must be extremely powerful or belong to a certain class of poisons. Mineral posisons like arsenic, and the crystalline vegetable poisons, morphine, strychnine, etc., excite no antitoxine, but abrine, ricine (colloids), snake venom, eel serum, etc., readily cause the production of an antitoxine. The nearer we approach the products secreted by the microbe the more perfect will the substance excite the antitoxine. The "chemical school," so well sustained and defended by Büchner in Germany, maintains that when "an animal organism is injected with a toxine, after a short lapse of time the toxine disappears and its place is taken by the antitoxine. This antitoxine was not in the circulation of the animal *before* the introduction of the toxine, and it was necessary for this organism to wait for this particular toxine in order to procure the special elements to make this particular antitoxine." The second item is a scholium upon the first, and indicates that "the larger the quantity of toxine injected into the animal the more antitoxine is produced." The last argument is: "When a toxine, no matter in what dose or in what way, is introduced into an animal, no immediate effect is produced. It is necessary to wait a certain period of time, the period of incubation. But during this interval of silence do not innumerable chemical changes take place before the toxine manifests its effects by the declaration of a malady, and during this time of incubation no toxine can be found in the organism? Then, is the malady due to the toxine or to the genesis of a new body formed during the period of quiescence?" The first declaration in answer to these questions is that up to this time there is no experimental evidence produced that will demonstrate the morphological element or the biological process by which the antitoxines are formed. Work along this line has made great progress, but is yet far from completion. The search is entirely opposite to ordinary investigations, for here we have a product or secretion and are looking for the organ that forms it, whereas in usual research we first have the organ and then investigate its functions and secretions. In response to the first proposition, that "an antitoxine is made from or is a derivative of the toxine," the "cellular school" suggests the consideration of the extraordinary disproportion between the amount of antitoxine produced from the toxine. A certain dose of toxine is injected into the veins of an animal and the resulting antitoxine in many cases will neutralize one hundred thousand times the same quantity of toxine. Such results are far beyond all chemical laws and reactions. Therefore, the toxine could not supply even one essential element to the antitoxine. Still another argument upon this point is illustrated by the difference between active and passive immunity. If an antitoxine, all prepared, is injected into an animal, it can confer a passive immunity for several days, or even weeks, and then gradually disappear; on the other hand, there are antitoxines that can confer an active immunity that will persist for years. These two actions could not exist if an antitoxine was nothing but the derivative of a toxine. In active immunity the antitoxine is being constantly renewed without an external supply. As fast as the antitoxine is eliminated its proportion is immediately made up. The interesting experiments of Roux and Vaillard confirm the existence of this incessant reproduction of antitoxine. An animal in whose blood there was a certain percentage of antitoxine was bled at intervals until almost the total amount of blood was drawn, but after each bleeding a few days sufficed to bring the original proportion of antitoxine back to its level. That the antitoxine is due to cellular activity is put in evidence by the experiment above and by the results obtained by Salomonsen and Madsen. These experimenters have shown that the proportion of antitoxine in the blood of an animal in which they had conferred an active immunity was greatly increased by stimulating functional activity of the cells—for example, by the administration of pilocarpine. Lastly, the theory of the production of the antitoxines from the toxines receives its final blow from the investigations of Wassermann, who found diphtheria antitoxine in perfectly healthy horses, animals that had never been inoculated or employed to produce antidiphtheritic serum. The probability that the cells, or at least certain cells, have for their function the fabrication of the antitoxines is now gaining favor. These cells, under the stimulus of different toxines, will produce different antitoxines, and the amount of antitoxine made will be in proportion to the force or prolongation of the stimulant, and not to the quantity of toxine. Certain animals, particularly of the cold-blooded type, under ordinary circumstances do not produce antitoxines—for example, enormous doses of the strongest diphtheria toxine can be injected into the circulation of an alligator, or a hundred fatal doses of tetanus toxine can be introduced into the circulation of an eel, and no effect will be observed and no antitoxine produced; for, if the blood of these animals thus injected, and which still retains the toxine unchanged, is injected into the veins of a susceptible animal, it will cause its death as promptly as after the injection of the toxine itself. These experimental facts demonstrate that a toxine in the blood of an animal that is endowed with a natural immunity or resistance undergoes no chemical changes, and that the cells of this animal, although capable of forming an antitoxine, remain insensible to the presence of the toxine. Therefore it may be concluded that the toxines, like all chemical bodies, have their affinities. They have an affinity for certain tissues of the body, but a particular affinity for their antitoxine, and, according to recent experiments, this affinity extends yet to other antitoxines. After this chemical change has taken place and this affinity satisfied, the toxine no longer exists as toxine, and the new body or compound formed possesses no toxic properties. As to the particular morphological element that is engaged in the formation of the antitoxines, experimental evidence seems to point to certain cells which under irritation or stimulation produce the antitoxic body. Exactly what these particular cells are has not yet been demonstrated, but many results point strongly toward the polynuclears; but so far the other cellular elements of the blood have not been excluded. It appears that different toxines (perhaps it would be better to say different classes of toxines, for it seems that the toxines divide themselves into classes or natural orders, apparently following their origin, like tubercle and lepra, or typhoid, colon, and yellow fever, or the pus-producing cocci) may excite different cells for the formation of their particular antitoxines. Although the antitoxine is always found in the blood, it does not necessarily mean that it is made by some cell in the blood, for, according to the studies of Pfeiffer and Manx upon the formation of cholera antitoxine, it was observed that the spleen, marrow of the bones, and lymphatics produced this antitoxine. Following these experiments come those of Wassermann upon the formation of the pneumonia antitoxine, wherein it is clearly demonstrated that this antitoxine is prepared in the bone marrow; and, lastly, the results obtained by Deutsch in typhoid fever indicate conclusively that the antitoxine of this disease is made in the lungs. Benot has shown that the injection of tetanus toxine in different organs results in entirely different effects. These last experiments naturally excite two questions. On injecting of tetanus toxine into an organ—for example, an organ that will resist the poison—is this resistance or immunity due to a fixation or chemical union of the toxine with the cellular elements of the organ, or is it due to an almost instantaneous production of a quantity of antitoxine sufficient to neutralize the tetanus toxine before it can gain access to the general system? If the cells produce the antitoxines, they in their turn have the property of playing the rôle of toxine, and, when injected into an animal of a different class than the one to which they belong, will excite the production of an antitoxine. Bordet has proved that the cellular elements of the blood, when injected into an animal organism different from the kind from which the blood is taken, will produce an antitoxine, and Metchnikoff's latest work proves that the injection of spermatozooids excites the production of an antitoxine—an antispermatozoic serum. Experiments with the different cells have resulted in the production of different antitoxines; these antitoxines only await their therapeutic investigation and application to create the cytolic branch of biology. The most prominent question now under consideration by medical philosophers is, *How* does the cell produce the antitoxine?—admitting, for the time, that the antitoxine is the product of the cell. If a cell, when properly stimulated, will produce an antitoxine, the question naturally arises, How or what is the process? A cell receives a stimulus; now, what does the cell do? According to the theory of Ehrlich, the protoplasm of each living cell is divided into a number of groups, and each group is susceptible to a different stimulus. Among these groups there is one or more which, when stimulated by a toxine, begins an internal molecular change that results in the production of the antitoxine. If the impression of the stimulus upon the cell is only slight, the effect is only molecular rearrangement and nothing is excreted; this is called vaccination, and accounts for cellular resistance; but if the stimulus is increased or is caused by another class of toxines, the process of molecular change goes on, and an antitoxine is poured into the circulation as fast as it is made. Ehrlich has given to these groups of hypothetical elements the name of "side chain," a term borrowed from modern organic chemistry, and which contributes nothing toward solving the mystery of the function of the cell in its production of the antitoxine.

PHYSICAL TRAINING IN SCHOOL AND HOME.*

By HENRY S. PETTIT, M. D.,
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That physical education is of vast importance and a necessity is, I think, realized by every one interested in educational matters. To educate is to develop physically, mentally, morally, and spiritually. A healthy condition of the body is necessary to a healthy condition of the mind.

J. J. Rousseau says: "If one wishes to work upon the understanding of a pupil, one must first work upon the forces which it is to rule. Exercise his body, render it healthy and strong, in order to be able to render it wise and reasonable; let him work, run, shout, be in constant motion; let him first be a man in animal spirits, and he will be one also in his reason."

Mind and body are intimately connected or associated, and we can not develop one at the expense of the other without sooner or later paying the penalty. The body we all know can be greatly influenced by the mind, a fact which is, I think, the basis for the operations of the so-called "faith healers" and "Christian Scientists." Indeed, every physician can recall many instances of recovery from disease which was very much hastened by the fact that the patient had full confidence in him and in his medicine; and also many cases in which recovery was only rendered possible by the strong determination of the patient.

A case occurred in my practice which to me was very amusing; it happened at a visit to a charity patient. Upon removal of the temperature thermometer from the mouth she exclaimed: "O doctor, that made me feel so much better!"

That the mind can influence the body and produce a susceptibility to disease is very true.

There are few people with weak bodies who are not frequently rendered more or less indisposed by the direct influence of the mind worrying over the bodily condition.

Even a strong body can be made indisposed temporarily by the influence of the mind, if the stimulus is sufficiently strong. A case which I have in mind occurred a few years since, the subject being a strong, healthy man, a man who is at present a physical director in a well-known athletic club in California. While in the dressing-room prior to going on the gymnasium floor a half dozen "put up a game" on the young man in question. Upon entering the gymnasium, first one and then another, at stated intervals, walked to where the subject was exercising and greeted him with a "Good afternoon. You are not looking well." The first reply was, "Never felt better in my life," but after the second person referred to his appearance he began to think that perhaps something must be the matter, and before we had finished with him admitted not feeling well, and soon after left the gymnasium indisposed.

We are all familiar with the case of the man who died of fright, having been placed on a table, blindfolded, pricked with a pin, placed in such a position that a stream of warm water was directed on the part that was pricked, and told that he was slowly bleeding to death. These, I think, are instances which prove what powerful influence the mind can exert over the body.

Mind and body can not be divorced in education.

Phthisical Hercules.—For example, a short time ago there was a man who traveled with a company of acrobats, a man who gave almost daily about ten exhibitions in which he was obliged to lift above his head and play with heavy weights that an ordinary man could not lift from the floor, to wrestle with and throw a couple of opponents, and to have a bout with single sticks. This work was so heavy and constant that the man could not take time to recuperate, and with it all his food was only good in quantity and quality when the attendance was large and the receipts were in proportion. In consequence of such a life the man began to emaciate and developed a dry, hacking cough, but until he died of pulmonary phthisis he retained the muscular strength to lift these heavy weights.

Heart Disease in Athletes.—The reason for it, I think, is because they do not "train down" as faithfully as they "trained up." Take some pugilists, for example: they train to the "pink of condition," enter the contest, and almost immediately afterward go on a debauch.

The heart, which has developed with the training, is now too large and powerful, and the excess of muscle undergoes a fatty change. After this method of training is performed a few times the heart undoubtedly becomes weaker and gradually begins to dilate. Soon we have a heart which is pathological.

The time-worn and much-used Latin maxim, "*Mens sana in corpore sano*," is as true to-day as it was in ancient times. Many people persist in confusing the words sound and strong with the ability to perform some feat of strength, thinking, because a man can lift a very heavy weight, that necessarily that man is strong. Such interpretation is, of course, wrong. By sound or strong we mean that every organ in the body is performing its function normally. The cases are not few where men have been able to lift heavy weights or to perform other feats requiring great strength in certain groups of muscles, and yet have died of consumption or heart troubles (the phthisical Hercules, or heart disease in athletes). This, I think you will agree with me, is not caused by exercise, but rather by the abuse of it, and perhaps by irregular personal habits; and no one of intelligence will deny the benefit of systematic, progressive exercise in a gymnasium because this great athlete or that pugilist died of phthisis or heart trouble any more than they will deny that food is beneficial because this, that, or the other person is made sick by overeating or undereating.

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* Read before the Brooklyn Medical Society, December, 1899.

Our bodies have been likened to a chain, which is "no stronger than its weakest link." When a strain that is too great is put on a chain, it breaks; where—at its strongest part? No; at its weakest link. And so it is with the body: the strain, which comes sooner or later, falls on the body as a whole, and the weakest part will suffer.

What we need is a sound method of education, one that recognizes the due proportion between the mental and physical development. True education should be symmetrical, each part being developed according to its intrinsic value.

It has been well said: A comparatively small and ill-made engine, worked at high pressure, will do more than a larger and well-finished one worked at low pressure. What folly is it, then, while finishing the engine, so to damage the boiler that it will not generate steam!

Education is three-sided: physical, mental, and moral. In order to produce symmetrical development we must develop each of these sides of our nature. The faculties of our school boards, especially in the larger private schools and colleges, are arranging the course of study more and more with the correct idea of "how to live"; but before a rational curriculum can be established we must determine the intrinsic values of each of these sides of our nature. Although much is being done to-day toward the improvement of the human race, it will be many years before physical training is given the position it demands.

The physical welfare of a man is of the greatest importance. Without health we are greatly handicapped in all the affairs of life, business and otherwise, and in many cases life is not only a burden to ourselves but also to our friends. Herbert Spencer says, "Educate as highly as possible, the higher the better, providing no bodily injury is entailed"; and continuing, says people are beginning to see that the first requisite to success in life is to be a good animal. The best brain is found of little service if there is not enough vital energy to work it. As vigorous health and its accompanying high spirits are larger elements of happiness than any other thing whatever, the teaching how to maintain them is a teaching that yields in moment to no other.

The great aim, then, of education, of all systems of education, should be to so develop the body as to make it a fit dwelling place for the mental and moral faculties and to establish a proper coordination between body and mind. The means at our control is the muscular system.

In this system we have about four hundred muscles; some under the control of the will, known as the voluntary muscles, and some not under control, known as the involuntary muscles. It is, of course, with the voluntary muscles that we have to deal directly. Attached to the bony parts, they help to form a powerful system of levers for the purpose of producing motion and locomotion.

It is a physiological law that the functional ability of every organ is in relation to its activity or is affected thereby. This is plainly manifest when, for instance, the muscle of the arm is rendered inactive by placing the forearm in a sling for a couple of months; when taken down, you will find the once healthy muscle has become flabby and extremely weak. And again, you have only to keep a man in bed for, say, about a month, then request him to get up and run a short distance, and you will have impressed on your mind the value of exercise for involuntary muscles; you will probably get a heart permanently weakened as a result of the experiment.

What the relative value of out-of-door exercise and exercise in a gymnasium is I shall leave you to judge.

Many people think that the love of sport and the enthusiasm of youth will furnish all the exercise necessary for health, and at the same time claim that the exercises of the gymnasium are monotonous, that they are wearisome, and that there is an absence of amusement, which is only to be found in out-of-door sport, and consider it little better than no exercise.

I do not for a moment wish any one to imagine that I consider exercise in the gymnasium an adequate substitute for play in the open air, for there is no comparison between the two. But what I desire to prove is that the gymnasium is a powerful aid as a prophylactic and as a means to raise the standard of health.

Let us consider who are the boys and girls that play out of doors. Are they the physically weak boys and girls who manifestly need the exercise, or are they the physically strong boys and girls who already enjoy good health?

Have you a physically weak son or daughter, brother or sister? If so, I shall ask you the question, Does he or she run and romp and play games? No! He does not, and why? Many times he would only be too glad to join in the sport, but finds that he can not. No one wants him in the game because he can not play well enough, or perhaps he, knowing his weakness and being afraid that he will be laughed at, does not care to join in the sport in question. Now, then, what can the gymnasium do for such a one? In the gymnasium he will be placed with a class of boys of his strength and ability, and work will be planned according to his physical need. What is the result? The weak, puny boy develops physically, and as his muscles become stronger and stronger, as they certainly will, he begins to like exercise; he is taught to play games, and then, and not until then, will his instinct and inclination impel him to play games that are essential to his bodily welfare.

Perhaps it will interest you to know how matters are conducted in the physical development department of our schools of learning.

First comes the system of measurements. The object of anthropometry is to furnish a basis that will guide in the treatment of the individual and to furnish statistics as to the ideal man. It also enables us to compare ourselves with others of our race and with all other races; to compare the different parts of the body, as the wrist with the forearm, arm, ankle, etc.; to compare the physical characteristics of the short-distance and long-distance runners, the high jumpers, wrestlers, etc.

The knowledge brought to light by these measurements and physical examination is being used in the selection of firemen and policemen and in recruiting for the army.

Now, as to the measurements that are taken: weight, stature; heights, sitting, of sternum, umbilicus, pubes, knee, etc.

Girths: Head, neck, chest normal, chest expanded, ninth rib normal, ninth rib expanded, abdomen, hips, right and left thigh, right and left knee, calf, instep, arm, elbow, forearm, wrist.

Breadth of head, neck, shoulders, nipples, waist, hips.

Depth of chest, abdomen.

Length of shoulder to elbow, elbow to tip, foot, horizontal length; strength of arms. Strength of lungs, back, legs, chest, forearm, dips, pull ups, lung capacity.

In compiling anthropometric statistics three methods are used: The average, the mean, and the percentile.

The finding of the average is the easiest method, but it has weak points; extremes affect it materially. For instance, if we want to find the average weight of six men, using the weights ninety, a hundred and fifty, a hundred and sixty, a hundred and sixty-five, a hundred and seventy, and a hundred and seventy-five, the average weight would be a hundred and fifty-one, and without the light weight it would be a hundred and sixty-four; so the light weight will affect the weight very materially. However, it may be said that when a very great number of measurements are taken the average is not so greatly affected.

The average of about fifteen thousand measurements taken and compiled by one of our college physical directors, using height as the standard for the work, would seem to show that the average college student is in height five feet seven and nine tenths inches; weight, a hundred and forty-eight pounds; girth of chest, 34.6 inches; chest full, 36.5 inches, showing an expansion of not quite two inches; right arm, ten inches; left arm, 9.9 inches—contracted, gains 1.6; right calf, 14.2 inches; left calf, 13.8 inches; right thigh, 20.6 inches; left thigh, 20.2 inches; breadth of shoulders, 16.9 inches; stretch of arms, five feet ten and one tenth inches; horizontal length, five feet eight and one tenth inches; strength of back, three hundred and one pounds; of legs, three hundred and sixty-five pounds; right forearm, 91.3 pounds; left forearm, 83.8 pounds; dips, six; pull ups, nine times; lung capacity, two hundred and thirty cubic inches. The system of finding the mean is the one most used and gives the greater satisfaction, not being affected by extremes, as is the system of averages.

A published chart (the data from which the chart was computed, according to the mean, were the measurements of men between the ages of twenty-five and thirty-five who had taken exercise for at least two years) gives some of the measurements as follows: Height, five feet seven and two tenths inches; weight, 139.5 pounds; chest contracted 34.2 inches; chest expanded, 37.5 inches; right arm, 10.7 inches; left arm, 10.7 inches; contraction shows 1.4 inch; right and left thigh, 20.2 inches; right and left calf, 13.8 inches; dips, eleven; pull ups, nine. So that in comparison of the two methods the result is about the same.

There are very few if any physical directors of schools who take all the measurements, and unless all the measurements are taken they are of little value in ascertaining the physical condition of man, for one measurement is so dependent upon another that without all a correct diagnosis is impossible. For the weight to be of value, one must know the height. For the knowledge of the height to be of value, we must also know the length of the thigh, leg, sitting height, etc. Given the girth of the head, you can tell nothing unless you also know the girth of the neck, chest, weight, etc. The muscle measurements signify nothing unless the length of the levers, size of joints, etc., are known. And so we could go through all the measurements, showing that one bears a direct relation to the other.

Besides these measurements, photography has been and is much used in anthropometry, and it is undoubtedly very useful in cases of asymmetry and various abnormities or deformities, inasmuch as it acts as a stimulus to the pupil to exercise, to correct bodily defects, which can be more readily perceived this way than by any system of charts. It also presents an easy way of comparing the different types of individuals—runners, jumpers, wrestlers, etc. One method of taking a photograph is by means of a frame with horizontal and vertical cords stretched tightly across it, the ends are an inch apart. The patient is placed in front of the frame, so that the frame is between the subject and the camera; the bony parts are marked with a pencil. The photograph will show the lines crossing the body and also the pencil marks; in this way variations of a quarter to half an inch can readily be detected. Great care must be observed in taking a photograph; the camera and subject should always be placed in the same positions and the quantity and quality of light should be about the same—so that the value of the photograph will depend largely upon the ability of the photographer.

Examination similar to the above is made of every student in our colleges. How much of this is being done in the schools I am unprepared to say. For myself I can say that at the Adelphi these examinations were conducted systematically until about three years ago. My reason for discontinuing them was: Taking all these measurements consumed a great deal of time, more time than I thought I could give, considering that so many college physical directors were doing this so faithfully and with better facilities than I possessed; and then I do not think it exactly proper to subject a pupil to a test of strength until he has had sufficient physical training to undergo it. I do not believe there is a physical director who uses these measurements as a basis for the treatment of asymmetry, and if he ever looks at his measurements again it is to compile statistics. A physical director knows where a man is lacking by observation, and does not need any system of measurements to direct him in the prescription for treatment.

(*To be concluded.*)

TRACHOMA.

By NORBURNE B. JENKINS, M. D.,
CHICAGO.

Among all the diseases of man there is no other surrounded by such an attractive mystery as classical trachoma, and there is no known disease so nearly associated with the biblical and general history of the human race.

The characteristics of trachoma are so pronounced that it serves as an excellent guide to study the less plain refraction diseases, just as small-pox, on account of its plainness, is one of the best clinical media for the study of the obscure exanthemata. What follows will not disagree with the clinical observations of the past; still, it will be radically different from the teachings in regard to the cause and treatment of trachoma.

The probable cause of uncomplicated trachoma is chronic irritation or spasm of the ciliary muscle—accommodative asthenopia. This usually comes from an error of refraction, but it may come from excessive use of the eyes, anæmia, etc. Irritation or inflammation of the conjunctiva from filth, infection, dust, cinders, etc., causes irritation or spasm of the ciliary muscle and trachoma may result. In irritation or spasm of the ciliary muscle the conjunctiva becomes hyperæmic if the eyes are used or exposed to light. From chronic hyperæmia of the conjunctiva to trachoma is a transition that even the most conservative might concede.

Trachoma is not a specifically contagious disease and may develop without infection, yet there are many organic and inorganic things that will start trachoma. The trachomatous eye usually becomes complicated by infection and parasitism. The rugæ and the raspberry-like granulations make a good home for the numerous germs and parasites which find their way to the eye. Pathologists find in the normal conjunctival sac the *Staphylococcus pyogenes albus, Staphylococcus pyogenes aureus, Micrococcus candicans, Bacillus tetani, Sarcina lutea,* etc. In health the micro-organisms, dust, etc., which get into the conjunctival sac are usually destroyed by the germ-destroying quality of the tears or washed out through the tear passages. There have been statements of isolation of a specific microbe in trachoma, but the discoverers have failed to agree on any germ. Many micro-organisms are found in trachomatous eyes.

Trachoma often appears in several members of the same family because its chief cause, ametropia, is hereditary. Irritation or spasm of the ciliary muscle from ametropia frequently affects an entire family. So strong is heredity in this that a complicated ametropia in its every detail may be transmitted by a mother to her entire offspring. Irritation or spasm of the ciliary muscle is sometimes caused by low degrees of ametropia. Astigmatism of 0.5 D. or more is present in about sixty per cent. of civilized persons. A difference of 0.25 D. or more in the refraction of the two eyes, a frequent cause of irritation or spasm of the ciliary muscle, exists in about fifty per cent. Most persons with astigmatism or myopia have eyes not exactly alike in their refraction.

Among the ill-fed in barracks, boarding schools, tenements, prisons, etc., the necessaries of health are usually lacking, the eyes are frequently used to excess, and conjunctival disease from uncleanliness often prevails—conditions favoring irritation or spasm of the ciliary muscle, conjunctival irritation and inflammation, and trachoma.

There is more or less blepharospasm in trachoma or in any irritation or inflammation of the conjunctiva, and also in any irritation or spasm of the ciliary muscle. Blepharospasm is probably a factor in trachoma. It causes friction and congestion to the eye and its appendages.

Chronic conjunctivitis, follicular conjunctivitis, papillary trachoma, and granular trachoma may be but degrees of development of trachoma.

Perfect rest will usually give relief to trachomatous eyes. This may be had by instillations of atropine, together with protection of both eyes from light and use by bandages, cataract shields, etc., put on as after a major operation on the eyeball. Before bandaging, a weak iodoform ointment may be put in the eyes and on the lids. At night these blinds are removed and the patient is kept in an absolutely dark room. No ray of light should enter the eyes. Uncomplicated trachoma may in time be cured by this treatment, which will be found difficult to enforce except in hospital.

Proper glasses, in the writer's limited observation, cure simple trachoma without other treatment, but, if there is much organic destruction, of course they can have little if any curative effect. Testing the eyes for glasses is probably the most complicated and important and the least understood branch of ophthalmology. Until the patient is properly fitted with glasses perfect rest must be depended upon.

Massage is beneficial and may be practised every week or so. The granulations are rubbed lightly with a strabismus hook. In the worst cases, if cocaine is used, there is little pain and only enough blood to tinge the tears. Trachoma forceps destroy valuable tissue and are painful.

If the trachomatous eye is infected with purulent disease, this should be under control before treatment of the trachoma is begun.*

In some cases dark glasses may be a benefit. Most of those in the shops have minus foci, cause strain, and are injurious.

Pannus, a forerunner of opacity of the cornea, usually accompanies trachoma. The cause of pannus is unknown. Pannus may be a reflex neurosis, a protective curtain thrown over the cornea to shut out light and dim the vision, or possibly a product of a local intelligence of the tissues protecting themselves against the injury of light or vision. Almost without exception the pannus begins above and grows downward over the pupil. Here the pannus offers greater protection than if it should grow from below or from either side toward the centre of the pupil. Pannus often disappears with perfect rest of both eyes.

Bluestone, alum, lunar caustic, etc., are used in trachoma. The benefit, if there is any, is from the massage, or because the patient, on account of the pain, is unable for hours to open the eyes, and thus they are given rest.

Therapeutical Notes.

A Lotion for Burns.—Dr. Nikolsky, cited in the *Journal de médecine de Paris* for January 28th, recommends the following lotion for burns that do not exceed the degree of vesication:

℞ Tannin, Alcohol,	each	1 part;
Sulphuric ether		8 parts.

M.

An Ointment for Trachoma.—The *Journal of Tropical Medicine* for April quotes the following prescription from the *Deutsche Medizinal-Zeitung* of unspecified date:

℞ Copper sulphate, Salicylic acid, Cocaine,	of each	1 part;
Vaseline		100 parts.

Ointment for Crusts and Fissures of the Nostrils.—The *Gazette hebdomadaire de médecine et de chirurgie* for April 29th attributes the following prescription to M. Bonne:

℞ Ointment of white precipitate, Boric vaseline,	of each	150 grains;
Oxide of zinc		75 "
Acetate of lead		¼ of a grain.

M. For external application.

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* Purulent disease in trachoma requires nearly the same treatment as purulent ophthalmia and ophthalmia neonatorum. In these diseases, when nitrate of silver is indicated and is properly used, it is a specific—yet one untimely application may destroy an eye. Nitrate of silver is indicated: 1, as a preventive, when there is belief or fear of infection before swelling and increase of secretion begins; 2, when all swelling subsides and the secretion of serum mixed with pus or blood is changed beyond any doubt into a discharge of thick, pure pus. Any form of nitrate of silver is dangerous during the stage of swelling and secretion of serum, particularly so if it comes in contact with the conjunctiva covering the sclerotic. It is not safe to use it even on the everted lids until the discharge is pure pus. It may check the secretion, but as a rule nothing will be gained.

The emulsion here described is probably the safest and best preparation of nitrate of silver. It will seldom be properly compounded by the pharmacist. It should be made in this way: Put one drachm each of powdered acacia and thick liquid petrolatum in a mortar; triturate; add three drachms of the petrolatum; triturate; add two drachms of water; triturate vigorously and set aside for an hour; add two drachms of water in which has been dissolved from five to fifteen grains of nitrate of silver and triturate a few minutes, when the emulsion is ready for use. Shake well before using. The emulsion looks like thick cream. After a fortnight it is too weak to use. The emulsion is protective, uniform, and distributive, and affects all parts of the conjunctiva equally, which can not be said of the aqueous solutions. It is seemingly harmless, and is used so: When the swelling subsides and the discharge becomes pure pus, one or two minims of the emulsion are dropped on the everted lids, and while everted the lids are manipulated so that the emulsion reaches every part of the conjunctival sac. This treatment is repeated every eighteen, twenty-four, or forty-eight hours. The lids are prevented from sticking together by free use of weak iodoform ointment.

In purulent disease, if there is swelling or a discharge that is not pure pus, the treatment should be palliative rather than curative, and while this stage continues a 1-to-6,000 solution of permanganate of potassium and boiled water, and a one-per-cent. iodoform and petrolatum ointment, are probably the best remedies. In irrigating, if practicable, evert the lids and drop into the eye, from a medicine dropper, about four drachms of this solution as hot as can be borne. Six such irrigations are the limit in twenty-four hours. Too frequent washing of the eye tends to destroy the protective covering. Distilled water should not be used in eye washes. Its cauterizing action injures the protective epithelium and gives disease germs a lodgment. After irrigating, the toilet of the eye is completed by putting the iodoform ointment in the eye and on the lids. Between times the secretion may be wiped off with surgeons' cotton. This treatment is continued until the swelling subsides and the discharge becomes pure pus.

At any stage, if the cornea becomes infected, the diseased spots are touched with a camel's-hair pencil dipped in a two-per-cent. solution of nitrate of silver. Only enough is used to lightly coat the diseased spots, and then it is neutralized with weak salt water. In the stage of serum secretion and swelling, take care that no silver comes in contact with the conjunctiva covering the sclerotic.

Chronic purulent inflammation of the tear duct frequently follows purulent infection of the eye. Enough pus may ooze into the eye from the tear ways to confuse this disease with ophthalmia.

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THE AMERICAN MEDICAL ASSOCIATION AND DOMESTIC AND FOREIGN PROPRIETARY PREPARATIONS.

WE have information which we believe to be trustworthy to the effect that certain European manufacturers of proprietary drugs, or their representatives in this country, have combined in an effort to enhance the demand for their products by belittling the value of American preparations with which their own come in competition. We believe in fair rivalry in business, but we consider it poor policy to decry the goods of one's rival. That, however, is a commercial matter with which we have nothing to do. To say of a certain product that it is "a definite chemical compound," and to seek thereby to raise it above the plane of some other product sneeringly spoken of as "only a mixture," we have always looked upon as nothing but an *ad captandum* argument. More scientific research may or may not have been brought to bear in a chemical synthesis or a fractional distillation than in a nice but not chemical adjustment of the proportions of a mixture, but that, we conceive, does not affect the practical value of either product. Specious as it is, this line of argument has met with no objection, so far as we know, perhaps for the reason that it has been recognized as sure not to take deep root in the minds of American physicians. It was futile, but there was not apparent in it the taint of underhanded dealing.

But when it comes to an attempt to cast discredit upon American products by getting control of the Section in Materia Medica of the American Medical Association—and we are assured that such an attempt is likely to be made at the approaching Atlantic City meeting by securing the choice for officers of the section of only such men as sympathize with the aggressive movement in question—it is time to warn the association to be on its guard. We feel sure that nothing more is needed. American pharmacy is not a thing to be ashamed of; witness, the frequent calls in European prescriptions for American vaseline, American fluid extracts, etc. We are in favor of granting a fair field and no favor to foreign manufacturers, but we will not stand by and see our own producers muzzled. Let all pharmaceutical products stand or fall on their merits; let none be undermined by "diplomacy."

COLOR-BLINDNESS.

THE number of color-blind people in the world who are altogether unaware of their deficiency is no doubt very considerable—and by "color-blind" we mean in the grosser degrees. The defect is one that under ordinary circumstances and to most people is probably of little consequence, and it is no doubt due to that fact that its discovery in so many cases is not effected. In many conditions, moreover, where its existence is a bar to certain occupations—*e. g.*, those of an artist or a house painter—the harm caused by it before its recognition would scarcely be of alarming magnitude; but when we come to deal with craftsmen—*e. g.*, railway men and sailors—upon whose power of distinguishing color the lives of many human beings often depend, the question assumes the gravest import. The particular authorities of various countries who confer the license upon which the calling of an officer of the mercantile marine depends recognize the importance of this special faculty of distinguishing color being in a normal condition in the candidates, and apply some kind of test to ascertain the fact. In some cases cards or lights of various colors are exhibited to the candidate, and he is required to name them. An ingenious method is that of the Holmgren wool test, in which the candidate is required to match various kinds of colored wool. This has been considered the most efficient method at our disposal hitherto. Mr. Thomas H. Bickerton, oculist to the Liverpool Royal Infirmary, however, in a communication to the *British Medical Journal* for March 17th, details some observations and considerations which tend to show how very far from satisfactory this method really is. He relates the case of an officer of the British mercantile marine who had passed for first mate, whose inability to distinguish between a green light and a white one at night led him into the perilous error of mistaking the green light of an advancing vessel crossing his path for the white one of some stationary craft, and the error was only discovered by the accidental advent of the captain on the bridge just in time to avert a collision. Yet this man was subsequently tested officially and also privately by several competent medical examiners, without any inaccuracy in his power of recognizing and distinguishing the different shades of wool being detected. There appear to be many who are perfectly capable of distinguishing between colors at close quarters, who at no considerable distance lose the faculty of color vision. Of course, that is what we all do at some point of distance. As the horizon is approached the blue-gray of the atmosphere throws its mantle more or less completely over all things. But many there are whose power of color-perception vanishes at a very early point, one far too near to allow of timely action for the prevention of an impending catastrophe. There is, in fact, a shortsightedness for colors as well as a blindness to them. To this must be added weak sight for colors, a deadening of the sensation of certain portions of the spectrum. Moreover, Dr. Herbert Seager, in a letter to Mr. Bickerton, mentions yet another form of color-blindness, viz., inability to distinguish the colors beyond a very short distance at night—in Dr. Seager's own case, half a mile—while color-perception in the daytime is normal and the subject may be actually far-sighted. This last form is, perhaps, the most dangerous of all, not only because it is least likely to be suspected, but because it is at night that the faculty is, in the case of ships' officers, urgently needed.

It would seem that the test for color vision might be effectively made if lamps provided with changeable colored screens were used, and the candidates were tested at night by being called upon to read from a sufficient distance the colors as shown in accordance with a test card, after the method employed in ascertaining proficiency in military signaling. Groups of four letters, forming no intelligible words, so as to eliminate all guess-work, are transmitted by the dot-and-dash code. The candidate reads them aloud as they are signaled, and his reading is subsequently compared with the test card. It would surely be no difficult matter to send groups of colors in such a way that their accurate reading should be a positive guarantee of perfectly normal color vision in all respects.

PIANISTS' DISEASE.

Professor J. Zabludowski, of Berlin, has been kind enough to send us an abstract of a paper on this subject prepared by him for the twenty-ninth Chirurgen-Congress. He remarks that the affection has generally been looked upon as a professional neurosis of co-ordination, and treated like violinists' and writers' cramp—that is, as a functional disturbance having its seat in the brain. Consequently overworked fingers are many a time treated with electricity and exercise, with or without massage. But clinical observation, he maintains, shows that the trouble is only quite exceptionally of a functional character; in the majority of cases there is inflammation of one or more of the nerves of the arm, proceeding *per continuitatem* from muscles or joints injured by the playing. He believes, too, that the lapse of the acute stage into the subacute and chronic is often the result of a course of exercise treatment in which the joints most affected are also the ones most exercised.

The greater number of sufferers from the disease he finds among the girl pupils of the conservatory, persons whose bones in general are soft or small or their joints lax, and particularly those whose hands are not large enough for piano-playing. A neuropathic tendency is seldom the predisposing cause, and the purely functional forms of the affection are rarely the local manifestation of a nervous disease. The piano in use at the present day, however suited it may be to the developed hand of the adult, says the author, presents difficulties hard for children and adolescents to overcome. There is an unquestionable need of pianos with a keyboard that will enable pupils who are still physically undeveloped to strike chords consisting of notes lying far apart with only a moderate spreading of the hand. It seems that Janko's keyboard devised to meet this want has not generally been found to be of any value, because it requires too great deviation from the established methods of piano-playing. It would be well, the author thinks, to build a young person's piano the keyboard of which should differ from that of the standard instrument only in the breadth of the individual keys, which should be about three twentieths narrower than those now in use.

As regards the treatment of pianists' disease, the ordinary, traumatic form should be treated with rest and unirritating massage manipulations; exercises are to be employed only in the stage of decline, and they should call into play only the neighboring joints that have remained unaffected. In the rarer cases, those that are paralytic or of the nature of cramp, energetic massage, with active and opposed movements, may be employed.

THE DUEL IN GERMANY.

According to the *Journal de médecine de Paris* for April 22d, a well-known physician, the director of a "thermal establishment" at Triberg, recently had an altercation with one of his confrères. When provoked by the latter, he declined to challenge him, alleging his religious scruples as a cause. As each of the physicians happened to be surgeon major of reserves, the military tribunal took cognizance of the case, notwithstanding that the incident took place outside of military service, with the result that the physician who declined to fight has received the following order from the Emperor's cabinet: "You are dismissed from your rank as surgeon major of the reserves because, in spite of repeated invitations made to you, to demand, in conformity with the laws of honor, reparation for an insult, you have refrained from challenging your adversary." That dueling in certain European armies was tacitly overlooked we had always considered due to the difficulty of dealing with old-established caste traditions, but we could scarcely have believed that the Emperor would issue an edict to punish a man for declining to be accessory to a murder.

"THE PROPER STUDY OF MANKIND IS MAN."

In the *Cronica Medica*, of Lima, Peru, for March 15th we came across a paragraph in the editorial columns addressed to the deaf, and stating that a rich lady who had been cured of her deafness and noises in the ears by using Dr. Blank's artificial tympanums had left the sum of twenty thousand francs that poor people who could not afford to purchase them might obtain them gratuitously on application to the doctor's institute in Eighth Avenue, New York. A little later, among the news items in the *Indian Lancet* for April 1st we espied the same advertisement, the doctor's "institute," however, on this occasion being situated at Gunnersbury, near London, England. "Survey mankind from China to Peru," says Johnson. The purveyor of artificial tympanums evidently appreciates this. He is already tapping it from India to the terminus. We look forward with thrilling expectancy to Chinese exchanges.

SULPHUR AS A PREVENTIVE OF MOSQUITO BITES.

One of our readers informs us that, having seen a statement in some English medical journal to the effect that sulphur, taken internally, would protect a person against flea bites, it occurred to him to try it as a preventive of mosquito bites. Accordingly, he began taking effervescing tablets of tartarlithine and sulphur, four daily. He provided himself with several lively mosquitoes and, having put them into a wide-mouthed bottle, inverted the bottle and pressed its mouth upon his bare arm. The mosquitoes settled on his skin, but showed no inclination to bite him. If this gentleman's experience should be borne out by further trials, it might be well for persons who are particularly sensitive to mosquito bites to take a course of sulphur during the mosquito season, especially in view of the growing opinion that the mosquito is the common vehicle of the *Plasmodium malariæ*.

A LARGE UMBILICAL CONCRETION.

Uncleanly persons are apt to be the bearers of more or less foreign material in the pit of the navel, but a concretion of large size in that situation is quite uncommon. Dr. O. Hahn (*Beiträge zur klinische Chirurgie*, xxvi, 1; *Centralblatt für Chirurgie*, April 21st) reports having met with one as large as a pigeon's egg. It had given rise to a foul discharge and required an incision for its removal. It was made up of epithelial scales, fat, lumps of sebum, and particles of dust.

HATPINS IN THE MALE URETHRA.

We have noticed of late quite an epidemic of foreign bodies in the male urethra. Quite recently two cases have been recorded, one by Mr. Arthur Hawley in the *British Medical Journal* for March 17th, and one by Dr. Bonnet in the *Province médicale* for April 21st, in which a lady's hatpin had been passed head foremost into the urethra and surgical aid was required to effect its removal. Both the patients were married men. In Mr. Hawley's case the pin was broken and the glass head could be felt in the perinæum, just in front of the anus, while the broken end could be felt just in front of the scrotum. After failing in efforts at extraction by long sinus forceps, Mr. Hawley succeeded by passing the blades of curling tongs belonging to the patient's wife down the urethra and catching the broken end of the pin. In Dr. Bonnet's case, with a Péan's forceps passed into the urethra the metal was detected about an inch from the meatus, but the point had entered the inferior wall of the urethral canal, and Dr. Bonnet, fearing that by grasping the pin and pushing it onward to free the point he might push it too far and add to the difficulty of extraction, drew it forward in the axis of the urethra till it emerged beneath the lower part of the meatus. Withdrawing the pin as far as the head, he then used the metal part as a lever and, bringing the head round to the meatus, pushed it through. In neither case did any untoward results follow. But what we should like to know, and what both authors are unable to inform us of, is for what purpose the hatpin was introduced into the urethra.

THE NORMAL TEMPERATURE OF THE HUMAN BODY.

According to a communication from Lieutenant-Colonel Hamilton, of the Indian Medical Staff, appearing in the *Indian Medical Gazette* for April, the normal temperature of the human body can not be arbitrarily fixed for all races and climes as the commonly accepted 98.4° F. Ten temperature charts taken of Gurkha soldiers in hospital would appear to show that among the Himalayan inhabitants the normal temperature in health is between 96° and 97° F. This observation is confirmed by three charts by Dr. Miss Pant taken among members of her own family, which indicate that the normal temperature of the inhabitants of Almora is also in the neighborhood of 97° F. Colonel Hamilton adds: "An examination of the case book in the Gurkhas' hospital shows invariably that when a patient is recovering from any illness his temperature falls to 96° or 97° F., and that he is not well till it has done so. A temperature of 98.4° F. in the morning in a Gurkha is always unsatisfactory, and in some cases may be of very serious import." The obvious import of this is the need of a careful series of investigations of the normal body temperatures of different races in different climes.

"WHAT YOU GET FOR FOUR DOLLARS."

We have received a marvelous consignment of circulars, including a pamphlet entitled *Hypnotism*. It contains the usual farrago of quasi-scientific statement, bombast, and commercialism, and invites the reader to pay "the world's greatest hypnotist" four dollars for a "course of instruction" in hypnotism in twenty lessons, which, as we gather, can be taken by mail, together with sundry publications, and above all a "diploma," stating that the diplomate is "a perfect hypnotist" and is "fully competent to give hypnotic exhibitions, cure diseases, and teach the art of hypnotism to others." Leaving the unblushing effrontery out of consideration, we are decidedly of opinion that all public exhibitions of hypnotism should be put down by the strong arm of the law as dangerous and demoralizing, whether given by competent hypnotists or by charlatans. That suggestion has a legitimate field in the domain of therapeutics we have no doubt, but its use should be confined to those who by study of all the necessary sciences relating to the human body and mind are competent to understand not only the tools they use, but the machinery upon which they use them. We deplore the unmolested circulation of such brazen charlatanry as the circulars before us, because it seriously impedes the proper and scientific investigation and practice of what in competent hands and with proper safeguards may become a valuable shaft in the therapeutic quiver. The style and tone of the aforesaid circulars and their obvious mercenary character ought to be, but we fear are not, sufficient to give the information referred to in the special order blank "What you get for four dollars." You get humbugged.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported for the two weeks ending May 12, 1900:

DISEASES.	Week ending May 5.		Week ending May 11.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	13	2	21	13
Scarlet fever	152	13	166	12
Cerebro-spinal meningitis	0	4	0	1
Measles	637	32	559	14
Diphtheria	233	30	288	44
Laeyngeal diphtheria (croup)	8	6	9	7
Tuberculosis	214	164	241	197
Chicken-pox	26	0	11	0
Small-pox	2	0	0	0

The New York Polyclinic.—It is announced that Dr. Francis J. Quinlan and Dr. Robert C. Myles have been elected professors of laryngology and rhinology.

Changes of Address.—Dr. George W. Jacoby, to No. 605 Madison Avenue, New York; Dr. J. E. Lumbard, to No. 1945 Seventh Avenue, New York.

Marine-Hospital Service Health Reports.—The following cases of small-pox, yellow fever, cholera, and plague were reported to the surgeon-general during the week ending May 12, 1900:

Small-pox—United States and Insular.

Mobile, Ala	Apr. 26–May 5	4 cases.	
Washington, D. C	Apr. 26–May 5	1 case,	1 death.
Jacksonville, Fla	Apr. 26–May 5	1 "	
Evansville, Ind	Apr. 26–May 5	5 cases.	
Indianapolis, Ind	Apr. 26–May 5	6 "	
Des Moines, Inwa	Apr. 1–30	16 "	
Ottumwa, Iowa	Apr. 14–21	2 "	
Wichita, Kan	Apr. 26–May 5	4 "	
Covington, Ky	Apr. 26–May 5	6 "	
Lexington, Ky	Apr. 26–May 5	1 case.	
New Orleans, La	Apr. 26–May 5	50 cases,	18 deaths.
Baltimore, Md	Apr. 26–May 5	5 "	
Chicopee, Mass	Apr. 26–May 5	1 case.	
Grand Rapids, Mich	Apr. 26–May 5	3 cases.	
Omaha, Neb	Apr. 21–28	2 "	
New York, N. Y	Apr. 26–May 5	2 "	
Cleveland, Ohio	Apr. 26–May 5	7 "	1 death.
Nashville, Tenn	Apr. 26–May 5	2 "	
Ogden, Utah	Apr. 1–30	2 "	
Salt Lake City, Utah	Apr. 26–May 5	5 "	
Manila, Philippine Islands	Mar. 3–24	9 "	1 death.

Small-pox—Foreign.

Prague, Austria	Apr. 7–21	9 cases.	
Ghent, Belgium	Apr. 14–21		1 death.
Rio de Janeiro, Brazil	Mar. 23–30	6 "	12 deaths.
Grand Falls and St. Leonard's, New Brunswick, Canada	Apr. 28	Present.	
Province of Ontario, Canada	Apr. 18–May 1	3 cases.	
Bonaventure County, Quebec, Canada	May 4	26 "	
Liverpool, England	Apr. 14–21	18 "	3 deaths.
London, England	Apr. 14–21	4 "	
Southampton, England	Apr. 14–21	2 "	
Lyons, France	Apr. 1–14		3 "
Gibraltar	Apr. 15–22	2 "	1 death.
Athens, Greece	Apr. 14–21	2 "	1 "
Bombay, India	Apr. 3–10		111 deaths.
Calcutta, India	Mar. 10–17		28 "
Kurrachee, India	Apr. 1–8	20 "	14 "
Milan, Italy	Apr. 21–28	1 case.	
Vera Cruz, Mexico	Apr. 21–28		4 "
Moscow, Russia	Apr. 17	7 cases.	
Odessa, Russia	Apr. 7–21	24 "	8 "
Warsaw, Russia	Apr. 1–4		5 "
Glasgow, Scotland	Apr. 14–21	6 "	1 death.
Corunna, Spain	Apr. 14–21		1 "
Straits Settlements, Singapore	Mar. 10–17		3 deaths.
Maracaibo, Venezuela	Apr. 7–14	1 case.	

Yellow Fever—Foreign.

Rio de Janeiro, Brazil	Mar. 23–30	37 cases,	23 deaths.
Santos, Brazil	Feb. 18–Apr. 8		125 "
Vera Cruz, Mexico	Apr. 21–28		1 death.

Cholera.

Bombay, India	Apr. 3–10		15 deaths.
Calcutta, India	Mar. 10–17		77 "

Plague—Insular.

Manila, Philippine Islands	Mar. 3–24	15 cases,	12 deaths.

Plague—Foreign.

Aden, Arabia	Feb. 21–Apr. 14	119 cases,	81 deaths.
Port Said, Egypt	May 4	Outbreak reported.	
Bombay, India	Apr. 3–10		698 deaths.
Calcutta, India	Mar. 10–17		744 "
Kurrachee, India	Apr. 1–8	471 cases,	333 "

A Bureau of Information for Members of the American Medical Association Passing Through Philadelphia.—The directors of the Philadelphia County Medical Society, aware of the large numbers of physicians who will pass through Philadelphia on their way to and from the meeting of the American Medical Association to be held in Atlantic City, New Jersey, June 5th to 8th, and desirous of affording them an opportunity to visit the various hospitals and scientific institutions of Philadelphia, and to witness operations, etc., will establish a bureau of information for the furtherance of these objects. This bureau of information will be located at the College of Physicians, northeast corner of 13th and Locust Streets, the college having kindly placed a room in its hall at the disposal of the Philadelphia County Medical Society. This room will be in charge of a competent physician and will be open daily except Sunday from June 4th to the 11th, from 10 A. M. to 5 P. M. Physicians are invited to make free use of the bureau, where they may obtain full information relative to the situation of the different hospitals, medical colleges, and other scientific institutions of Philadelphia, and the time of operations and clinics at the various hospitals. Information will be secured and tabulated daily showing the attractions for that day throughout the city. The College of Physicians of Philadelphia has also voted to extend to the members of the American Medical Association the courtesies of the Mütter Museum. Additional information may be secured by addressing the Bureau of Information at the above-given address, from June 4th to 11th, and prior to that time by addressing any of the directors of the Philadelphia County Medical Society, as follows: Dr. A. O. J. Kelly, No. 1911 Pine Street; Dr. Charles A. Oliver, Dr. John G. Clark, Dr. Addinell Hewson, and Dr. Emma Musson.

The St. Louis Medical Society of Missouri.—At the last regular meeting, on Saturday evening, the 12th inst., Dr. J. K. Bauduy opened a discussion on Dr. Martin's case of pseudo-hypertrophic paralysis.

The Manhattan State Hospital Training School for Nurses held its third annual graduation exercises on Wednesday afternoon, at the hospital, on Ward's Island. The class numbered seventy—forty women and thirty men. Addresses were made by the Hon. Henry E. Howland, the president of the board of managers, Mr. George E. Dodge, the board's secretary, the Rev. Roderick Terry, and Dr. Francis P. Kinnicutt.

The Buffalo Academy of Medicine.—At the meeting of the Section in Ophthalmology, Otology, Rhinology, and Laryngology, on Monday evening, the 14th inst., the following papers were presented for discussion: A Report of Cases of Intubation of the Larynx, by Dr. Eugene A. Smith; and Some Notes on Trachoma, by Dr. E. E. Blaauw.

At the last meeting of the Section in Pathology, on Tuesday, May 15th, the order for the evening included the following papers: Echinococcus Cysts of the Pleura, by Dr. Charles Cary; Gaseous Disinfection, by Dr. Pease; and Syphilis, by Dr. Grover Wende.

The American Medico-psychological Association will hold its fifty-sixth annual meeting in Richmond, on May 22d, 23d, 24th, and 25th, under the presidency of Dr. Joseph G. Rogers, of Logansport, Indiana.

A Consolidation of Medical Journals.—The *Memphis Lancet* and the *Memphis Medical Monthly* have become consolidated under the title of the last-mentioned journal.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 5 to May 12, 1900:*

GARDNER, EDWIN F., Major and Surgeon, United States Army, will proceed to Manila on the transport *Warren.*

HEIZMANN, CHARLES L., Lieutenant-Colonel and Deputy Surgeon-General, United States Army, will proceed to Manila on the transport *Warren.*

MAY, JAMES V., Acting Assistant Surgeon, United States Army, is assigned to temporary duty with troops on the transport *Warren,* to sail for the Philippine Islands.

WILSON, NELSON W., Acting Assistant Surgeon, United States Army, having completed duty at Fort Columbus, as witness before the general court-martial, will return to Fort Porter.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending May 12, 1900:*

BRAISTED, W. C., Passed Assistant Surgeon. Detached from the *Detroit* and ordered home to await orders to sea.

DELANCY, C. H., Assistant Surgeon. Detached from the *Essex* and ordered to the Naval Hospital, Washington.

EVANS, S. G., Passed Assistant Surgeon. Ordered to the *Kentucky.*

FREEMAN, G. F., Assistant Surgeon. Detached from the Naval Hospital, Washington, and ordered to the *Essex.*

LUMSDEN, C. P., Surgeon. Ordered to the *Kentucky.*

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the United States Marine-Hospital Service for the Seven Days ending May 10, 1900:*

BAILHACHE, PRESTON H., Surgeon. Granted leave of absence for ten days from May 25, 1900.

COBB, J. O., Passed Assistant Surgeon. Directed to rejoin station at Fort Stanton, New Mexico, visiting Liberty and Saranac Lake, New York, and Rutland, Massachusetts, *en route.*

KERR, JOHN W., Assistant Surgeon. Relieved from duty at San Francisco Quarantine and directed to proceed to Hongkong, China, for duty.

VOGEL, C. W., Assistant Surgeon. Relieved from duty at Immigration Depot, New York, and directed to proceed to San Francisco Quarantine and report to the medical officer in command for duty and assignment to quarters.

AMESSE, J. W., Assistant Surgeon. Relieved from duty at Detroit and directed to proceed to Honolulu, Hawaiian Islands, and report to Surgeon D. A. CARMICHAEL for duty.

MCLAUGHLIN, A. J., Assistant Surgeon. Relieved from duty at Stapleton, New York, and directed to report to the medical officer in command, Immigration Depot, for duty.

EARLE, B. H., Assistant Surgeon. Relieved from duty at Chicago and directed to proceed to Detroit and report to the medical officer in command for duty and assignment to quarters.

LLOYD, B. J., Assistant Surgeon. Relieved from duty at Mobile and directed to proceed to Chicago and report to the medical officer in command for duty and assignment to quarters.

LONG, JOHN D., Assistant Surgeon. Relieved from duty at Boston and directed to proceed to Stapleton, New York, and report to the medical officer in command for duty and assignment to quarters.

FEILD, E. E., Acting Assistant Surgeon. Granted extension of leave of absence for two days.

STEPHENSON, CHARLES W., Hospital Steward. Relieved from duty at Chicago and directed to proceed to Evansville, Indiana, and report to the medical officer in command for duty and assignment to quarters.

Society Meetings for the Coming Week:

MONDAY, *May 21st:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Connecticut, Medical Association; Chicago Medical Society.

TUESDAY *May 22d:* New York Dermatological Society (private); Metropolitan Medical Society, New York (private); Buffalo Academy of Medicine (Section in Obstetrics and Gynæcology); Richmond, Virginia, Academy of Medicine and Surgery.

WEDNESDAY, *May 23d:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Pathological Society; New York Surgical Society;

American Microscopical Society of the City of New York; Philadelphia County Medical Society.

THURSDAY, *May 24th:* New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Brooklyn Society for Neurology; Roxbury, Massachusetts, Society for Medical Improvement (private); Pathological Society of Philadelphia.

FRIDAY, *May 25th:* New York Clinical Society (private); New York Society of German Physicians; Yorkville Medical Association, New York (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

SATURDAY, *May 26th:* New York Medical and Surgical Society (private).

Births, Marriages, and Deaths.

Engaged.

LOWENSTEIN—BERGMAN.—In New York, on Sunday, May 13th, Dr. Frederick P. Lowenstein, of Westfield, Massachusetts, and Miss Minnie Bergman, of New York.

Married.

BRUSH—ALBERT.—In New York, on Monday, April 30th, Mr. Edgar Robertson Brush and Miss Alice Louise Albert, daughter of Dr. Halpern Albert.

MORSE—SHAW.—In Denver, on Tuesday, May 1st, Dr. George W. Morse, of Elmira, New York, and Miss Bessie D. Shaw.

SAVINI—HARDY.—In New York, on Monday, April 30th, Dr. Carlo Savini and Miss Elena Norcross Hardy.

WILSON—WELLS.—In Charleston, South Carolina, on Monday, April 30th, Dr. J. La Roche Wilson and Miss Elizabeth Cuthbert Wells.

Died.

DRAPER.—In Milton, Massachusetts, on Wednesday, May 2d, Alice Eaton Draper, daughter of Dr. A. W. Draper.

GUERARD.—In Flat Rock, North Carolina, on Monday, May 7th, Eugenie Engels Guerard, wife of Dr. Arthur Rose Guerard.

HARVEY.—In San Francisco, on Friday, April 27th, Sarah Eugenia Harvey, wife of Dr. Philip Francis Harvey, United States Army.

TABB.—In Savannah, on Thursday, May 10th, Dr. R. S. Tabb, United States Marine-Hospital Service.

VINCENT.—In Detroit, on Friday, May 4th, Dr. Edward E. Vincent.

YOUNG.—In Salem, New York, on Saturday, May 12th, Mary Louise Newton Young, wife of Dr. Alfred M. Young.

Obituaries.

RICHARD BRYAN GLASS, M. D.

DR. GLASS, who died on May 10th, was born in South Carolina on January 4, 1858. He obtained his medical education partly in his native State and partly in Georgia, taking his degree from the Georgia Medical College in 1887, and in that institution he held the chair of materia medica for a time. He soon obtained a large practice, but his health failed, and he came to New York for treatment. He recovered, but did not again engage in practice. He remained in New York, but entered upon a commercial career. However, he retained his interest in medicine and kept himself informed of its progress by reading the medical journals; moreover, his occupation brought him into frequent contact with physicians, and those whose acquaintance he formed found him a genial gentleman, an acute thinker, and a man of more than ordinary professional attainments. His death was occasioned by disease of the vermiform appendix.

Pith of Current Literature.

The Medical Record, May 12, 1900.

Bottini's Operation for the Cure of Prostatic Hypertrophy. By Dr. Willy Meyer.—This is the continuation of the previous week's article in the *Medical Record,* and consists of illustrative cases. The author believes that the mortality in this operation will be reduced considerably in the near future.

The Modern Treatment of Diabetes Mellitus. By Dr. Frederic Kraus.—Medical therapy by drugs would seem to be a failure; if there is any good effect, it is traceable to the diet observed during the use of the drug. The opiates are exceptions. The only treatment worthy of consideration seems to be the dietetic one. As a means of ascertaining the proper diet in individual cases the author favors the standard diet for one day used by Kuelz, Naunyn, and von Noorden. The amount of sugar passed during the ensuing twenty-four hours is then ascertained by polarization and titration. The carbohydrates administered in the food being known and the amount of sugar in the urine being ascertained, we then know the tolerance of the organism for carbohydrates, and the diet is arranged accordingly. The author is skeptical as to the value of surrogates, though there are *some* very useful surrogates and preparations. Alcoholics in moderation deserve a place on the diabetic diet list.

Balneo-therapy in diabetics is commented upon favorably, but the effect is believed to depend upon a combination of many other circumstances, such as change of air, rest, travel, etc.

The Journal of the American Medical Association, May 5, 1900.

Further Observations on the Treatment of the Abdominal Viscera through the Colon. By Dr. Fenton B. Turck.—The author believes that the introduction of small quantities of water at a temperature of 55° C.—131° F.—through the rectum into the colon produces a marked effect not only on the abdominal organs, but also on the heart and general circulation. The cases benefited by this procedure are those in which the liver is most markedly affected; those in which the kidneys are affected; and, finally, those where an intestinal factor is most evident, as in appendicitis. Particularly in *hepatic insufficiency, catarrhal jaundice,* and *chronic hepatitis* have the results of this treatment been satisfactory.

Protocols of Microscopic Examination of Several Gasserian Ganglia. By Dr. Lewellys F. Barker.

Surgery of the Fifth Nerve for Tic Douloureux. By Dr. Robert Abbe.

Natural History of Tic Douloureux, with Remarks on Treatment. By Dr. Charles L. Dana.

Operation for Exstrophy of the Bladder by Sonnenberg's Method. By Dr. J. Rilus Eastman.

Vision and Color Perception for Railway Service. By Dr. William C. Bane.

The Early Diagnosis of Pulmonary Tuberculosis. By Dr. Edward F. Wells.

The Sight and Hearing of Children. By Dr. H. V. Wurdemann and Dr. Frank Allport.

The Journal of the American Medical Association, May 12, 1900.

The Tenements and Tuberculosis. By Dr. S. A. Knopf.—A realistic description of the unsanitary conditions of the tenements; a plea for better laws concerning the building of tenement houses, and a hopeful view of the tenement of the future.

Notification and State Supervision of the Tuberculous. By Dr. Joseph Matteson.

Traumatic Perforations of the Membrana Tympani. By Dr. Francis R. Packard.

The Use of Adrenal Substance in the Treatment of Asthma. By Dr. Solomon Solis-Cohen.

Ætiologic Studies on Neuroses of Peripheral Origin. By Dr. H. Gradle.

Hair and its Anomalies. By Dr. Henry Alfred Robbins.

Instrument for Use in Phototherapy. By Dr. J. W. Kime.

The Influence of High Altitudes on Albuminuria. By Dr. Edward C. Hill.

Vesicorectal Anastomosis; with Especial Reference to the Treatment of Exstrophy of the Bladder. By Dr. Jacob Frank.

The Medical News, May 12, 1900.

Functional and Organic Heart Murmurs in Infancy and in Childhood. By Dr. Abraham Jacobi.—Beginning his article by quoting from one of his former papers—"The heart [of the infant] exhibits functional murmurs but rarely. Whenever there are functional murmurs present in the infant, it is safe to attribute them to some organic disease rather than to mere functional disorder"—Dr. Jacobi gives cases in point and strengthens the position he takes at the beginning of his article, which is an interesting contribution to the literature of pædiatrics.

Perforating Duodenal Ulcers. By Dr. Robert F. Weir.—The author's article on this subject, which was epitomized last week, is illustrated here by the detailed reports of fifty-one cases in which recourse has been had to operation.

Boston Medical and Surgical Journal, May 10, 1900.

Adaptation of Pathogenic Bacteria to Different Species of Animals. By Dr. Theobald Smith.

Bacterio-therapeutics, with Especial Reference to Tuberculosis. By Dr. Edward R. Baldwin.

The Relation of Bacteriology to Medicine. By Dr. Richard C. Cabot.

The Sociological Status of the Physician. By Dr. Clarence John Blake.

The Ideal Ration for an Army in the Tropics. By Dr. Edward L. Munson.

Philadelphia Medical Journal, May 12, 1900.

Pruritus Ani, with Especial Reference to its Local Treatment. By Dr. Lewis H. Adler, Jr.—For the varicosity of the hæmorrhoidal vessels which exists, more or less, in all cases, an injection into the rectum of one drachm to two drachms and a half of the following is found of use:

℞ Fluid extr. hamamelis...... 1 fluid ounce;
Fluid extr. ergot, }
Fluid extr. hydrastis, } each, 2 fluid drachms;
Comp. tinct. benzoin, }
Carbolized olive or linseed oil
(carbolic acid, five per
cent.)................. 1 fluid ounce.
M. Sig.: Shake well before using.

"If the skin has a very harsh and dry appearance I paint the entire surface around the anus for several inches outward with a strong solution of silver nitrate."

When this has dried the official citrine ointment or unguentum hydrargyri nitratis is applied.

The author's experience has been that a favorable sequel is the result invariably.

The Surgical Treatment of Congenital and Pathological Disfigurements of the Face. By Dr. John B. Roberts.

The Relation of Diseases of the Nose and Throat to Life Expectancy. By Dr. E. Fletcher Ingals.

Alarming Hæmorrhage controlled by Hæmostatic Forceps left on the Vessel. Wound of the Femoral Vein controlled by Hæmostatic Forceps. Gangrenous Omental Hernia with practically no Constitutional Symptoms. Amputation of All the Toes of Both Feet for Dry Gangrene. Removal of Two Hundred and Eighty Grains of White Wax from the Male Urinary Bladder. By Dr. Orville Horwitz.

Remarks to the General Practitioner regarding the Pessary. By Dr. Frank C. Hammond.

Intestinal Indigestion and its Consequences. By Dr. William Henry Porter.

Pædiatrics, May 1, 1900.

Report of a Case of Chronic Valvular Endocarditis and Acute Nephritis following Chorea. By Dr. John M. Swan.

On the Abatement of Dental Caries in Public School Children. By Dr. Arthur De Voe.—The author draws a graphic picture of the neglect of children's teeth, and advocates the systematic inspection of the teeth of school children with a view to impressing upon their parents the importance of preserving the teeth from decay. He suggests that dental caries is spread from one person to another and remarks that it often gives rise to offensive and deleterious emanations. On account of these facts, he would have children with foul teeth suspended from school privileges until their teeth had been attended to.

Fracture of the Upper Third of the Left Femur in an Infant. By Dr. Robert T. Gillmore.

American Journal of the Medical Sciences, May, 1900.

An Analysis of Fifty-one Cases of Pneumothorax. By Dr. John Lovett Morse.

The Acute Pneumonic Form of Tuberculosis. By

Dr. Arthur W. Elting.—Dr. Elting gives a synopsis of the chief literature of this form of tuberculous disease and a full history, with the post-mortem findings, of a case observed in Dr. Osler's service in the Johns Hopkins Hospital. He thinks the affection is not infrequent, and suggests that the possibility of tuberculous infection should be borne in mind in all cases of lobar pneumonia, especially if they are protracted, and repeated and careful examinations be made of the sputum, as in this way alone can an early diagnosis be made. He briefly states the main clinical features as follows: The onset is very often without a definite chill, though such a chill may occur; the fever is often high and of a regular character, but very frequently irregular or remittent and always practically remittent in the later stages; marked dyspnœa and cyanosis are usually absent; the physical signs show consolidation of part of a lobe, a whole lobe, or more than a lobe; there is pain in the side, with cough and a sputum which is at first that of typical pneumonia, rust-colored and glairy, but becoming greenish in a week or ten days; in some cases at least the leucocytosis usually associated with acute lobar pneumonia is wanting.

Senile Bronchitis. By Dr. Reynold Webb Wilcox.

A Case of Multiple Neurofibromata of the Ulnar Nerve. By Dr. W. W. Keen and Dr. William G. Spiller.

The Differential Diagnosis of Ectopic Gestation. By Dr. Edward P. Davis.

Two Cases of Tabes Dorsalis in Negroes—Husband and Wife. By Dr. Albert Philip Francine.

The Clinical Aspect of Plague. (Concluded.) By Dr. Frank G. Clemow.

A Critical Summary of the Literature on the Surgery of the Stomach. By Dr. Charles H. Frazier.

Archives of Pœdiatrics, May, 1900.

The Ambulatory and Hospital Management of the Gastro-intestinal Derangements of Infancy in the Summer Months among the Poor of Large Cities. By Dr. Henry Koplik.—This is the president's address delivered at the recent annual meeting of the American Pædiatric Society. Dr. Koplik depicts the advantages of dispensaries over hospitals in the treatment of summer diarrhœa, and lays stress upon the actual preparation of the infants' food in the institution. The hospital-ward treatment, he thinks, should be abandoned, and he makes a strong plea for the colony, or camp, system with a separate hut for each child and its mother, a camp covering many acres of land, the children to be carried daily or oftener to the clinic (provided with a laboratory) for examination and treatment, so that free exposure to the open air shall be insured. The plan has the further advantage of reducing to a minimum the danger of transferring infection from one child to another.

The Care of Premature Babies in Incubators. By Dr. James D. Voorhees.—In this article Dr. Voorhees deals very thoroughly with the care of babies born prematurely, giving in detail an account of their management in the Sloane Maternity Hospital, where such infants are divided into three classes: those treated like babies born at term, those treated by wrapping in cotton, and those treated in the incubator. Into which class an individual child shall be put is governed by its general condition rather than by the exact period of gestation at which it was born. As a general thing, if it weighs in the neighborhood of five pounds, it is wrapped in cotton and surrounded with hot bottles. If it does not thrive or its temperature falls below normal, it is placed in the incubator. If a child weighs but four pounds and a half or less at its birth or if, although somewhat heavier, it is in poor condition, it is placed in the incubator at once. Dr. Voorhees thinks that the best incubator is the one devised by M. Lion, of Nice. Whatever incubator is used, it should be placed in the hall or in a large, cool room, where there is a good supply of fresh air. The direct rays of the sun should never strike it, because their heat would quickly raise the temperature too high. The temperature should be so regulated as to keep the baby's temperature normal without causing it to sweat. The incubator should be thoroughly disinfected before a child is put into it, and the pillow on which the child is to lie should be very soft. After having been made to cry lustily and weighed, a baby in need of incubator treatment should be anointed with albolene, but not bathed. The best clothing is a small light shirt and a napkin extending from the waist down and pinned about the feet and legs. This is better than wrapping in cotton, which is apt to cause the child to perspire too freely. It should not be removed from the incubator, except to be weighed or to nurse, and nursing is not permitted until it is thriving. It should be kept in the incubator until it has reached the development of full term, or longer if it is not improving, and when it is to be removed the temperature of the incubator should be lowered gradually almost to that of the nursery. The milk of a good wet-nurse, not that of the mother, properly diluted, has proved more satisfactory than any modification of cow's milk. Babies born prematurely are especially liable to attacks of cyanosis. A gentle slapping, to elicit a good cry, or the administration of a little oxygen will overcome this condition, and often a few drops of brandy in hot water every two or three hours will prevent a recurrence, but one must make quite sure that nothing has been drawn into the air-passages. If possible, the air admitted into the incubator should be filtered, as the babies that require incubator treatment are very susceptible to infection; to prevent it, the most careful cleansing of both the incubator and the baby itself is necessary, and much depends on the conscientiousness of the nurse. The remainder of the article is statistical.

Tuberculosis of the Female Genital Tract in Children. By Dr. Martha Wollstein.

The Application of a Rational Surgical Technique to the Removal of the Foreskin. By Dr. Leonard Woolsey Bacon, Jr.

The British Medical Journal, April 28, 1900.

Bulbar Paralysis and its Counterfeits. By Dr. G. A. Gibson.—The writer reports two cases of bulbar paralysis, presenting almost identical symptoms, but of entirely different origin. The first case, one of glosso-labio-pharyngo-laryngeal paralysis of bulbar origin, was in a woman of fifty-seven. Past history negative. The disease began one year previously with indistinctness of utterance, followed shortly afterward by difficulty in swallowing. A change in the character of the cough was next noticed, it becoming oxlike or bovine in quality. There were tremor, fibrillation, and atrophy of the tongue, weakness of the lips, double external strabismus, paralysis of the false vocal cords, and atrophy of certain muscles, notably the interossei. The organic reflexes of the lower portion of the spinal cord were unaffected. The above facts pointed to degeneration in the hypoglossal nucleus and in the combined nuclei of the glossopharyngeal and vagus nerves, with the accessory nucleus of the latter, as well as in the facial nucleus. The second case, one of glosso-labio-pharyngo-laryngeal paralysis of cortical origin, was in a man aged fifty-nine. Past history negative. When first seen, five years previously, his speech was monotonous and clumsy, but distinct. Speech gradually became more indistinct, difficulty in swallowing was noticed, and progressive weakness of the arms and legs set in. Examination showed weakness of the lips, and imperfect closure of the larynx. There was no muscular atrophy, and the various organic reflexes were markedly increased. The muscular weakness was more marked on the right side of the body. No muscular rigidity. The evidence points to a chronic degenerative process affecting the motor cortex of both sides almost symmetrically, and producing lesions of descending degeneration. True chronic bulbar paralysis is sometimes mimicked by the affection known as asthenic bulbar paralysis of Jolly and Strümpell. In this latter form the symptoms are neurasthenic, and there are no muscular wasting, no fibrillation, and no electrical changes. Such cases are probably of toxic origin. Cases of chronic meningitis with basilar lesions also may give rise to a symptom-complex suggesting true bulbar paralysis.

The Acoustic Principles Affecting the Conduction of Sound by the Bones of the Head. By Dr. A. A. Gray. —This is a report of the results of an investigation to find out the acoustical principle upon which the tuning-fork tests depend. It is of interest solely to aurists.

A Family with Addison's Disease. By Dr. R. A. Fleming and Dr. J. Miller.—The writers report the occurrence of what appeared to be Addison's disease in a mother and her four children. The illness of the mother, who was twenty-eight years old, dated from her first pregnancy. Her skin was very dark, with blackish spots all over her body, nipples pigmented, and marked pigmentation of the mucous membrane of the mouth had appeared within a few months. There were marked gastro-intestinal disturbance, palpitation of the heart, and great weakness and prostration. (*No mention of anæmia.*)

In all four children the skin had darkened and black spots had appeared all over the body. The eldest child suffered from apparently causeless attacks of nausea and vomiting. (*No mention as to pigmentation of mucous membranes of the mouth in the children.*)

If these children had Addison's disease, it will be the first recorded instance of the kind.

Preliminary Note on a New Quantitative Method for Serum Diagnosis. By Dr. R. T. Hewlett and Dr. S. Rowland.—After mentioning the various methods employed for the dilution of the blood in making the Widal test, the writers describe the following method of their own: Ordinary medium-sized vaccine tubes are two thirds filled with the blood to be examined, and the ends sealed in a flame. The volume of the contained blood is then estimated as follows: The height of the column of blood is determined by means of a movable lens mounted on a vertical scale graduated to two millimetres. One end of the tube is then cut off and it is mounted vertically under the stage of a microscope, all light being shut off by iris diaphragms and by the blood within the tube. On examination the tube presents the appearance of a white circle, the diameter of which may be readily measured by means of a micrometer eyepiece. From the formula $V = D^2 \times L \times 0.7854$ (where V = volume of cylinder, D = diameter of cylinder, and L = length of cylinder) the volume of the blood is calculated. The results are within 0.5 per cent. of being correct, and the time consumed is not more than five or ten minutes.

On the Value of the Agglutination Test as a Means of Diagnosis of the Bacillus Typhosus from Coliform Organisms. By Dr. W. H. Horrocks.—The writer reports the results of experiments with a coliform organism which he isolated from water derived from a polluted surface in a neighborhood where there were several cases of typhoid fever. This organism resembled Eberth's typhoid bacillus very closely in its cultural characters and was agglutinated by strong antityphoid serum.

The experiments show that the strength of the serum used is an important factor, and that no fixed dilution can be laid down which will enable the *Bacillus typhosus* to be at once distinguished from coliform organisms. A powerful serum should be used and the suspected organism should also be tested with the serum diluted to the highest degree which has been found capable of agglutinating a true *Bacillus typhosus.*

Inoculation with Typhoid Vaccine as a Preventive of Typhoid Fever. By Dr. R. W. Marsden.—The writer reports the results of the inoculation of the staff of the Monsall Hospital, Manchester, with typhoid vaccine to prevent infection from typhoid-fever patients. Up to the time the vaccine was used four or five members of the staff of the hospital contracted typhoid fever every year, from 1895 to September, 1899. Beginning in September, 1899, fourteen nurses were inoculated with the vaccine. From that time until the date of writing (March, 1900) no cases of typhoid fever have occurred among the staff. There was one case of ephemeral fever, which, if it was typhoid, was very mild. After inoculation the nurses were allowed to remain in bed for twenty-four hours, and returned to duty the following day.

Antityphoid Vaccine. By Dr. T. Wilson.—The writer reports his experience of the use of the antityphoid serum among troops in South Africa. He gives no figures, but states his belief that if it does not render the typhoid bacilli innocuous, it at least will modify favorably an attack of typhoid fever. He also reports a case of acute gonorrhœa cured in two days by injection of the antityphoid vaccine, and another case of chronic gleet which was greatly benefited by the same procedure.

Epidemic Laryngitis and Tracheitis among Troops on the Voyage to South Africa. By Dr. C. Gibbs.—The writer reports an epidemic of laryngitis and tracheitis observed by him among troops *en route* to South Africa. There were a hundred and twenty cases out of a thousand men. The attacks came on suddenly with shivering or nausea, and a temperature of 102° or 103° F. Incessant cough, with little expectoration; no glandular enlargement. The fever persisted for about a week and descended by lysis. There was no coryza or involvement of the tonsils or nasal mucous membranes. All the cases recovered without complications of any kind.

Report of a Case of Tetanus Treated Successfully by Serum. By Dr. G. L. Roberts.—The writer reports the case of a man, aged thirty-three, who cut his hand while shearing sheep. Subsequently he worked in a potato field. The wound suppurated, and he opened it himself with a dirty pocketknife. When first seen, just one month later, the patient exhibited all the symptoms of tetanus: opisthotonos, rigidity of the head, diaphragmatic breathing, and risus sardonicus. The second day ten cubic centimetres of antitetanus serum were injected, and the same amount was injected daily for nine days thereafter, with the exception of the eighth day, when twenty cubic centimetres were given. Bromidia, chloral, and bromide were given in full doses throughout, also morphine in quarter-grain doses. On the eleventh day the patient was out of danger and costal breathing was noticed for the first time. The temperature never rose above 102° F. The writer notes the following points: The first symptoms were noted twenty-two days after wounding the hand. The effects of the antitoxine were well marked. At first the severity of the tonic state was increased, but after fifty cubic centimetres had been administered the symptoms diminished. Scraping and cauterization of the wound were not as satisfactory as the complete excision afterward performed. "The bacilli were discovered plentifully in scrapings taken from the shears, in the soil of the field at the spot where the patient had been working, *and in considerable quantities in the excised wound.*" (!)

"Growing Pains" as a Symptom of Rheumatism. By Dr. E. M. Brockbank.—The writer calls attention to the fact that "growing pains" are often, if not always, of rheumatic origin, and any inquiry into the cause of a diseased heart (especially of mitral stenosis) should include investigation as to the previous occurrence of such pains. He reports five cases of mitral stenosis in which no history of rheumatism could be elicited except of "growing pains."

Failure of Respiration during Ether Administration. By Dr. G. P. Shuter.—The writer reports a case of respiratory failure in a patient to whom nitrous-oxide gas and ether were being administered by means of a Clover inhaler. All went well until midway through the operation, when respiration failed and the patient became intensely cyanotic. Artificial respiration had to be practised for eight minutes before breathing began again. The writer thinks the respiratory failure in such cases to be due to the direct action of the ether upon the respiratory centre, and not to acute laryngeal spasm. He dwells upon the importance of starting artificial respiration at once in cases of this kind.

On Some Practical Points in Conducting the Administration of Anæsthetics. By Dr. H. B. Gardner.—Among the points brought out by the writer are the following: Those who lift a patient should stand on the same side of the patient, because of economy of space and increased lifting power. The foot of the operating table should be toward the head of the bed and at right angles to it, or *vice versa*. The lifters will then only need to turn a quarter circle to place the patient on the table. This rule holds good even where the bed and table are widely separated.

A Case of Intestinal Obstruction caused by a Band and an Enlarged Uterus. By Dr. C. H. Whiteford.—The writer reports a case of subacute intestinal obstruction in a woman aged twenty-six. Upon operation the uterus was found to be enlarged, exactly resembling one four months pregnant. The jejunum was found to be compressed by a band, three inches long, running from a loop of jejunum to one of the sigmoidal appendices. The lumen of the bowel was only partially obliterated. The band was removed and the patient made an uneventful recovery. The uterus, which at operation was thought to be pregnant, gradually shrank to its normal size. From a history of rectal fistula, the general appearance of the patient, and the intra-abdominal conditions, the obstructing band was thought to be due to preceding tuberculous peritonitis.

Men and Horses Partially Incapacitated by the Bites of Simulium (Sand Fly) in a Hampshire Wood. By Dr. J. Cantlie.—The writer reports the cases of "some dozens" of men out of two hundred Scotch soldiers, who were bitten on the knees by sand flies while engaged in manœuvres in a wood. Their temperature rose to 102.5° F. and their legs became markedly œdematous from halfway down the thighs to the ankles. In a few cases there was inguinal adenitis. In most of the cases the acute symptoms disappeared in thirty-six hours, but a few of the men were laid up for a week. The treatment consisted simply of hot boric fomentations. The horses with the troops also suffered severely along the abdomen and about the genitals. The flies were found to be a species of simulium, and closely related to the dreaded "southern buffalo gnat" of this country.

The Lancet, May 5, 1900.

Then and Now: or, the Influence of Modern Surgery upon Medical Practice. By Dr. F. J. Smith.—An oration delivered before the Hunterian Society on February 14, 1900.

The Causes and Treatment of Movable Kidney. By Dr. C. Mansell Moullin.—The writer calls attention to the fact that the normal kidneys are movable, having a range of up-and-down movement of three to five centimetres. But their anatomical relations are undisturbed. The best test for movable kidney is its failure to reascend on tranquil expiration when the patient is standing upright and has forced the kidney low down by deep inspiration. Where it ascends, the normal relation of the kidney to the diaphragm is retained. The writer has never seen a case of floating kidney—*i. e.*, a kidney with a true mesonephron. He describes the anatomy of the kidney and its surroundings, and states that neither the perirenal fascia nor the fat, separately or together, can maintain the kidney in position when the influence of the abdominal pressure is taken away. Movable kidney is much more common in females and upon the right side of the body. This is due to the shape of the lumbar recesses. In women they are shallower and more cylindrical than in men, which difference in shape is always more marked upon the right side than upon the left. In quadrupeds, on the other hand, the kidneys are securely buried in deep and narrow recesses, protected by the ribs. "The wonder is, not that movable kidney occurs, but that it does not occur more often."

Little can be done in the way of prevention. The general muscular development, especially of the abdominal wall, should be encouraged, avoiding, however, overuse of the right arm. Tight corsets and high heels should be discouraged. When a movable kidney is neglected, the results may be severe; hydronephrosis from kinking of the ureter is not uncommon. The choice of treatment lies between wearing an abdominal belt and nephrorrhaphy. The former rarely succeeds, and wherever there is manifest deformity of the lumbar region with movable kidney, or where there is real distress, the writer always recommends nephrorrhaphy.

Colonial Practitioners and the Public. By Dr. W. Thomas.—Presidential address delivered before the New Zealand branch of the British Medical Association, on February 19, 1900.

The Effect of Alcohol on the Human Brain. By Dr.

Victor Horsley. The Lees and Raper Memorial Lecture.—The writer presents the actual state of scientific knowledge on the total-abstinence question. After describing the function of the cerebrum and cerebellum, he states that after taking small amounts of alcohol, there is an apparent temporary increase of brain activity, which he likens to the racing of an engine when the governor is removed. But this apparent acceleration of the amount of work done is not to be regarded as a real thing, but as an evidence of the paralyzing and deleterious effect of alcohol. Alcohol destroys the special function of the cerebellum, and produces tremor and weakness of the lower limbs. Under the toxic influence of chronic alcoholism the dendrites of the pyramidal nerve cells show swellings and shrinkages, and there is widespread pigmentation in the nerve cells. From a scientific standpoint it can not be maintained that even small doses of alcohol at meals have no deleterious influence, and total abstinence must be the course of those who wish to follow the plain teaching of truth and common sense.

Observations on the Epidemiology of Plague. By Dr. T. F. Pearse.—The writer's observations are based upon a chart showing the courses of three successive outbreaks of plague in Bombay city, one in Poona, and the second outbreak in Calcutta. Among the points noted are the following: Season and temperature have little or no influence in determining the rise or fall of an outbreak; the highest mortality usually occurs just before the final decline; there is an increase of the general mortality for weeks and months before the outbreak definitely shows itself.

Remarks on Vasectomy Relative to Enlarged Prostate and Bladder Atony. By Dr. Reginald Harrison.—This communication has for its object the demonstration of certain physical changes in the bladder which negative the induction of shrinkage of the prostate by vasectomy or other means. From his observations the writer draws the following conclusions: 1. Vasectomy is specially effectual in the early stages of prostatic hypertrophy. 2. Where the prostate has assumed the form and structure of a fibrous growth, some other form of prostatectomy is preferable to either vasectomy or castration. 3. Where secondary changes have taken place in the bladder itself, in the form of sacs or trabeculæ, the possibility of restoring its natural functions by any means is extremely unlikely.

Three Cases of Surgical Interest.—By Dr. T. F. Gardner. The writer reports the following cases: 1. Amputation of the breast for scirrhus in a patient aged eighty-two years and seven months. Operation in September, 1899; no recurrence to date. 2. Ruptured pyosalpinx complicated by fibroid tumor of the uterus; abdominal section; hysterectomy; recovery. 3. Trephining for threatened cerebral abscess; urgent symptoms of meningitis; arrest and recovery.

La Presse médicale, April 21, 1900.

Iconographic History of Cripples (culs-de-jatte).—M. Henry Meige gives a graphic account of the congenital and artificial cripples deprived of their arms and legs and who put their deformity to use in begging. The paper is uniquely illustrated with old cuts.

Diagnosis of Pneumothorax with a Pulmonary Valve.—M. A. Bédère recognizes three varieties of pneumothorax—one in which the opening from the lung to the pleura is patent, one in which it is closed, and a third form in which the opening in the lung forms a valve through which the air from the bronchi can pass into the pleura. For the purpose of diagnosticating the last variety, he has devised a manometer consisting of a glass jar filled with water into which he dips a glass tube connected with a rubber tube having at its end an ordinary hypodermic needle. When the needle is thrust into the pleural cavity, bubbles of air pass through the water so long as the pressure of the air in the pleura is greater than that of the atmosphere. If a pulmonary valve exists, continuing to send air into the pleura, this phenomenon continues.

La Presse médicale, April 25, 1900.

Pulmonary Gangrene following Gastro-entero-anastomosis.—M. Peyrot and M. Milian report such a case. In seeking the cause of gangrene of the lung, which is not very rare after these operations, they say that many theories have been advanced to explain the phenomenon. Anæsthesia, the dorsal decubitus, and post-operative septicæmia are the more commonly assigned causes. The lungs are the seat of preference because the septic material is transmitted to them by an embolus by way of the veins from an ulcer or from a septic focus. Bacterial infection may reach the lungs from the abdominal wound either by way of the veins or the lymphatics. Since gastric lavage or too early feeding by mouth of fermentable food may start up the peritoneal irritation which sends forth the septic material into circulation, the authors advise rectal feeding after these operations until the peritoneal scar is well healed.

Rapid Diagnosis of Rabies.—M. V. Babes disputes the assertions of Van Gehuchten that the early diagnosis can be made by an examination of the ganglia. He asserts that a histological examination will always disclose severe and uniform lesions in the gray matter of the medulla and the bulb. His histological observations correspond with the symptom-complex which predominates with medullary and bulbar expressions.

L'Indépendance médicale, April 25, 1900.

Post-partum Hæmorrhages.—M. Pinard, taking as his text a multipara who had a profuse hæmorrhage after spontaneously delivering herself of the placenta five minutes after the birth of the child, mentions the causes of uterine hæmorrhage after delivery. Although women with albuminuria are said to be subject to post-partum hæmorrhage, Pinard does not think they are more so than other women. Women with cardiac disease may have a hæmorrhage after the child's birth, due to the sudden change of blood pressure. Women with hydrops amnii, a large placenta, and a large child, may bleed profusely, especially if they have had atonic uteri in previous labors. Finally, the receipt of bad news or an unfavorable emotional excitement may provoke a premature labor with a post-partum hæmorrhage. The treatment is the insertion into the uterus of the hand carrying an irrigating tube, immediately after delivery, and water at 122° F. is allowed to flood the uterus. This is not too hot, Pinard says. When the uterus contracts on the hand and the water comes away clear, there need be no further fear.

Gazette hebdomadaire de médecine et de chirurgie, April 29, 1900.

Hæmothorax from Penetrating Wounds of the Chest.—M. Bartoli, in his thesis, says that the diagnosis must lie between an injury to a large or a small vessel and the integrity of the thoracic organs. When the respiration can not be heard behind and laterally at a line passing through the scapula, and when this is accompanied by a tympanitic note above, when there is a pulse of from 110 to 120 and a cold sweat, a large vessel has been injured and a bronchus of some size has been invaded. On the other hand, when the respirations are not increased above 25 or 30 to the minute, when flatness is limited to the base of the lung posteriorly and the pulse is not above 105, the hæmothorax is limited and a small vessel has probably been cut. Some time after the injury, pneumonia or pleurisy may complicate the injury and render diagnosis more difficult. The signs of a hæmothorax at this time are apt to be abundant external hæmorrhage or hæmoptysis, syncope, dyspnœa, and subcutaneous emphysema. The treatment is to be directed toward securing the injured vessel, to removal of the blood if asphyxia is threatened, and to disinfect the area of the injury.

Gazette hebdomadaire de médecine et de chirurgie, May 3, 1900.

Vaccination and Variola in Pregnancy.—M. C. Vinay says that in vaccinating pregnant women care must be taken on account of their susceptibility to infectious disease at this time. Vaccination should not be performed upon the leg even at the request of the patient, because the venous stasis existing at the time may cause a possible sepsis to extend. One of the advantages of vaccinating women when they are gravid is to render immune the infant from vaccine and from variola. Pregnant women suffering from variola are often severely ill on account of the self-intoxication which, Pinard has pointed out, is an accompaniment of pregnancy.

Le Progrès médical, April 28, 1900.

Semeiological Value of the Great Toe Reflex.—M. Verger and M. Abadie think that this reflex, the sign of Babinski, is very delicate in its execution, and may therefore give rise to error. When present, it probably shows a lesion in the pyramidal tracts; but it is too variable in one and the same subject to constitute as important a sign as the knee-jerk or the reflex of the tendo Achilles. Schafer's modification consists in flexing the toes and thus evoking a cutaneous reflex which may be the sign of a cerebral lesion. The authors assert that Schafer's sign is not, as he alleges, an antagonistic reflex.

Lyon médical, April 29, 1900.

Blennorrhagic Phlebitis.—M. Batut reports a case of a man of twenty-three who had as a sequel to an acute gonorrhœa a phlebitis of the corpora cavernosa which produced in turn a gangrene of the glans penis, of the prepuce, and of the anterior urethra.

Is the Coagulation of the Blood Accompanied by Electric Phenomena?—M. Chanoz and M. Doyon, from a series of experiments, conclude that if there are electric phenomena accompanying clotting of the blood, they are not very marked, and measure less than $\frac{1}{4000}$ of a volt.

Deutsche Medizinal-Zeitung, April 26, 1900.

The Present Status of Light Therapy.—Dr. W. Winternitz says he has achieved good results in the treatment of chronic blood diseases and digestive disturbances, mainly, however, in conditions of weakness and in convalescence from debilitating diseases, from the use of sun baths and the electric light. He says these therapeutic measures beneficially influence the circulation and composition of the blood, increase metabolism, and influence diseases of the skin of bacterial origin, such as lupus. Many functional diseases and some of the diathetic diseases are also benefited by their use. In anæmia, chlorosis, and scrofula, the action is almost specific.

Deutsche Medizinal-Zeitung, April 30, 1900.

The Therapeutic Uses of Hot and Cold Air.—Dr. A. Frey says that by the use of hot-air apparatus anæmia or hyperæmia can be produced at will and that in this way the activity of the cells can be increased or diminished. The higher the temperature, the greater the result. The various neuralgias yield to this treatment in remarkable fashion, and it has been found useful in those forms of rheumatism which follow or are dependent upon gout. On account of the influence upon the peripheral circulation, the capillary circulation can be improved in such conditions as angina pectoris. The hot and cold bath alternating upon the chest is best for this ailment. In inflammatory conditions of the internal organs, the cold-air bath is indicated if the inflammation is acute, the hot air if it is a torpid inflammation.

Wiener klinische Wochenschrift, April 26, 1900.

The Descendants of Parents Hereditarily Syphilitic.—Dr. E. Finger points out the great difficulty of obtaining accurate histories from persons supposed to be tainted with hereditary syphilis on account of the secrecy observed by family physicians and the fact that men do not communicate to their wives or children the fact that they have had an acquired lues. He emphasizes the greater difficulty of ascertaining important data in the third generation. Cases are recorded, however, in which the heredity and contagiousness of syphilis can not be doubted even after the lapse of many years, and theoretically it must be admitted, therefore, that syphilis can be transmitted to the twentieth generation, even though this is rare. To prove this, three conditions are necessary: 1. Inherited lues must be absolutely proved to exist in the second generation. 2. Acquired syphilis in the second generation must be absolutely excluded. 3. The hereditary nature of the syphilis in the third generation must be proved beyond cavil. From a study of the cases in literature, Finger admits that these postulates may be fulfilled, but this has not yet been scientifically demonstrated. (To be continued.)

Intestinal Cancer in Children. By Dr. Zuppinger.

Wiener klinische Wochenschrift, May 3, 1900.

Operative Results in Carcinoma of the Rectum.—Dr. J. Hochenegg gives his results in one hundred and seventy-one sacral resections of the rectum for all purposes, including one hundred and twenty-one of rectal cancer, of which one hundred and eleven recovered and ten died. He prefers the sacral method of attacking these neoplasms, as by the resection in continuity fæcal continence is maintained and primary healing is the rule. Among the disadvantages, however, are an occasional fæcal fistula or a stricture at the site of the sutures. Hochenegg has estimated a percentage of twenty-five permanent recoveries in his cases.

Technics of Wedge-shaped Osteotomy of the Tibia.—Dr. L. Luksch describes the Meyer-Schede operation for genu valgum. A wedge-shaped piece is chiseled out of the tibia in its upper third, its base being a trapezium. The two ends of the bone must fit accurately. No damage is done in this way to the peroneal nerve. No tension of the fibula exists after this operation. A small piece is likewise removed from the fibula in its lower third in a diagonal direction from without inward.

Descendants of Hereditarily Syphilitic Persons. (Continued article.) — Dr. E. Finger continues his studies on the cases reported in literature and reaches the conclusion that degeneration is less frequently the result of syphilis in the third generation than a limitation of the reproduction of children capable of living—"a decimation of the race." The intensity of the infection seems to become diminished in the third generation, although degenerative changes are not very marked.

Wiener klinische Rundschau, April 22, 1900.

A Case of Gastro-colic Fistula.—Dr. Walter Zweig relates the case of a woman who had had an ulcer of the stomach for eighteen years. For eleven months she had suffered from fæcal vomiting and uncontrollable diarrhœa. The diagnosis, which lay between a chronic ileus and an abnormal communication of the stomach with the colon, was finally made as a gastro-colic fistula. Under local anæsthesia, the fistulous portion of the colon was anastomosed laterally with the upper part of the sigmoid flexure, and the portion of the colon attached to the gastric wall was closed by a purse-string suture. The recovery was perfect.

The Casuistics of Tracheal Stenosis. By Dr. O. Frauhenberger.

Therapeutic Value of Iodipin.—Dr. J. W. Frieser says that this drug is superior to other iodine preparations in replacing iodide of potassium. It is without the disadvantages of the latter drug and is very useful in the treatment of the later stages of syphilis, in asthma, and emphysema. It is quickly absorbed and slowly excreted.

Wiener klinische Rundschau, April 29, 1900.

Uterine Perforation in Gynæcological Operations.—Dr. Richard von Braun-Fernwald says that many of these mistakes arise from operations being done by inexperienced operators, although it has happened to very good surgeons that the uterus has been perforated. This may occur with the sound or by the curette. The slipping of a sound into one of the tubes, although rare, may give the impression of the instrument's going into the abdominal cavity. This has been authentically proved in two instances, but it is doubtful if the other cases reported in the literature are to be relied upon. (To be continued.)

Membranous Dysmenorrhœa.—Dr. Kollman, after a study of several cases, has reached these conclusions: Membranous dysmenorrhœa has no connection with pregnancy or abortion, is not productive of sterility, and can become cured spontaneously. The fibrinous membranes are to be regarded as true dysmenorrhoic membranes and are not dependent upon an inflammation of the uterine mucosa. He regards the fibrinous membranes as the product of necrosis originating in a hæmorrhage and transudation.

Casuistics of Tracheal Stenosis. — Dr. O. Frankenberger concludes his article by citing a case of syphilitic stenosis in which the diagnosis was rendered difficult by the unusual appearance of the laryngeal picture.

Wiener medizinische Blätter, April 26, 1900.

Round Ulcer of the Duodenum. By Dr. Robert Bolton. (To be continued.)

The Surgical Treatment of Basedow's Disease. By Dr. J. Schulz.

The Treatment of Respiratory Diseases with Taeschner's Pertussin.—Dr. J. A. Goldmann finds pertussin a harmless antispasmodic and expectorant, and says that few cases of pertussis withstand its use. It is well borne by children. The dose varies with age. Children can take from one to two teaspoonfuls four or five times a day. Adults may take a dessertspoonful an equal number of times.

Wiener medizinische Blätter, May 3, 1900.

Round Ulcer of the Duodenum.—Dr. Robert Bolton gives as the symptoms, pain in the parasternal line just below the gall bladder, reflex vomiting, hæmatemesis, and bleeding from the intestines. Jaundice may or may not be present. Perforation at the site of the ulcer is a common and dangerous outcome and peritonitis is, naturally, a result of the perforation. Treatment is surgical before or after the perforation.

Treatment of Nervous Diseases due to Excess of Uric Acid.—Dr. J. Hirschkron finds that many of the functional nervous diseases are due to an excessive amount of uric acid in the blood. He treats these cases with baths and mineral waters, local applications of ichthyol to painful areas, and gives some iron preparation if there is an accompanying anæmia.

Prager medicinische Wochenschrift, April 19, 1900.

Case of Cysticercus in the Spinal Cord.—Dr. R. Pichler reports a case in which the ovules of *Oxyuris vermicularis* were found not only in the brain, but also in the muscles and in the eleventh dorsal and first lumbar segments of the spinal cord. An interesting fact was that the cysticerci were typically those of *Tænia solium,* although only oxyuris was found in the intestine.

The Treatment of Melæna Neonatorum.—Dr. Lahmer accepts the view of Hochsinger that the cause of melæna neonatorum is an epistaxis. In the recent treatment of a case he found the bleeding point in the nose, and stopped the hæmorrhage with gauze dipped in a solution of ferropyrine. The child recovered.

Complete Rupture of the Uterus.—Dr. Berthold Adler reports a case which he saw shortly after death, in which the uterus had ruptured in a woman who was pregnant for the fifth time. Four previous craniotomies had been performed upon her. She had a much contracted pelvis, and it was evident from an examination of the fœtus, which lay in the abdominal cavity with the placenta, that the child had presented normally. The author thinks that the rupture was due to the narrow pelvis, the previous obstetrical manipulations, and the woman's bad general condition.

Prager medicinische Wochenschrift, April 26, 1900.

A Case of Pseudo-bulbar Paralysis. By Dr. E. Kohn.

Long-continued Fever of Uncertain Origin.—Dr. Munzer reports a number of cases in which for a long time the diagnosis was obscure. In some no diagnosis was made. He regards many of these cases as septic, originating in a malignant endocarditis. From his observations he is inclined to consider them as types of rheumatism without articular symptoms. The diagnosis must be made from the cardiac symptoms if they exist, the enlarged spleen, the character of the fever, which shows evening exacerbations with later irregular chills, passing pains in the bones and joints, and in subcutaneous hæmorrhages. The prognosis is always grave. The treatment consists of absolute rest in bed, avoidance of all excitement, and a bland diet.

Riforma medica, April 10, 11, and 12, 1900.

Phlebitis of the Portal Vein and Cirrhosis of the Liver. By Dr. Attilio Colpi.—There are on record a large number of experiments dealing with the effect of lesions of the portal vein, involving its occlusion or a periphlebitis, upon the development of cirrhosis of the liver. The author gives in detail the result of the researches of Solowieff, Salvioli, and Mafucci, who are the most recent writers upon this theme, and reports two cases of cirrhosis of the liver that confirmed the views of these observers. The procedures employed by these authors varied, some of them almost occluded the portal vein by means of a ligature, while others only surrounded the vein with a ligature, not so much to diminish the lumen of the vessel and thus to produce a profound stasis in the liver, as to excite an inflammatory process in the adventitia of the vein, a process which gradually ascends into the ramifications of the portal system in the liver itself. Both methods ultimately have the same effect—they diminish the influx of portal blood to the liver, and result in the formation of connective tissue in the stroma of the organ. In the two cases reported by the writer the autopsy showed the presence of thrombi which occluded the portal vein, as well as thickening of the walls of the vein which reached into the liver.

Riforma medica, April 13, 1900.

Phlebitis of the Portal Vein and Cirrhosis of the Liver. (Continued.) By Dr. Attilio Colpi.—The author comments upon the cases of cirrhosis of the liver which he reported in the preceding issue, and sums up his findings in the following conclusions: 1. Cirrhosis may be secondary to thrombi in the portal vein. 2. The thrombosis is primary, and not secondary to the cirrhotic process in the liver. 3. The thrombus does not occlude the lumen of the vein suddenly, but develops gradually, so that the organism has time to become accustomed to the new conditions. 4. The formation of interstitial connective tissue in the liver is secondary to the thrombosis of the portal vein. Owing to the gradual diminution of the blood supply of the liver from the portal vein, the functions of the hepatic cells are gradually abolished, and atrophy and destruction of these cells follow, because of the insufficiency of compensation offered by the so-called internal branches of the vena portæ. The partial destruction of the hepatic cells is then replaced by a hypertrophy of the connective tissue of the liver. 5. Finally, when the vein is completely occluded, the pressure of the blood in the liver is raised, and thus contributes to the destruction of the cells.

Riforma medica, April 14, 16, and 17, 1900.

A Case of Gonorrhœal Stomatitis. By Dr. P. Colombini.—The patient was a woman, aged forty-two, who complained of severe pain in the mouth when any article of food was taken, especially if hot or cold, and of acute pain and discomfort on mastication. The trouble began with a feeling of dryness, heat, and burning in the mouth, followed by the appearance of a thick, purulent secretion accompanied by considerable salivation, a disgusting odor of the breath, and a repulsive taste in the mouth. With this there was a marked weakness and a febrile movement. The patient was a prostitute who admitted having practised coitus *ab ore*. She had never had any trouble with her mouth before; denies syphilitic infection, but admits having had attacks of gonorrhœa of the genitals. She never used anything but water after coitus *ab ore*. On examination of the oral cavity the writer found that she had not exaggerated the fœtid odor which emanated from the mouth. The tongue was swollen and reddened, the swelling being more apparent at the anterior part, while the redness was diffused all over the organ. The point of the tongue was intensely red, and could be moved only with difficulty. The mucous membrane of the mouth was also swollen and red, the gums were œdematous, red, and bled easily. On the tongue, the gums, and the mucous membrane he noted some whitish-gray spots, more or less round, and about the size of a pea, or even larger, where several patches were confluent. These lesions were very slightly elevated above the surface of the tongue, etc., and could not be detached. They were surrounded by areolæ, which were more intensely red than the rest of the mucous surface. These spots on close examination proved to be areas of epithelium infiltrated with suppuration. They did not ulcerate, but in some places formed superficial erosions. On the floor of the mouth were small pools of thick pus. The glands of the neck were enlarged and painful. Bacteriologic examination of some of the spots and of the pus revealed the presence of gonococci. The treatment consisted of swabbing the mouth with cotton saturated with a one-half-per-cent. solution of nitrate of silver, followed by washing several times daily with a solution of potassium permanganate (1 to 1,000). The infection was conquered in eight days. In conclusion the writer briefly reviews the literature of the subject.

Gazetta degli ospedali e delle cliniche, April 8, 1900.

Streptococciform Modifications of Koch's Bacillus, and their Probable Prognostic Significance. By Dr. Stefano Mircoli.—It is well known that the bacillus of tuberculosis may, under certain circumstances, assume the morphologic type of a chain coccus. Strauss describes such modifications in his classical work on tuberculosis. Mafucci, Metschnikoff, and De Renzi have studied the question of the alterations in morphology and in staining qualities that the bacillus undergoes in its passage through the organism. The resistance of the body, manifested by phagocytosis, weakens the very structure of the germ, renders it less easily stainable, and brings about a gradual involution of the bacillus toward the streptococcic type. Auclair has shown that if a culture of typical Koch's bacilli is mixed with ether and shaken for some time in a test tube, the culture will be found to separate into two layers; the upper will contain exclusively streptococcic forms of the germ, while the lower will show nothing but the typical rods of Koch. The writer boiled a culture of tubercle bacilli for a considerable time in water, and found that most of the organisms retained their morphologic characteristics for many hours; but very slowly a change would occur in the bodies of the germs, the interspaces that are unstainable in the typical germ would become larger, and the component parts of the body would assume the rounded appearance of the links of a streptococcic chain. This seems to be the prelude to the dissolution of the germ, and is analogous to the effect of the phagocytes upon the bacillus in the blood of animals. At the same time the germ loses its staining qualities. The following conditions then produce a change in the morphology of the bacillus of tuberculosis, giving it the appearance of a chain of cocci: 1. A congenital resistance of the body. In certain animals the germ is usually found as streptococcus. 2. Advanced age of cultures. 3. The resistance of the medium upon which the germs grow. 4. The effects of the contest of the bacilli with living cells. 5. Ether. 6. Boiling. The writer reports five cases in which he found the attenuated form of the germ in the sputum in excess or to the exclusion of the typical bacilli. He concludes, from a study of these cases and from experiments upon rabbits, that the streptococcic form of the germ is found: 1. In cases that had been treated by Maragliano's serum, and in which such treatment resulted in considerable improvement. 2. In cases of latent tuberculosis. The writer emphasizes the fact that the streptococcic form of the germ is from two to eight times longer than the bacillus. As to the prognostic significance of the modified form, he believes that the germ in the streptococcic shape is less virulent than the typical Koch's bacillus, and that the presence of such attenuated forms points to a less unfavorable prognosis.

Vratch, April 1, 1900, O. S. (April 13, N. S.).

On the Question of the Therapeutic Application of Electric Light. By Dr. D. A. Kessler.—The methods of using electric light for therapeutic purposes may be said to be three in number: 1. Illumination of the part to be treated by electric light without heat rays, the latter being excluded in some way by means of screens, etc. 2. The same with the addition of heat rays—*i. e.*, electric heat and light rays acting together upon the affected part. 3. Combination of the second method with massage by friction of the parts with a specially constructed incandescent bulb—in other words, electric light, heat, and massage. The author gives the results of his experience with the second method, and cites a number of clinical histories to support his conclusions.

The intensity of the light used in these cases varied from sixteen to one hundred candle power, according to the extent of the area to be treated. The author believes that the appearance of perspiration on the illuminated skin must be considered as a signal to close the sitting, as it indicates that the full effect of the light has taken place. He repeats the *séances* twice daily in cases where the pain is acute and promptly recurs; in less acute cases he uses the electric light once daily until amelioration sets in. When the treatment is applied to small areas the patient may be allowed to go out into the street after fifteen minutes, but the portion of the skin that had been illuminated must be covered with cotton for about an hour after the sitting. In cases where large areas of skin are illuminated, especially in those where the chest is treated, the patient must not leave the house for at least half an hour for fear of exposure to cold.

The apparatus employed by the author consists of an insulated handle to which is screwed the incandescent lamp, which in turn is surrounded by a parabolic reflector of the proper focus. Two wires lead from the lamp to the battery or to the street-current switch. The writer's conclusions concerning this form of electrotherapy are: 1. The advantage of this method is that it gives much more prompt cures in the cases which can be appropriately treated with electric light. 2. Pain is very quickly relieved, and even may disappear entirely after the first *séance* in acute cases. 3. Hæmorrhagic effusions are quickly absorbed under the influence of the illumination. If the treatment is begun before the hæmatoma appears after an injury, the occurrence of the blue mark is prevented. 4. Effusions into the joints are more rapidly cured by this method than by any other. In acute rheumatism and in traumatic effusions electric illumination is above competition. 5. The treatment of eczema is shortened by the application of the electric light to the affected surfaces.

On the Question of the Treatment of Disease by Means of Electric Light. By Dr. J. G. Gabrilovitch and Dr. L. O. Finkelstein.—Stein, a Russian physician, was the first to use the electric incandescent lamp as a therapeutic agent. In making an examination of the mouth of a woman who was suffering from an abscess in the antrum of Highmore, he introduced a small incandescent bulb into the oral cavity for a few seconds. This caused the sensation of fullness in the palate and the throat to disappear, and at subsequent sittings the pain in the bones of the face was relieved. When he had convinced himself of the analgetic quality of the electric light he tried this method in acute rheumatism and in other painful affections. Dr. Stein could not determine whether the chemical portion of the spectrum is responsible for the effect of the electric light, whether the heat rays were the active part of the lamp, or whether the whole spectrum produced the therapeutic effect above described. This question has not yet been solved in spite of the large amount of experimental work that has been done on the subject. We know, however, that different portions of the spectrum produce different physiological effects upon cold- and warm-blooded animals. Finsen uses the chemical portion, containing the blue, violet, and ultraviolet rays, in the treatment of lupus, but the majority of other observers use the mixed white light. The experiments of Godneff, Gebhardt, and Finsen show that the action of electric light penetrates into the tissues, and thus this new therapeutic measure has been applied to internal maladies.

Having observed the beneficial action of the light in neuralgias and in rheumatism, the writers began to treat the consumptives in their sanitarium who suffered from rheumatism by means of electric illumination. At the same time they cherished a secret hope that the new treatment would also benefit the tuberculosis—a hope based upon the bactericidal action of electric light which is now known through the results obtained by Finsen in lupus.

The *séances* took place in the morning, and mixed white light was used. The sittings lasted about two hours daily. No attempt was made to exclude heat rays. The strength of the current used was ten to twenty ampères, and the patients were placed about two metres away from the source of light, so as to produce a feeling of pleasant warmth. The distance was increased if a patient felt weak during a sitting. The number of patients thus treated was fifty. Of these, two had acute articular rheumatism, four exacerbations of chronic rheumatism, one syphilitic pains in the extremities, seven acute muscular rheumatism, one acute articular and muscular rheumatism, one intercostal neuralgia, one sciatic neuritis of the right side, thirty-one chronic dry tuberculous pleurisy and acute dry pleurisy, and two tuberculous inflammation of the periosteum of the ribs. (To be continued.)

The Effect of Cream Butter upon the Secretion of the Gastric Juice. By Dr. V. A. Virschillo. (A preliminary communication.)—The author examines the question as to the value of cream butter as a substitute for cod-liver oil. The disadvantage of cod-liver oil lies in the fact that it produces digestive disturbances, and the writer investigated the effect of butter made from cream upon the digestive organs in order to determine its comparative value. He made qualitative and quantitative tests of the stomach contents of ten patients who were fed on cream butter, and arrives at the following conclusions: 1. Cream butter diminishes the amount of hydrochloric acid and of pepsin in the gastric juice. 2. The stimulating effect of cream butter upon the secretion of the gastric juice is feeble at the beginning of digestion, and becomes stronger as the process advances. 3. Peptonization of albuminous bodies takes place more rapidly in the presence of cream butter than without the latter. 4. The work of the glands of the stomach is weakened by the presence of cream butter, and does not last longer than when this substance is absent. Hence cream butter must be assigned a prominent place among the fats that are used as foods on account of its high nutritive value, its pleasant taste, and its digestibility.

Ingrowing Toe Nail. By Dr. A. I. Koudriaschoff. —The operation for ingrowing toe nail that has found favor with most surgeons is that of Dupuytren. It consists of the introduction of a blade of a pair of straight scissors under the middle of the nail, and division of the nail substance into two halves. The scissors are then withdrawn, a forceps introduced, and the half of the nail that corresponds to the ingrowing edge pulled out from the nail bed and removed. In some cases the other half of the nail is also removed in the same way.

Anomaly of the Hard Palate as a Cause of Insufficiency of the Vocal Cords. By Dr. E. N. Maliutine.—The hard palate serves as a sounding board for the human voice. It reflects the sound as it comes up from the larynx, and hence its structure is intimately connected with the quality of the voice in singing and speaking. Two years ago the writer published a series of observations on this subject, and since that has been constantly on the alert for instances that confirm his conclusions. In the present paper he describes the case of a student, aged twenty-eight years, who came to him on account of the peculiar disagreeable falsetto quality and abnormally high pitch of his voice. He had been treated for paralysis of the vocal cords by a specialist without success, while another laryngologist told him that he had no paralysis but only a weakness of the cords, and advised him to practise speaking in a bass voice. This helped him to some extent, but he could only speak in the low-pitched voice with an effort. On examination the writer found that the young man's palate, while sufficiently high and long, was so abnormally narrow that the distance between the last molars did not exceed two centimetres. So long as the patient was a child, his voice had the natural quality and high pitch of a boy's voice; but when puberty came on and the change of voice was expected the pitch did not change, but the quality became falsetto on account of the growth of the vocal cords which was in disproportion to the narrow palate.

The vocal cords were found to be normal. In phonating the low notes the cords approximated perfectly, but in singing the higher notes the left cord slightly separated from the other, leaving a small interspace. The exact cause of this was not clear, but it probably depended on the greater adaptability of the right side to an increased amount of work which was entailed in the production of the vocal sounds on account of the lack of resonance in the palate.

Medical Statistics of Taschkent. By Dr. Schwarz.

Bulletin of Johns Hopkins Hospital, April, 1900.

An Unusual Method of Performing Hysteromyomectomy. By Dr. Otto G. Ramsay.

A Squamous-celled Carcinomatous Degeneration of an Ovarian Dermoid Cyst; also an Adenocarcinoma of the Ovary, Associated with an Ovarian Dermoid Cyst. By Dr. Lindsay Peters.

Pulmonary Tuberculosis, with Diffuse Pneumonic Consolidation, in a Lion. By Dr. W. G. MacCallum and Dr. A. W. Clement.

Arsenical Pigmentation and Keratosis. By Dr. Louis P. Hamburger.—The author described to the Johns Hopkins Hospital Medical Society in December, with presentation of the patient, a case in which a man presented a widespread pigmentation associated with keratosis of the hands and feet, due apparently to the protracted use of arsenic, on and off, in medicinal doses. There was also some ascites, considered by the author to be probably due likewise to the arsenic, as no other ætiological factor was perceptible. The pigmentation is thus described: "There is a more or less deep brown discoloration over almost the entire body. The pigmentation as it appears over the abdomen may be taken as a type of this discoloration; differences in degree are presented by the skin in various localities. The skin in this situation is of a mottled yellowish-brown color; the mottling is due to small rounded areas of less pigmented, almost white skin, alternating with similar areas more deeply colored. Here and there are little dark, almost black, mole-like spots. The skin feels natural and is at points a little scaly. The face is slightly involved; it is freckled; the complexion is muddy. On the neck, particularly at the back and the sides, the discoloration is marked, being less punctate and more diffuse than over the abdomen. Still more diffuse is the coloring of the axillary folds; they are uniformly colored a deep brown. The punctate arrangement is resumed over the shoulders and arms, being more marked over the posterior and internal aspects of the limbs. The discoloration is slight over the forearm and practically absent over the hands. The chest and upper part of back are slightly involved; the areolæ, however, are of a dark chocolate-brown color. The abdomen and lower half of back are markedly pigmented. The inguinal folds, buttocks, and internal aspects of the thighs are strikingly dark. Toward the lower thirds of the thighs the pigmentation fades; the skin of the legs is only dotted here and there with spots of pigment; the feet are free from the discoloration."

Uncontaminated Urine. By Dr. Howard A. Kelly. —A glass catheter, sterilized by boiling five minutes in a soda solution and kept in an open-mouthed bottle filled with five-per-cent. carbolic solution or 1-to-1,000 bichloride-of-mercury solution, with some cotton in the bottom of the bottle to protect the end, is used. A piece of rubber tubing covers an inch or more of its outer end and projects about two inches beyond it. The attendant's hands having been sterilized, the labia are separated and the urethral orifice cleansed with a pledget of cotton saturated in boric solution. Two sterile finger cots are next placed on the thumb and index of the attendant's right hand and, thus protected, the catheter is grasped by its outer end and lifted from the receptacle and introduced into the urethra. The urine is then allowed to run for a few seconds, after which the rubber tubing is pulled off and the urine collected in a sterilized test tube. This plan has not failed in the author's hands to secure uncontaminated urine.

A Note on a Series of New Vesical Specula. By Dr. Howard A. Kelly.

The Scottish Medical and Surgical Journal, April, 1900.

On Heredity in Disease. By D. J. Hamilton, M. B. —The author formulates the substance of his remarks as follows: 1. There is no evidence proving that diseased conditions of body, excited by external agencies, using the term in its broadest sense, can be transmitted hereditarily through generations. 2. That the various hereditary tendencies or predispositions to disease of the hereditary type have arisen as variations in the germ plasm. 3. That these predispositions to disease probably extend far back into the history of the human race, and break out only occasionally, in accordance with the laws of atavism. 4. That external agencies are merely the means of bringing them to light. 5. That there is little if any reliance to be placed in the evidence bearing upon the influence of maternal impressions. 6. That there is no reason to believe that telegony may not prevail in the case of hereditary predisposition to disease, as it evidently does in regard to other characteristics.

Note on Levurine. By Dr. A. R. Simpson.—Professor Simpson records cases of carbuncle, acute pneumonia, amygdalitis, beginning appendicular inflammation, post-partum sepsis, and threatening pelvic cellulitis post partum treated by levurine, which is the designation given to a dried extract of beer yeast (*levures de bière*), prepared by M. Couturieux, chemist, and described by him and Dr. Aragon in an article in the *Bulletin médical* for July 5, 1899. They were stimulated to the preparation of the drug by a paper in the same journal in 1897, on the use of barm in diabetes mellitus, in which Professeur agrégé Cassaët, of Bordeaux, and M. Beylot, licentiate in science, had recalled previous observations as to the value of yeast in the treatment of furunculosis. Levurine is, therefore, not a new drug, but the yeast of beer so prepared that we have it concentrated in powder form, always fresh, constant in its action, and in an easily administrable form. It may be taken in beer or aerated water, or, to those for whom the taste is too repugnant, in cachets. The dose is a teaspoonful, to be given before food, three times a day if necessary, until the desired effect is attained of arrest of suppuration and reduction of temperature. Whether the levurine produces its effect by counteracting, as Cassaët and Beylot had suggested, a latent glycæmia, or by acting as a germicide to streptococci and staphylococci, or as an antagonist to their toxines, or in whatever way it works, the results of its administration in the cases reported are striking.

Albuminuria, Multiple Pregnancy, Papyraceous Fœtus, and Placenta Prævia. By James Ritchie, M. D.

The Diagnosis of Chronic Empyema of the Maxillary Antrum. By G. Hunter Mackenzie, M. D.—The author reports cases illustrative of the proportions that (1) chronic empyema of the maxillary antrum may be present without anterior but with posterior nasal discharge; and (2) it may be present for some time without anterior or posterior nasal discharge, but with the development of an odor perceptible by the sufferer only. The condition of the maxillary antrum ought not to be overlooked in cases of parosmia, more especially when the complaint is unilateral.

On the Disturbances of the Sympathetic System in Lobar Pneumonia. By J. Eason, M. B.—The author's investigations of a large number of cases lead him to recognize certain conditions as common in pneumonia pointing to disturbance of the sympathetic system. These are inequality of the pupil, flushing, pallor, proptosis of the eyeball, and the cerebral symptoms so often associated with apical pneumonias. The inequality of the pupils appears to depend upon unusual dilatation of one pupil. The absence or presence of inequality seemingly depends on the part of the lung affected. It may be expected in apical pneumonia but not in basal. Flushing of the cheek is often found on the same side as the pneumonia. It seems probable that the physiological explanation of this may be an irritation of the vasodilator fibres for the face, which course through the thorax from the first to the fifth dorsal nerves toward the inferior cervical ganglion. Pallor, on the other hand, may be due to an irritation of the vaso-constrictor fibres for the face passing from the second, third, and fourth dorsal nerves to the inferior cervical ganglion. The more easy stimulation of vaso-dilator than of vaso-constrictor fibres corresponds with the greater frequency and durability of flushing than pallor. Proptosis of the affected side may be in like manner explained by the fibres of the sympathetic, which act on Müller's muscle, passing from the upper four or five dorsal nerves to the sympathetic in the neck. The author concludes: "The part of the sympathetic already so frequently spoken of possesses one other important function—viz., it supplies the accelerator fibres to the cardiac plexus. Is it possible, in apical pneumonias or other cases of pneumonia in which there are evidences of what have here been considered disturbances of the sympathetic, that we may sometimes expect to find the characteristic respiratory-cardiac ratio of pneumonia disturbed by the occurrence of irritation to these accelerator fibres? This question is prompted by theoretical grounds only, as no clinical observations were made regarding it in any of the fifty-four cases."

Edinburgh Medical Journal, April, 1900.

Preventive Operation in Acute Inflammation of the Appendix. By Mansell Moullin, F. R. C. S.—The author argues for preventive operation under certain conditions before any complications set in, as distinguished from early operation when they are urgently impending or have begun to set in. He says:

"It is admitted that at the onset of an attack of acute inflammation of the appendix, when there is a rapid pulse and the patient is suffering from severe pain, it is impossible to say what is going to follow, whether it will be gangrene of the appendix, or ulceration, or perforation or acute septic lymphangeitis, or portal pyæmia, or merely circumscribed suppuration. In some of these a preventive operation is the only hope. In the others an operation must be performed at last. It is perfectly fair, therefore, to ask which alternative, in the present certainty of abdominal surgery, will give the patient the better chance of life—to make a small exploratory incision in the right iliac fossa, before suppuration or gangrene has set in, and deal with the appendix according to its condition? or to wait, in the hope that the consequences which are inevitably fatal will not occur, and that suppuration, if it does set in, will be circumscribed and not diffuse?—to anticipate events, or to wait for them, without the smallest chance of being able to control the issue?"

Perigastric and Periduodenal Abscess. By Dr. W. Soltan Fenwick.

Pathological Amenorrhœa from other than Constitutional Causes, with Illustrative Cases. By Dr. F. W. N. Haultain.—The author emphasizes the following conclusions: 1. That acquired amenorrhœa may be due to functional inactivity of either uterus or ovaries alone, and may in these be treated effectively. 2. That treatment is to be directed along lines indicated by the dimensions of the uterus. 3. That the lines thus indicated are uncertain, from the influences of the central nervous system, which may be the primary cause. 4. That, from the fair amount of success obtained, treatment is justifiable, and should be attempted if the patient so desire.

Reflex Salivation from Abdominal Disorders. By Dr. F. Parkes Weber.

Gastro-intestinal Self-intoxication as a Factor in Nervous Diseases. By Dr. O. J. Kauffmann.—The author says that "it appears that a certain number of cases of nervous disorder and nervous organic disease are reasonably explicable by gastro-intestinal self-intoxication. What proportion of the cases which are not attributable to other causes may be explained in this way can only be determined by much more extensive clinical observation. As regards indicanuria, and its importance as a sign of disordered digestion, it must be borne in mind, first, that it is a variable sign, apt to be present one day and absent the next, and that, therefore, value can attach to it when its presence is more or less constant; secondly, that it may well happen that there is much disorder of the digestive processes without the production of indol; and that consequently we must not allow the absence of indicanuria to exclude the possibility of disordered intestinal digestion."

On "Washing" Dysenteric Stools. By Dr. Kenneth MacLeod.—The author thus describes the technique of the process: The stool is received in or transferred to a vessel of considerable capacity—the pan of a commode, for example. This is filled with water poured from a height of a foot or so, from a jug or ewer or tap. Masses may, if necessary, be broken up by a glass rod or stick. After allowing the material to settle for a minute or so, the fluid is slowly decanted into another vessel, so as to present to view a thin layer. The fæculence floats and passes over with the fluid; the pathological products and heavy particles of fæculence subside. What passes out is carefully watched and noted, and what remains may be again and again washed by adding fresh volumes of water and decanting, until the material has been freed of offensive and compromising stuff, when it may be transferred into a white plate or dish for examination. The process may be employed in other intestinal diseases, sprue for example. In most cases of dysentery, accurate study of the intestinal discharges can not be made in any other manner.

The information gained by this process of washing the stools may be summarized as follows: 1. The color of the fluid indicates the amount of blood contained in the evacuations, according to the depth of the tint when it is sanious. 2. The size, shape, and character of fæculent masses when solid may be noticed, and inferences may be drawn as to the condition, calibre, and tone or irritability of the diseased gut. 3. The nature and activity of the digestive process may be inferred from the state of the excreta. Undigested masses of meat or farina may be seen, or curdy lumps of imperfectly digested milk observed. 4. The character of the ingesta may be determined. Imperfectly masticated and undigested pieces of potato, vegetables, or fruits are easily identified, and grains of unboiled rice or sago discerned, and seeds of oranges, figs, grapes, etc., descried. Many of these things sink and are seen among the residuum. The dieting of the patient can thus be very effectually watched and controlled. 5. The lighter particles of mucus float in the water, and this may be flocculent or tenacious—clear, rosy, branny, or ropy. Inferences are drawn from these characters as regards the stage and intensity of the dysenteric process and effects of treatment. Clear or rose-colored flecks indicate an early (catarrhal) stage; branny particles, a dysentery undergoing satisfactory cure; and ropy masses, a slower process of recovery in a more protracted case. 6. The residuum may show blood clots of various kinds and sizes, masses of jellylike mucus, lumps of more solid inspissated mucus, and casts or exuviæ of various sorts. These latter are the most important pathological products, indicating a grave malady of some standing, and destructive lesions of varying kind and degree. The nature of the destructive process may be surmised from the character of these casts or sloughs. They may be pulpy and circular, or oval, soft, and disruptible, yellowish or greenish, consisting of a pus-infiltrated mucosa, and representing castings off of an inflamed mucosa or submucosa. They may be stringy, tenacious, and angular, consisting mostly or entirely of detached submucosa. They may be greenish or drab-colored, thick, large, or cylindrical, the result of coagulation necrosis of an extensive diphtheritic deposit on and in the walls of the intestine. They may be dark, pulpy, offensive, and soft, due to a process of gangrene. The relation of these different products to diagnosis, prognosis, and treatment is obvious and most important. 7. The products thus obtained can be subjected to further examination, for bacteria or amœbæ for example, or preserved with spirit or carbolic water for further study. 8. The results of treatment may to some extent be judged. Changes in the character of the evacuations are best appreciated when these are subjected to this system of analysis. Pills or tabloids may be seen which have passed through unaltered and unused. Grains of ipecacuanha or other powders, or of reduced bismuth, may be observed, which perhaps increase or perpetuate the irritation. The intelligent treatment of dysentery necessitates continuous and systematic examination of the stools, and the method which I have described largely robs this proceeding of its unpleasantness, while it contributes most materially to thoroughness and enlightenment.

A Case of Murder and Suicide. By Harvey Littlejohn, M. B., F. R. C. S. Ed.

The Medical Chronicle, April, 1900.

Practice and Precept in Children's Diseases. By T. C. Railton, M. D.—According to the author, maternal ignorance plays the fundamental part. In children, even more than in adults, prevention is better than cure, since children have less of the resistant vital force. Their capacity for repair is, however, greater, otherwise the death-rate would be greater than it is. The author believes that neither dirt nor overcrowding has any necessary connection with the production of diarrhœa, though they may be predisposing causes. "The essential cause of diarrhœa is the infection of food by microbes, probably specific, an infection which is particularly apt to take place in milk, and hence to affect bottle-fed children." Diarrhœa and rickets are very rare among the poorest Jewish children in Manchester. Dirt and overcrowding are extreme, but the mothers almost invariably suckle their children. Gastro-intestinal troubles the author regards as almost always at the bottom of convulsions and dentition troubles in children. As regards cow's milk, large and well-equipped establishments are needed where cows kept in healthy surroundings can yield good milk, which should be properly pasteurized and modified in a scientific way under hygienic conditions. None of the "foods" so much in use, the author asserts, are of the smallest service to a healthy child, though they may be useful for a short time in children with gastro-intestinal disease. They are all deficient in fats, in many there is hardly any nitrogenous material, and in all the carbohydrates are in excess.

Two Cases of Tumor of the Bladder. By F. A. Southam, M. B., F. R. C. S.

Salol and Petroleum in the Treatment of Infantile Diarrhœa. By W. E. Fothergill, M.D., and John Penny, M. B.—The authors conclude that the various forms of diarrhœa can be usually successfully treated without opium or astringents. Salol in powder, from half a grain every three hours to three grains every four hours, and petroleum in the shape of a thirty-three-per-cent. emulsion, from three grains thrice daily to one drachm every four hours, have proved most useful in their hands. The usual doses for a child one year old have been two grains of salol every six hours, and of petroleum one drachm of the emulsion (*i. e.*, twenty grains of petroleum) thrice daily. Bismuth may be used, and gray powder acts better when followed by petroleum.

The Treatment of Necrosis of the Frontal Bone. By Arthur H. Burgess, M. B., F. R. C. S.—The author recounts, with cases, the following procedure: The ulcer, brought into as clean and healthy a condition as possible, is dressed with hydrochloric acid of a strength sufficient to dissolve the lime salts contained in the exposed bone at its base, say ten per cent. This is applied on a double fold of lint, cut as far as possible to the shape of the necrosed area to avoid irritation of the surrounding skin, and covered with a layer of gutta-percha tissue; over this is placed a piece of lint smeared with boric ointment, extending well over the margins of the ulcer; then a little pad of absorbent wool, the whole being fixed on with a bandage. This dressing is allowed to remain undisturbed for twenty-four hours to dissolve out the lime salts from a superficial layer of the bone, leaving the organic matrix freely exposed. Next morning the dressing is removed, the ulcer washed with boric lotion to remove all traces of the strong acid, and pepsin in the powdered form dusted lightly over its surface. The double fold of lint is applied as before, but impregnated with hydrochloric acid of a strength of 0.2 per cent. instead of ten per cent., as formerly, the object being in this instance not to obtain a solvent action, but merely to allow of an acid medium. By continuing the use of these dressings on alternate days, the bone is slowly dissolved—one day the inorganic constituents being removed by the strong acid, the next the organic by the pepsin. As the boundary between the living and the dead bone is reached, the living elements seem to be stirred into activity and to cast off the necrosed part in the shape of small sequestra, a healthy granulating surface protecting the living bone from the acid. The dressing is then changed to a simple unirritating one, such as boric ointment, under which cicatrization proceeds and the ulcer becomes covered with epithelium. Should, however, any necrosed portion persist, the solvent process can be repeated.

A Case of Aneurysmal Varix and Injury to the Median Nerve at the Elbow; with Some Remarks upon Repair after Division of Motor Nerves. By J. E. Platt, M. S., F. R. C. S.—The author states, among other things, that in divided mixed nerves sensation, as a rule, returns early, but that fact forms no guide whatever as to the recovery of motor power.

Gynécologie, April, 1900.

On the Treatment of Uterine Retroversion; Shortening of the Round Ligaments by Parietal Inclusion. By M. G. Richelot.

Uterine Fibromata and Pregnancy; Prognosis and Treatment. (Conclusion.)—By M. J. A. Doléris.

On Retro-uterine Hæmatocele and its Treatment. By M. A. Routier.—The author believes that ectopic gestation is necessary to the causation of retro-uterine hæmatocele, and yet, he says, he knows of cases in which the existence of pregnancy was doubtful, even morally impossible, but between this and certainty, he adds, there is an abyss. There are cases which escape the surgeon; for a few days the patient has constant pain, a little peritonismus, and a more or less marked state of nausea, but then everything abates and there remains nothing but tumefaction, which in from five to eight weeks may disappear, leaving only a very small indolent mass. In opening a hæmatocele, he prefers a generous incision, with asepsis and good drainage, to puncture in the dark. But not every case calls for evacuation; if the effusion is small, is not accompanied by general symptoms, and does not give rise to much local trouble, absolute rest in bed, with cold applications to the abdomen, will generally suffice to cause absorption. If, however, the hæmatocele is voluminous, giving rise to phenomena of compression, and if the peritoneal reaction is more decided, it is well to evacuate the contents, also if successive hæmorrhages occur or signs of suppuration, such as fever and chills, and it seems rational to make the opening in the most accessible and the most dependent part—namely, in the vault of the vagina. The vaginal route seems to the author safer than that by the abdominal wall, and simpler, too, but he never opens the vaginal vault without being prepared to do an immediate laparotomy in case of renewed hæmorrhage or any other accident or condition calling for that operation.

The Influence of Plastic Operations on the Cervix Uteri upon Conception, Pregnancy, and Parturition. By M. J. A. Doléris.

Book Notices.

A Manual of the Diagnosis and Treatment of the Diseases of the Eye. By EDWARD JACKSON, M. D., A. M., Emeritus Professor of Diseases of the Eye in the Philadelphia Polyclinic, etc. With One Hundred and Seventy-eight Illustrations and Two Colored Plates. Philadelphia: W. B. Saunders, 1900. Pp. 6 to 604. [Price, $2.50.]

THIS book has been written with the laudable design to aid in the actual work of dealing with diseased conditions in the eye, and it is not too much to say that its aim has been fulfilled. The importance of the relations of ocular symptoms and lesions to general disease has been recognized, and an entire chapter is specifically devoted to a consideration of these relations. There are twenty chapters and a very complete index. Chapter iv, on ophthalmoscopic diagnosis, is a very good presentation of the subject, clear, brief, and admirably expressed. Another very useful chapter is that on mechanical injuries of the eye and its appendages, though it is surprising to find no mention of the large Haab magnet for the removal of particles of steel and iron from the interior of the eye. Another valuable chapter to the general practitioner is that on remedies and their applications.

The book is well printed and can be heartily recommended.

The Refraction of the Eye, including a Complete Treatise on Ophthalmometry. A Clinical Text-book for Students and Practitioners. By A. EDWARD DAVIS, A. M., M. D., Adjunct Professor of Diseases of the Eye in the New York Post-graduate Medical School and Hospital, etc. With One Hundred and Nineteen Engravings, Ninety-seven of which are Original. New York: The Macmillan Company, 1900. Pp. xii–431. [Price, $3.]

THIS book consists of eleven chapters and an appendix. Chapters i and ii are devoted to a history of the ophthalmometer and the principles of its application. The six following chapters consider the subject of astigmatism in its various forms, and a large number of illustrative cases are given in detail. Chapter ix discusses strabismus and insufficiencies of the recti muscles, and their intimate connection with errors of refraction.

In chapter x the author considers astigmatism after cataract extraction, with illustrative cases, and the uses and advantages of tonic and periscopic lenses.

In the appendix the author gives an account of the various improvements and modifications of the Javal-Schiötz ophthalmometer.

Dr. Davis prefers the large dial of Placido to the smaller black dial in use on some of the instruments. Attention is called to an improvement in Davis's double-movable mires, which permits the manipulation of the mires from the back of the large dial. By means of a circular scale with double automatic pointers corresponding to the graduation of the arc, the relative position of the mires on the arc can be read with accuracy. This improvement is of practical advantage.

The publishers are to be thanked for the large, well-leaded typography, and especially for the dull finish of the paper.

Injuries to the Eye in their Medico-legal Aspect. By S. BAUDRY, M. D., Professor in the Faculty of Medicine, University of Lille, France, etc. Translated from the Original by ALFRED JAMES OSTHEIMER, Jr., M. D., of Philadelphia. Revised and edited by CHARLES A. OLIVER, A. M., M. D., Ophthalmic Surgeon to the Philadelphia Hospital, etc. With an Adaptation of the Medico-legal Chapter to the Courts of the United States of America by CHARLES SINKLER, Esq., Member of the Philadelphia Bar. Philadelphia, New York, and Chicago: The F. A. Davis Company, 1900. Pp. x–161. [Price, $1.]

THIS brochure has met with great success in France and has been very well translated. It is divided into four parts. The first part considers the traumatic lesions of the eyebrows, the eyelids, the conjunctiva, and the orbit and its contents. The second part is devoted to traumatic lesions of the eyeball. In the third part the author turns his attention to the simulated and exaggerated affections of the eye. The fourth part, the most valuable to the American practitioner, is the adaptation of the medico-legal side of the subject by Mr. Charles Sinkler, which has been admirably done, and adds much to the value of the little book.

Refraction and How to Refract. Including Sections on Optics, Retinoscopy, the Fitting of Spectacles and Eyeglasses, etc. By JAMES THORINGTON, A. M., M. D., Adjunct Professor of Ophthalmology in the Philadelphia Polyclinic and College for Graduates in Medicine, etc. Two Hundred Illustrations, Thirteen of which are Colored. Philadelphia: P. Blakiston's Son & Co., 1900. Pp. xiii–9 to 301. [Price, $1.50.]

THIS volume is by the author of the well-known monograph on *Retinoscopy,* and is intended for all beginners in the study of ophthalmology. It is divided into twelve chapters and an index. The chapters on the use of the ophthalmoscope and on retinoscopy are particularly simple and clear. Most of the illustrations employed are new and made for the purpose.

The book is well printed on good, unglazed paper, and can be recommended, but we regret that the author has lent the sanction of his name to such a use of the verb *refract* as is found in the title of his book.

BOOKS, ETC., RECEIVED.

International Clinics. A Quarterly of Clinical Lectures and Especially Prepared Articles on Medicine, Neurology, Surgery, Therapeutics, Obstetrics, Pædiatrics, Pathology, Dermatology, Diseases of the Eye, Ear, Nose, and Throat, and other Topics of Interest to Students and Practitioners. By Leading Members of the Medical Profession throughout the World. Edited by Henry W. Cattell, A. M., M. D., Director of the Ayer Clinical Laboratory of the Pennsylvania Hospital. With the Collaboration of John Ashhurst, Jr., M. D., LL. D., and Charles H. Reed, M. D., of Philadelphia, and James T. Whittaker, M. D., LL. D., of Cincinnati. With Regular Correspondents in Montreal, London, Paris, Leipsic, and Vienna. Volume I. Tenth Series, 1900. Philadelphia: J. B. Lippincott Company, 1900. Pp. viii–315.

Diseases of the Gall Bladder and Bile Ducts, including Gallstones. By A. W. Mayo Robson, F. R. C. S., Senior Surgeon to the General Infirmary at Leeds, etc. Assisted by Farquhar Macrae, M. B., C. M. (Glas.).

Second Edition. New York: William Wood & Company, 1900. Pp. xii–11 to 313.

Medical and Surgical Report of the Presbyterian Hospital in the City of New York. Volume IV. January, 1900.

Twenty-fourth Yearbook of the New York State Reformatory for the Fiscal Year ending September 30, 1899.

Bibliographischer Semesterbericht der Erscheinungen auf dem Gebiete der Neurologie und Psychiatrie. Von Dr. med. et phil. G. Buschan. Fünfter Jahrgang, 1899. Erste Hälfte. Jena: Gustav Fischer, 1900. Pp. 223. [Preis, 6 Mark.]

Memorial of the American Baking Powder Association in Connection with Pure Food Legislation. Document No. 303.

Report of a Case of Fibroma of the Neck. By J. A. Sutcliffe, M. D., of Indianapolis. [Reprinted from the *Medical and Surgical Monitor.*]

Twenty-second Annual Report of the State Board of Health of the State of Connecticut, with the Registration Report for 1898 relating to Births, Marriages, Deaths, and Divorce.

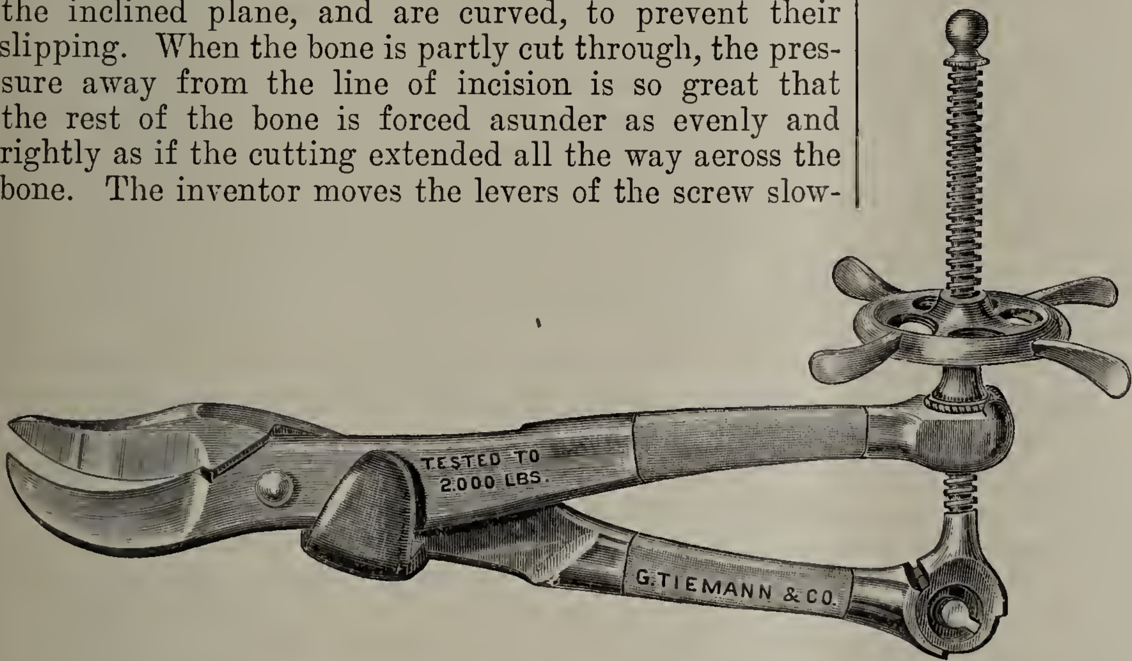
New Inventions, etc.

A NEW OSTEOTOME.

By J. S. Wight, M. D., LL. D.,

PROFESSOR OF OPERATIVE AND CLINICAL SURGERY AT THE LONG ISLAND COLLEGE HOSPITAL, BROOKLYN, N. Y.

The accompanying figure represents an osteotome devised by the author of this description. The instrument is so clearly represented as to need only a brief description. Its strength is indicated by being tested to a pressure of two thousand pounds. The inclined plane of the screw on the perpendicular bar is augmented by four arms or levers, which turn the female screw. By this means the handle bars of the osteotome are slowly approximated, and also act as levers. The jaws of the osteotome are thus brought together with great force. These jaws act as wedges, cutting their way through the bone. They work on the principle of the inclined plane, and are curved, to prevent their slipping. When the bone is partly cut through, the pressure away from the line of incision is so great that the rest of the bone is forced asunder as evenly and rightly as if the cutting extended all the way across the bone. The inventor moves the levers of the screw slowly, to enable the jaws of the osteotome to penetrate the bony structure in the best manner possible. The inventor has cut through the bones of the dead body in the dissecting room and the lecture room in the following instances: 1. The thigh bone, four times. 2. The arm bone, six times. 3. The tibia, five times. 4. The fibula, four times. 5. The bones of the forearm, four times. 6. The toe bones and finger bones, several times. In every instance the bone was cut through in a workmanlike manner, and no crushing and splintering were noticed. In two instances of very compact bone—one of the femur and one of the tibia—I used my diamond drill, boring three or four holes to give a curve of least resistance to insure the direct cutting off of the bone. This osteotome will be useful in exsections, especially near joints, and will enable the surgeon to cut off the ends of fragments in cases of compound fractures.



Miscellany.

Development of the Sense of Smell.—The Atlanta *Journal-Record of Medicine* for February, in an editorial on The Human Odor, refers to the case cited by Dr. Bett (*Archiv der gesammter Physiologie; National Druggist*) of a friend of his who, with bandaged eyes and every precaution against collusion, was enabled, by the sense of smell alone, to recognize persons with whom he was acquainted, and to call their names the moment that they came into the room and at the distance of several paces. The experiments were varied in a number of ways, but with the unerring faculty of the bloodhound this man detected the identity of every individual presented. Other instances of a similar keenness of scent are cited by Dr. Bett. According to the man who gave the exhibition, every family has a characteristic odor, common to all the members thereof, but the intensity of which usually varies sufficiently among the various members to enable him to distinguish each individual member.

Proposed Additions to the Official List of Drugs and Preparations.—In the May number of the *Druggists' Circular and Chemical Gazette* there is a long article by Dr. William J. Robinson entitled Articles which should be Introduced into the Pharmacopœia of 1900. Dr. Robinson gives the following list: Acidum camphoricum, acidum formicum, acidum trichloraceticum, agaricin, airol, antipyrine, aqua laurocerasi, aristol, bismuth salicylate (basic), bismuth subgallate, bromoform, caffeine-sodium benzoate, caffeine-sodium salicylate, condurango, chloralamide, creosote carbonate, formaldehyde, guaiacol, guaiacol carbonate, ichthyol, liquor ferri mangano-peptonati, lysol, phenacetine, sulphonal, trional, homatropine hydrobromide, orthoform, protargol (?), argentum colloidale (?), methylene blue (?), saccharin, salophen, scopolamine hydrobromide, sozoiodol, tannoform, salipyrine, piperazine (?), theobromine-sodium salicylate, xeroform, thyreoids, suprarenals, keratin, quinine tannate.

He would add also the following preparations, mostly given in the *National Formulary:* Acetum aromaticum, aqua hamamelidis, collodium salicylatum compositum, elixir ammonii valerianatis, elixir anisi, elixir apii graveolentis compositum, elixir catharticum compositum, elixir digestivum compositum, elixir ferri, quininæ et strychninæ, elixir taraxaci compositum, elixir viburni opului compositum, emplastrum fuscum, emulsio olei morrhuæ, emulsio olei morrhuæ cum hypophosphitibus, emulsio olei morrhuæ cum extracto malti, emulsio olei ricini, extractum apii graveolentis fluidum, extractum malti, extractum rhamni purshianæ fluidum aromaticum, glyceritum pepsini, gossypium stypticum, liquor alumini acetatis, liquor ammonii anisatus (Ph. G.), liquor arseni et auri bromidi, liquor morphinæ hypodermicus, liquor sodii boratis compositus, lotio flava, lotio nigra, lotio plumbi et opii, mistura chloralis et potassii bromidi composita, mistura contra diarrhœam, mistura copaibæ composita, oleum carbolatum, pilulæ aloini, strychninæ et belladonnæ, pilulæ antiperiodicæ, pulvis acetanilidi compositus, pulvis pepsini compositus, sal carolinum factitum, syrupus eriodictyii aromaticus, syrupus glycyrrhizæ, syrupus hypophosphitum compositus, syrupus pini strobi compositus, tinctura antiperiodica, tinctura ferri chloridi ætherea.

A Case of Artificial Impregnation.—Dr. Elliott Gardner (*Medical World*, April) records the case of a woman upon whom he had operated successfully some five or six months previously for laceration of the perinæum, and of the cervix uteri, with erosions, metritis, and posterior displacement consequent upon her confinement, who worried because she did not again become pregnant, her first child having died shortly after birth. Dilatation of the internal os, coupled with all ordinary treatment and regimen, failing, Dr. Gardner finally injected with a syringe into the os uteri some of the semen ejaculated by the husband, two days after the cessation of menstruation on May 24, 1899. On February 24, 1900, the patient gave birth to a fine boy weighing nine pounds and a half. The labor was easy. Both mother and child did well. This would appear to be the fifth case on record in this country.

The Medical Society of the State of North Carolina.—The forty-seventh annual meeting will be held in Tarboro, on May 22d, 23d, and 24th, under the presidency of Dr. George W. Long, of Graham. The preliminary programme contains the following titles: The Relation of Bacteria to Disease, by Dr. R. H. Whitehead, of Chapel Hill; The Overcrowded Materia Medica, by Dr. D. J. Hill, of Lexington; Automatism, by Dr. Charles A. Julian, of Thomasville; Should Physicians Supply the Medicines they Prescribe? by Dr. David S. Moirell, of Farmville; Endometritis, its Pathology and Symptoms, with Special Reference to Treatment, by B. Ray Browning, of Littleton; The Ambulatory Treatment of Fractures of the Tibia and Fibula, by Dr. A. S. Pendleton, of Warrenton; The Treatment of Syphilis, by Dr. Hubert A. Royster, of Raleigh; An Unusual Case of Appendicitis, by Dr. M. P. Perry, of Macon; A Report of Surgical Cases, with Remarks, by Dr. Armistead Taylor, of Washington; Hæmorrhoids, by Dr. H. T. Bass, of Tarboro; Pylorectomy for Obstruction due to Adenocarcinoma, with Exhibition of the Patient, by Dr. Joseph H. Branham, of Baltimore; Shall we use Anæsthetics and Anodynes in Midwifery? by Dr. N. P. Boddie, of Durham; Emergencies in Obstetrics, by Dr. A. G. Carr, of Durham; Abortions and Miscarriages, by Dr. E. T. Dickinson, of Smithfield; Some Observations in Pædiatrics, by Dr. John R. Irwin, of Charlotte; Cough, by Dr. Edwin Gladmon, of Southern Pines; Infant Feeding, by Dr. John C. Walton, of Reidsville; Antitoxine and Intubation for Membranous Croup, by Dr. J. W. Long, of Salisbury; Laryngeal Diphtheria, by Dr. J. L. Edgerton, of Hendersonville; Hypertrophy of the Pharyngeal Tonsil, and its Treatment, by Dr. J. T. J. Battle, of Greensboro; The Inanition Fever of Infancy, by Dr. R. C. Ellis, of Shelby; Exploratory Incision; its Relation to General Practice, by Dr. W. O. Spencer, of Yanceyville, and Chronic Cystitis, by Dr. J. H. Marsh, of Fayetteville.

The Fifth District Branch of the New York State Medical Association.—The sixteenth annual meeting will be held in Brooklyn, on Tuesday, May 22d, under the presidency of Dr. J. C. Bierwirth. A discussion will be opened by the president's address on The Necessity and Benefits of More Completely Organizing the Medical Profession, after which the following papers will be presented: The Identification of Dextrose in Human Urine, by Dr. Heinrich Stern; The Diagnosis, Symptoms, Treatment, and Prognosis of Diabetes Mellitus, by Dr. Egbert Le Fevre; Diabetes Mellitus in Children, by Dr. Henry Dwight Chapin; The Relations of Surgery to Diabetes Mellitus, by Dr. Charles P. Gildersleeve; Ocular Manifestations in Diabetes Mellitus, by Dr. L. A. W. Alleman; Cutaneous Manifestations in Diabetes Mellitus, by Dr. Samuel Sherwell, and Manifestations of Diabetes Mellitus in the Upper Air-passages, by Dr. Jonathan Wright. Biographical sketches will be presented of the late Dr. X. T. Bates, Dr. J. F. Feely, Dr. N. W. Leighton, Dr. S. B. W. McLeod, and Dr. J. G. Wallach.

Public Baths and the Medical Profession of New York.—Under the heading of An Absurd Claim and a Unique Exhibit, the *Medical Record* for May 12th says: In the *New York Times* of April 29th Mr. Goodwin Brown, an Albany lawyer, claims to be the originator of "the system of public baths," which promises to become an enormous sanitary factor in our tenement life.

In our issue of December 6, 1890, we referred to the subject of public baths, and wrote: "Much credit is due to Dr. S. Baruch, of this city, for his earnest agitation of the subject." Since that time we have frequently alluded to the free-bath movement inaugurated by this gentleman. Before medical and philanthropic societies the doctor urged the sanitary importance of the rain bath, and he succeeded in so imbuing Dr. Gertrude Wellington, of Chicago, with his views that she secured the construction of the Carter Harrison Baths in 1894, and of four other baths since that time.

Failing to overcome the opposition of Mayors Grant and Gilroy, the doctor found an earnest and able coadjutor in Mr. Goodwin Brown, who in 1895 brought about the passage of a mandatory act, in obedience to which several free baths have been and are now being constructed in this State (one city being compelled by a supreme-court mandamus to build a bath).

While, therefore, Mr. Brown deserves credit for aiding Dr. Baruch in this important enterprise, his sweeping claim is absurd. Mr. Brown relates that "he was attracted in 1891 to the new method of bathing adopted in the soldiers' barracks in Berlin." It is singular that he had to go so far for this important information, when Dr. Baruch had explained the rain bath in 1890 to the Academy of Medicine, and the prominent New York dailies had referred to it as a matter of great public interest, and the New York Juvenile Asylum already had constructed a rain bath. We believe that we voice the sentiment of the medical profession in defending one of its members against encroachment, and insisting that credit be not withheld from the man who has so valiantly and successfully made the fight for this great sanitary boon.

We are gratified to learn that an exhibit in the department of social science and hygiene of the Paris exhibition will demonstrate to the world at large the feasibility, economy, and perfection of the system of public baths so ardently and successfully advocated by Dr. Simon Baruch. It is a matter of pride that this is the only country in the world which possesses public baths furnishing at all seasons warm water, soap, and towels free to any one, and that this great boon to the poor is the result of persistent endeavor of a medical man.

The New York Academy of Medicine.—At a stated meeting, on Thursday, May 17th, the order for the evening was a paper by Dr. Gustav Langmann, entitled Poisonous Snakes and Snake Poison, which was discussed by Dr. J. Ewing, Dr. W. Hirsch, Dr. P. Bailey, Dr. S. Pollitzer, Dr. A. Lambert, and others.

At the next meeting of the Section in Ophthalmology and Otology on Monday evening, the 21st inst., a discussion on the Cause, Prevention, and Treatment of Prolapse of the Iris following Simple Extraction of Cataract will be opened by Dr. E. Gruening, to be followed by Dr. C. S. Bull, Dr. H. Knapp, Dr. T. R. Pooley, Dr. Richard Derby, Dr. C. J. Kipp, Dr. I. S. Prout, Dr. David Webster, Dr. Peter A. Callan, and others. Dr. Arnold Knapp will exhibit a tumor of the ciliary body and cysts in the detached retina.

At the next meeting of the Section in Laryngology and Rhinology, on Wednesday evening, the 23d inst., cases will be presented, and specimens and new instruments will be exhibited. As this is a clinical meeting, members are requested to present interesting cases, and to be in the examination room by eight o'clock.

The South Carolina State Medical Examining Board.—At the meeting of the South Carolina Medical Association, held in Charleston, on April 19th, Dr. Allard Memminger, professor of chemistry, hygiene, and clinical urinary diagnosis in the State Medical College of South Carolina, visiting physician to the City Hospital, of Charleston, etc., read the following: In presenting to the consideration of this august body the question of the propriety of the offices of the State Medical Examining Board as now organized, I trust sincerely my real and true purpose will not be misunderstood and taken as a suggestion for lowering our medical standard, but, on the contrary, as seeking to elevate it and making it more practically useful. As a teacher in our State Medical College, I hope, too, you may and will regard my views as suggested by a long course of observation, and not as in the least actuated by a desire to further alone the well-being of our institution to the detriment of the public good. With these excuses, then, if, indeed, they are necessary, for the selection of my theme, I shall proceed at once to the subject matter of my paper.

1. The offices of examinations to constitute a graduate in medicine.
2. The offices of examinations by our State board to constitute the right to practise medicine and surgery in our State.

The requirements for graduation are so well known by all of you here present that I need not take up your time by a repetition of the same, but simply call your attention directly to the salient points that must always be kept in view, namely, that a student must have not only a theoretical, so called, idea of the subject, but as well a practical application of the same. To this end, the courses of our four-year graded institution are divided into two portions: In the first the theoretical aspect of the branches taught is kept in view almost entirely, and thus not only is the student prepared for what is to follow, but his untrained mind is brought into better condition for the environment by which he is soon to be surrounded, which, by his imbibing, is to make him a graduate in medicine—yes, indeed, a practical medical man. Observe the word I use, graduate as a *practical* medical man.

To this idea, then, our examinations are or should be directed; and for its accomplishment we have divided our course into what are termed junior graduating branches and senior graduating branches; the former dealing more with the theory of the underlying principles of medicine, and the latter with the application of the same. The junior branches are studied for two years, and at the end of this term an examination is held, and if the student attains a graduating excellence, he is allowed to discontinue his further study in these branches, and devote the remaining two years of his studies to the application of the theories gained by his two years' course.

This plan is deemed so advisable that our State Medical College allows the certificates of junior branches passed in other first-class four-year graded colleges to count and exempt the holder of the same from standing the examination in these branches in our college, thus enabling these students, too, to apply all their time to the practical aspect of medicine.

By this division of labor and study in our colleges, it is found that students are better prepared to practise in a practical manner than when theory and practice were crowded into two years. Indeed, if I mistake not, the trend of medical teaching is now aiming more at bringing our colleges into the line of post-graduate institutions, and thus giving to the public more practical and less theoretical physicians.

Now, then, let us glance at the offices of the State Medical Examining Board. What do they set out to do?

1. Examine to keep out quacks or charlatans.
2. Examine to see whether the diploma of any particular college is upheld by the answers made to questions propounded to the applicant for the license to practise.

Most assuredly, with these two objects in view, the charlatan and the graduate of a reputable college, when he or she comes before the board, are on the same footing. True, the board says: You must show a diploma. But of what good is such a diploma when this State board is to decide upon the answers of the applicant and not on his credentials? It is to just this that I wish to draw attention particularly, for we most assuredly think that the credentials should be allowed a full and just weight in the matter. The credentials or diploma give evidence that the student has studied medicine four years; has graduated in the junior or theoretical branches of medicine, and has also, just before coming before this State board, been considered worthy of applying the theory to the practice of medicine. This board, then, does not show that comity which exists between four-year and high-standing colleges, but at once begins to examine on the senior and junior branches, which latter the student has put by two years before and which, with the best of us, grow dim in that time. No wonder, then, that some of the applicants show less familiarity with the subject of these questions than with those of the senior and practical questions, and in the summing up of the examination may show a lesser total than that required. That such is the case is to be expected until our medical colleges all require a university A. B. or A. M. as necessary before entering upon the study of medicine.

Yes, I as a teacher know full well that questions which are put in chemistry, to test, mark you, the *theoretical knowledge* of the student it would be unwise to ask two years after the student has passed, but this is what is expected by the board, and that I contend is unwise, as it does not fairly serve the purposes for which the board was created. No doubt such an examination would be fair to put to one not holding a diploma, but, then, we should add that, to be perfectly fair, if one should pass successfully such an examination, he would be, in our judgment, fully prepared to practise medicine.

The diploma, then, of our four-year graded medical colleges, divided into junior and senior branches, is surely deserving of some respect, and should entitle the holder thereof to some more deserving place than in the category of quacks and persons who have never studied medicine.

I would, therefore, respectfully suggest that the State Board of Examiners work along in the same line as that pursued by reputable four-year graded medical colleges, accepting junior certificates as proper credentials of proficiency in these branches, and paying more strict attention to practical medicine, limiting their examinations for those holding diplomas from four-year graded-course schools to questions absolutely pertaining to the practice of medicine and surgery, and respecting to this slight degree the junior branches, which, as I have already said, grow dim after two years, and which hardly any of you who now listen to me would care to have himself tested on. For example, would all you gentlemen who have practised long, and I hope well, in the various sections you hail from, care to answer the questions I now propound, which have been well answered by many in the junior graduating class of chemistry this year?

When does a liquid boil at 212° F.? Explain the upward draught or current in a chimney. What is the effect of gravity, what the cause of pressure, and what is weight? What is solution and upon what does it depend? What is the universal effect of heat, and how are heat and cold related? When a moving mass is stopped by friction, what takes place? When heat falls upon a body what becomes of it? Mention some of the cooling effects of evaporation. Why is wet clothing injurious to wear? What is the velocity of heat, light, and electricity? How are heat, light, and electricity conveyed to our senses? What would be the effect of removing the aqueous vapor from the air? Describe the voltaic circuit. State the difference between tonic and clonic contractions. Give the order constituting the reaction of degeneration by the galvanic current. Give the chemical properties of oxygen. Give a like description of sulphur dioxide and chlorine gas. Give one method of production for ammonia gas and phosphorus respectively. Give the salts, with correct formulæ, containing one or more of the following elements: Oxygen, arsenic, potassium, calcium, carbon, iron, antimony, mercury, bromine. Is the following formula correct, and if so, why?

$$As_2O_3 + 6\ HCl + Zn_3 = As_2 + 3\ ZnCl_2 + 3\ H_2O.$$

The atomic weights and valences are as follows:

As atomic wt. 74.44. Valence, iii and v.
H " " 1 " i
Cl " " 35.5 " i, iii, v, and vii.
Zn " " 65.4 " ii
O " " 16 " ii

What symptoms denote poisoning by alkaloidal substances? What is the antidote for acute poisoning by arsenic? What general composition is observed in organic substances? Mention some of the more recent derivatives of the coal-tar by-products. What is an alkaloid? What an aldehyde? How is mercurous iodide made? What are the properties of zinc sulphate? State the modes of occurrence and properties of the metal iron. Give a like history of potassium. What is calcium phosphate, and what are its uses? What is copper arsenite, and how is it prepared?

Yes, gentlemen, you all once answered questions of a like kind, but do not let us forget what we have forgotten, and require this a second time of these students because we ourselves are safe. This lack of due appreciation, and what is deemed injustice to the four-year graded course is, I believe, at the bottom of the unrest of the students in this and other States as to the rights of State examining boards: it is, indeed, a wave of discontent that must be met, not by harsh measures, but by just and wise acts.

Let us, therefore, keep ever before us the true office of a State examining board, which is, neither to give a diploma nor revoke one, but, on the contrary, grant a license to practise; to stand between the honor conferred on the graduate and the exercise of it on the people.

It, therefore, should busy itself with the clinical and hygienic aspects of the subject, and should feel that by close attention to this the public good is best subserved.

A course, then, such as I have hurriedly mapped out will not lower the scale of medical education in the State, but, on the contrary, tend to elevate and increase practical teaching and give out to the State a better class of medical men.

What we want is thorough and practical physicians, who will do the public no harm and much good. A State examining board organized, then, on such lines may aid much in this direction, and at the same time feel that, in recognizing a graded course, they further and approve the good work already begun, and not in any way hamper or render it less effective. I repeat, I do not wish to abolish the State board; far from it, I wish to make it and, by it, the medical institutions all over our land more effective, so that in the future a license to practise medicine in South Carolina will carry with it the assurance of a good practical physician, who, having passed through the alembic of common sense, is now fit to be a custodian of health in our historic State.

The Ontario Medical Association will hold its annual meeting in Toronto on Wednesday and Thursday, June 6th and 7th, under the presidency of Dr. Adam H Wright.

Original Communications.

THE INSTRUCTION OF THE HOSPITAL CORPS, U. S. ARMY.

By WILLIAM H. WILSON, M. D.,
CAPTAIN AND ASSISTANT SURGEON, U. S. ARMY, ANGEL ISLAND, CALIFORNIA.

I CHOOSE this title because of the many questions relating to this important subject addressed to me and other medical officers by physicians in civil life, and also by the officers of the State national guard, as to what instruction is given the enlisted men of the hospital corps in order to prepare them for their duties in field engagements or hospital, or such other places as their duties may call them to.

The men enlisted for this corps of the army should be men of intelligence, or have had experience in nursing, in hospitals, or in the drug business; it is also well that they should have some military training, so as to better fit them to submit to disciplinary measures required in the military service, and which are as necessary for the hospital-corps men as others.

Instruction in their duties is required by army regulations to be given to these men by the surgeons at the different stations of the troops.

There are also two schools of instruction for the hospital corps, established to still better instruct the men in their various duties; one is at Washington Barracks, D. C., the other and more recent one at Angel Island, California—the latter especially established to prepare men for service in the Philippine Islands.

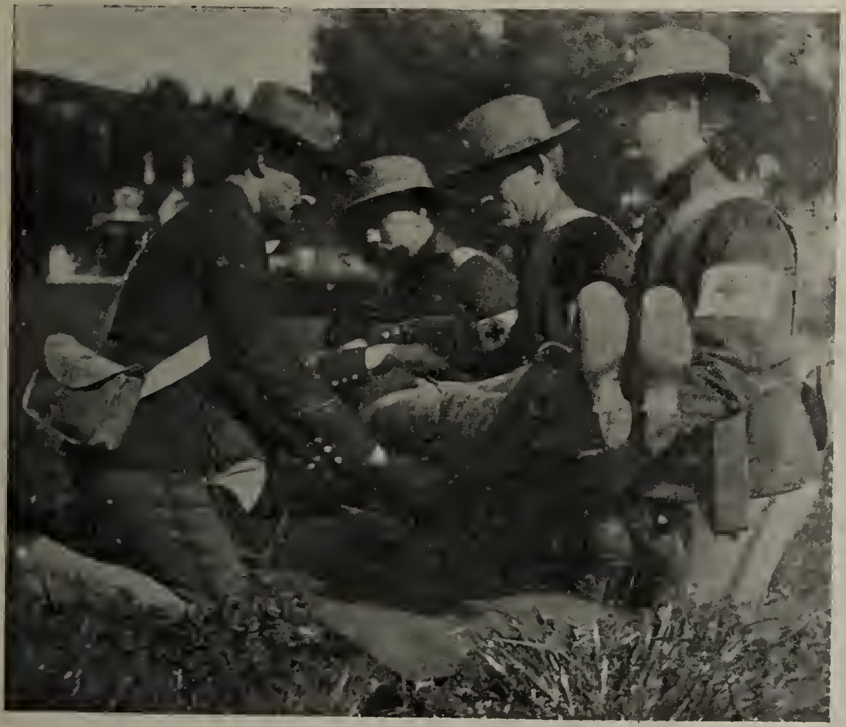


Fig. 1.—Lowering a patient on to a litter.

These two schools are managed and conducted in nearly the same manner, the same instruction, which I will speak of more in detail later, given in both, and a medical officer of the regular army detailed especially for this work at each school.

Men are ordered to these schools from all parts of the country, and when they arrive they are immediately put in the classes and their instruction begun. Many of these men are recruits, and so have their military as well as their hospital duties to learn.

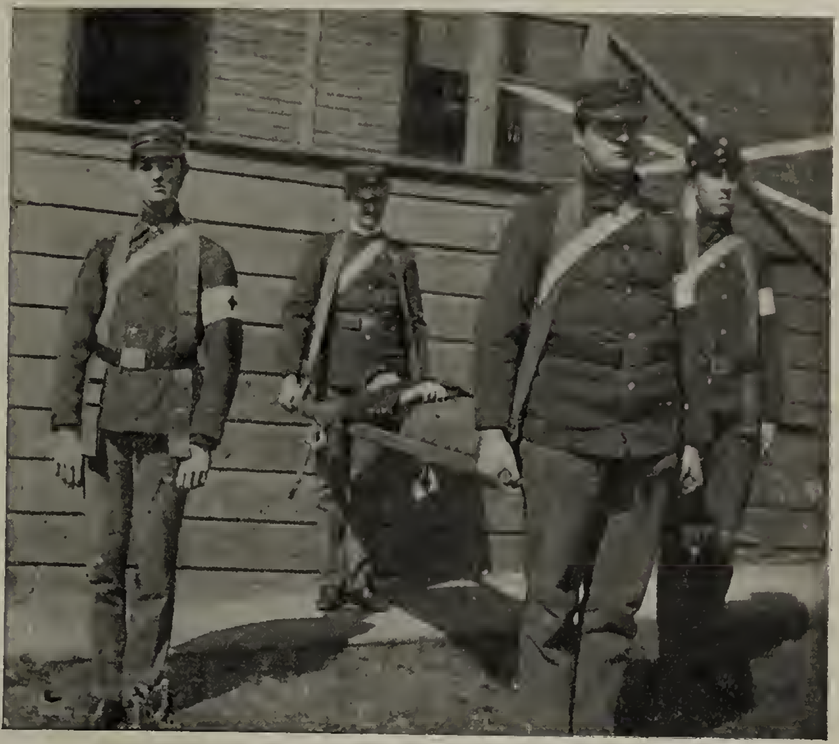


Fig. 2.—Carrying a patient on a litter.

The course given at these schools must, owing to the great need of men in our foreign possessions, be short; so, therefore, it is made at the school at Angel Island to cover a period of four weeks, about six hours daily, and at the end of this time the course is commenced over again, thus enabling all who are sent here, even for this short period, to get the full course and be enabled, in a degree at least, to care properly for sick or wounded who may later fall into their hands.

The method of teaching is by lectures, practical demonstration, drills, and exercises. The lecture is for an hour daily on elementary anatomy and physiology, nursing, and first aid. Each member of the class is carefully questioned each day on the work of the previous one, and his record kept according to the answers given. Suitable text-books are furnished, in which the men can study up the lectures, and so be able to recite on them the following day.

Practical demonstrations are given at the schools as to how to take temperatures and record them; how to make and apply poultices and the various plasters; how to resuscitate unconscious or drowning persons; how to apply the various bandages to the different parts of the body; how to clean, sterilize, and prepare dressings, instruments, etc., for an operation, and last, but not least, the uses and application of the first-aid packet and the contents of the hospital-corps pouch. The first-aid packet, one of which is carried by every man of the command in the field, consists of two small pads of antiseptic gauze wrapped in waxed paper, to be applied to the wounds, a gauze bandage to hold them on, two safety pins, and a large triangular bandage to place over these or to be used as a sling, all folded neatly in a small package, covered with rubber tissue, and of such a size as to be carried in a man's pocket.

To the use of this form of dressing may be ascribed in our recent war with Spain almost the entire absence of septicæmia and the great reduction in the number of amputations, which usually have followed gunshot wounds in wars previous to the late Spanish-American war; so it will readily be seen that the uses of this packet must be carefully and thoroughly taught.

The hospital-corps pouch, which is carried by each private of the hospital corps, contains a small flask of aromatic spirits of ammonia, wire gauze for splints, rubber bandage, gauze bandages, hæmostatic forceps, pins, scissors, a large penknife for shaping and cutting splints, and six first-aid packets.

Hospital-corps drill, or litter and ambulance drill, is given for an hour daily, in order to instruct the men in placing a wounded or sick man on a litter, how to carry him with most comfort to the nearest hospital or dressing station, or how to place him in an ambulance for transportation (Figs. 1 and 2).

These, though seemingly trivial matters, are really essential to the comfort of the wounded or sick person being handled.

They are also shown how to carry men without litters in various ways (as shown by pictures taken while at drill—Figs. 3, 4, and 5).

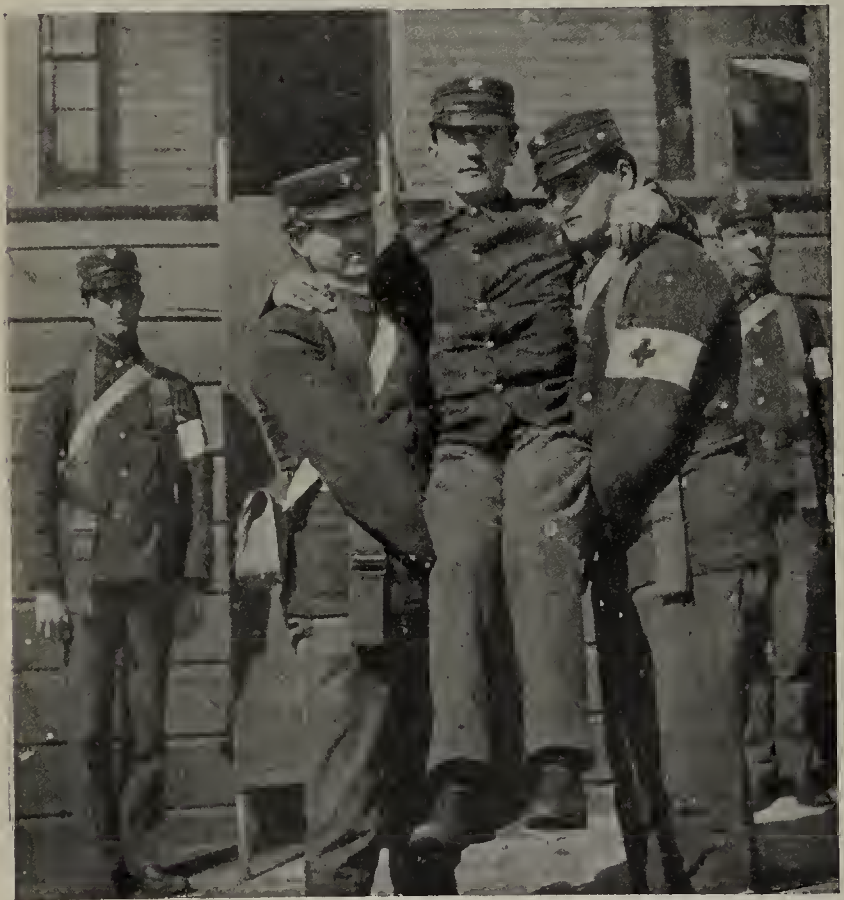


FIG. 3.—Four-handed or "dandy" seat made by two bearers.

Another and very important feature of the instructions given at both schools for the instruction of the hospital corps is the preparation and cooking of special diets for the sick.

This part of the course is under the able superintendence of a graduate female nurse, especially selected by the surgeon-general for this work. In this department all articles of diet are prepared by the men themselves, just as would be done in a hospital.

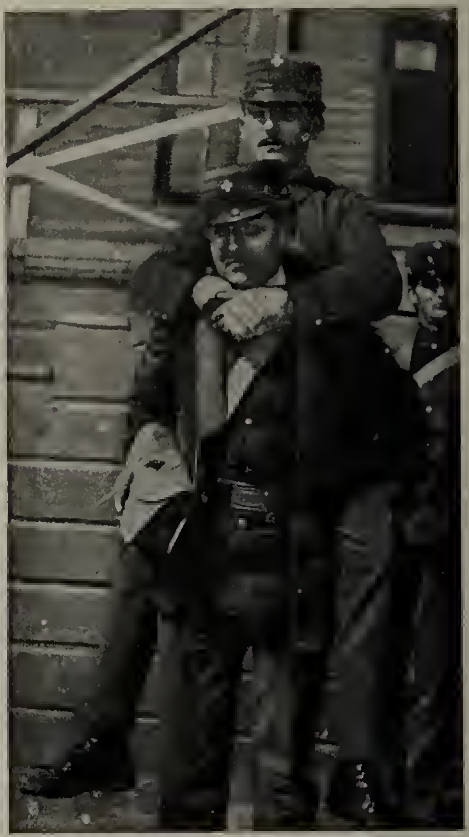


FIG. 4.—A single bearer carrying a patient.

They are given the recipes and the materials and directed to prepare a certain article of diet for the sick.

They are shown how to make broths of all kinds, jellies, eggnogs, and all forms of liquid foods; how to prepare eggs and meats in a dainty and tasty manner, and also to convert the articles of the soldier's ration into suitable form so as to be acceptable to a patient.

In order that each man may prepare all that is required in this work, the class is divided into small sections so that each one in turn may get the full course and be able to prepare each article of diet himself. A systematic review in this branch is made once a week of all work done the preceding one; questions are asked, and the relative standing is kept in this as in other work.

The results obtained from the above instruction, I am glad to state, are very satisfactory.

Men who come here, not knowing the name of a bone in the body, go away knowing the name and position of nearly all the bones and can put on all the important bandages and take temperatures properly, and many can prepare very nice and palatable dishes for the patients and, no doubt, will render efficient service when necessary.

All credit for the founding and progress of these schools must be given to General Sternberg, our present surgeon-general of the army, for the interest and practical suggestions given by him to the medical officers in charge.

In these remarks I have endeavored to explain briefly the instruction now given to the hospital corps of the army, so that it may be readily appreciated by those interested in the work.

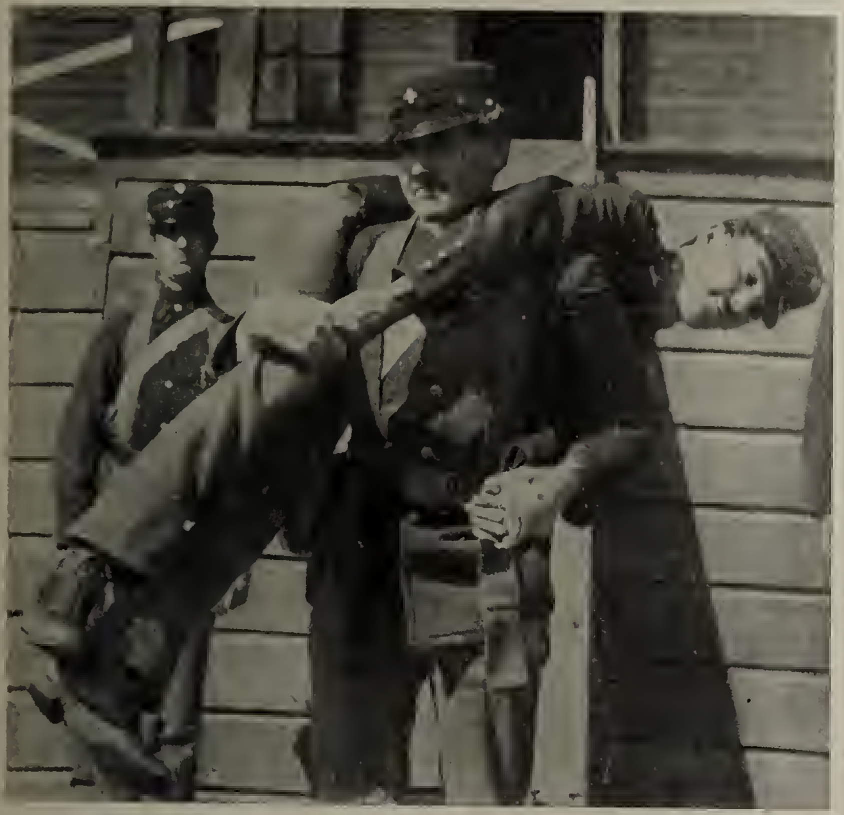


Fig. 5.—A single bearer carrying a patient across his back.

SEPTICÆMIA AMONG YOUNG CHICKENS.

By LEO F. RETTGER, M. D.,
INDIANA UNIVERSITY, BLOOMINGTON, IND.

Late in the summer of 1899 I had the privilege of observing a peculiar epidemic which occurred among young chickens two to three weeks old. A hen and seventeen chicks had been purchased, and were allowed to run practically at large. At the time of the purchase they were all apparently healthy, but three days later one of the chicks was found in a dying condition. On the following day another died, and in the course of the next eight or ten days all but three became sick, and of these all but three died. The last-mentioned recovered from the disease, but remained stunted in growth for two months or more, after which they again grew rapidly, and three months after the outbreak almost attained the same size as the three chicks which had not contracted the disease at all. The mother hen and other grown chickens, which were repeatedly exposed to the disease, were immune, so far as could be observed.

The symptoms were practically the same in each case. The disease first showed itself by loss of appetite and sluggishness of the chick; the feathers then became rough, and diarrhœa prevailed. Later, the chick remained standing in one place and refused to eat. At this stage the wings were drooped and ruffled, and the chick became very poor, its neck and legs appearing unusually long and slender. As the disease progressed the chick became more sluggish. Finally, it was unable to stand and lay on one side, with wings outstretched, as if utterly exhausted. The throat and mouth seemed normal, and at no time did the chick show any signs of pain.

Post-mortem examination disclosed the following: The chick was very much emaciated; the crop was empty; the intestines were pale and almost empty; the liver was pale, with the exception of a few patches and streaks, which were of a dark-red color; the spleen, lungs, and kidneys seemed normal. Stained sections of the liver were seen to contain small bacilli, which were not grouped, but scattered throughout the section.

Inoculations were made in agar and bouillon from the blood of the liver, kidneys, and spleen. In each case a growth was obtained from the liver and in one instance from the spleen. Subsequent examination showed the cultures from the liver to be a pure bacillus growth.

Examination of the Bacillus.—The organism obtained from the blood of the liver is an actively motile, non-liquefying, non-chromogenic, aerobic, and facultative anaerobic bacillus with slightly rounded ends. When grown on agar, it is one to two micra long, 0.3 to 0.5 micron broad, and usually occurs single (see photomicrograph 1). In bouillon the size may vary considerably; the bacillus is larger and longer, often attaining a length of three or four microns, or growing out into chains of two or three bacilli. It stains with the ordinary aniline dyes, but not as readily as the bacillus of hog cholera. It does not stain by Gram's method, nor does it retain its color when treated with very dilute nitric, hydrochloric, or acetic acid. Fuchsine and soap solution of methylene blue are among the most favorable dyes. Sections to be stained require fifteen to twenty

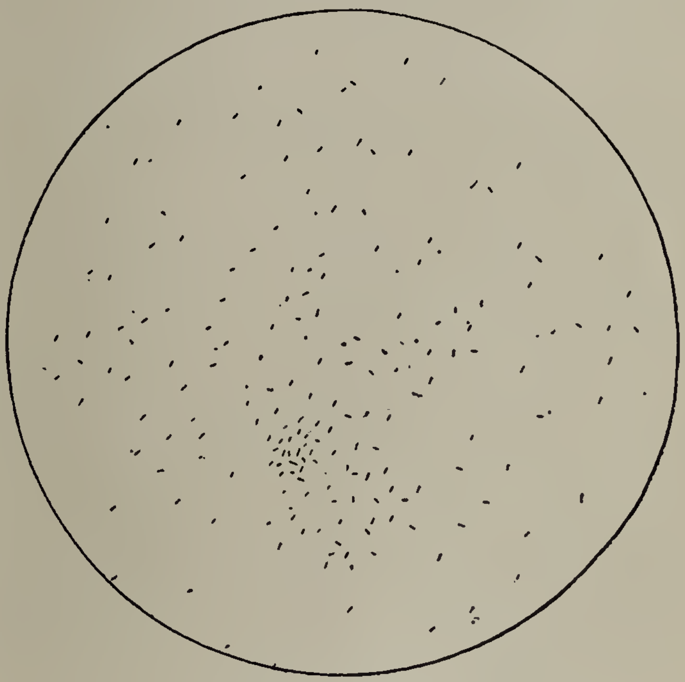


Fig. 1.—Bacilli in agar-agar. × 600.

minutes' staining in fuchsine or soap methylene blue and rapid dehydration.

The bacillus does not produce spores.

On agar plates small white colonies make their appearance in twenty-four hours at incubator temperature. The colonies are about one fifth of a millimetre in diameter, and increase in size very slowly, not attaining more than one millimetre in diameter even after several days' incubation. Under the microscope they present a characteristic appearance. They vary in form from oval, kidney-shaped, or even spindle-shaped, to round. In almost every case, however, the surface is marked with a peculiar rosette figuration (see photomicrograph 2). The colonies appear yellow under the microscope.

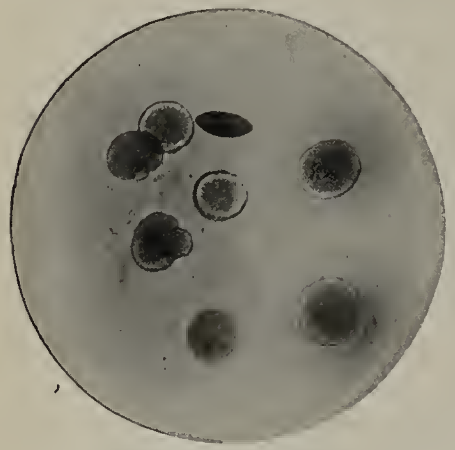


FIG. 2.—Colonies on agar plate. Twenty-four hours.

In agar-stick culture rapid growth occurs along the whole line of inoculation to which it is confined, with the exception of a few transparent, veil-like projections which extend a short distance into the agar. The growth spreads very little on the surface.

On slant agar, pronounced growth occurs in twenty-four hours. It spreads little, and has the appearance of a long, narrow belt with slightly irregular edge. The growth is whitish and semitransparent. The bacilli remain motile even after three weeks of incubation.

On glycerin agar, lime agar, and peptoneless agar, growth is very much the same as on ordinary agar.

On gelatin plates small white colonies make their appearance in forty-eight hours. They are about one fifth of a millimetre in diameter, and increase in size very slowly. Under the microscope they appear yellow and more or less uniformly round, with regular edge and granular surface. The gelatin is not liquefied.

In gelatin-stick culture pronounced growth occurs in forty-eight hours along the whole line of inoculation. It is of distinctly granular appearance, and spreads very little on the surface.

In bouillon, abundant growth occurs in twenty-four hours at incubator temperature. The bouillon is slightly clouded and has an abundant fine white sediment which, on shaking, is readily distributed through the medium.

In glycerin bouillon growth is very much the same as in ordinary bouillon.

On potato development is very slow. A transparent belt is formed along the line of inoculation, which is almost invisible to the naked eye and has the appearance of a narrow, shallow groove. Little difference in appearance occurs after the first forty-eight hours.

Milk is not coagulated.

The bacillus does not produce indol, phenol, or cresol.

The maximum temperature (moist) of the bacillus is 56° to 57° C. for an exposure of fifteen minutes.

The optimum temperature is 35° to 37° C.

The action of the more common disinfectants on the bacillus is as follows:

A solution of corrosive sublimate, 1 to 60,000, kills it in two hours.

A solution of carbolic acid, 1 to 220, kills it in two hours.

A solution of carbolic acid, two and a half per cent., soft soap, one and a half per cent., 1 to 6, kills it in two hours.

These exposures were made in bouillon at incubator temperature.

PATHOGENESIS.—Four chicks, taken from three different unaffected broods, were inoculated. Subcutaneous injection was made on the breast in each case with 0.5 to one cubic centimetre of a bouillon culture twenty-four hours old. The chicks were all apparently healthy. During the course of the experiment they were kept in separate and well-ventilated boxes, and supplied twice a day with fresh water and food (moist bread, cracked corn, etc.). Sand and pebbles were also thrown into the box occasionally.

Chick I.—A bantam, about four weeks old. Three days after the inoculation it appeared sick. It became less active and ate less. The feathers became slightly ruffled. In a week the chick began to recover, and two weeks after the inoculation it seemed as well again as a companion chick which had not been inoculated and which was kept in a separate box.

Chick II.—Two to three weeks old. In two days after the inoculation the chick became sluggish, kept to one corner of the box, and ate little. Diarrhœa soon followed. The disease grew worse until the eighth day, when the chick refused entirely to eat and became very poor. Its crop was empty and its wing feathers became ruffled. The chick was unable to walk, and lay on its side, with wing spread out. On the ninth day, however, it began to recover. It was killed on the eleventh day.

Chicks III and IV.—About two weeks old. Within two days after the inoculation there were symptoms of disease. Pronounced diarrhœa was among the first indications; the chicks became quiet. Later, they refused entirely to eat, and remained in one place, standing erect, and with drooped wings. They rapidly became very poor. One of them died in four days, the other in a little less than five days. In both instances the crop was empty; the neck seemed long and thin; the intestines were pale and almost empty, and the liver was pale, but marked in places with dark-red spots and streaks.

Pure cultures of the original bacillus were obtained from the liver of each of the last three chicks, and in one instance from the lungs and kidneys. The same organism was identified also in the blood beneath the skin, and in two instances in the fæces.

Stained sections of the livers of chicks II, III, and IV presented very much the same appearance as those from the original chicks. The bacilli were not grouped, as in the case of anthrax, but scattered throughout the whole section, and appeared identical in form and size with the original bacillus when grown on agar.

It is evident that the disease is a form of septicæmia, and that, in the above form at least, it does not attack grown chickens. In many respects it resembles the bacillus of fowl and of hog cholera; but that it is neither of these can readily be seen. The bacillus of fowl cholera is non-motile, and colonies of it on gelatin possess a dark centre surrounded by a peripheral zone. The new bacillus is motile, and does not produce such colonies on gelatin. Stained preparations of both the fowl- and hog-cholera bacillus often show unstained areas, to some extent resembling spores. This has not been observed with the new bacillus. The bacillus of hog cholera stains much more readily with the aniline dyes than the new bacillus; and, finally, colonies of fowl and of hog cholera on agar do not possess the peculiar rosette figuration on the surface that those of the new bacillus do.

A brief summary of the diagnosis was submitted to Dr. Salmon, of the Bureau of Animal Industry of the United States Agricultural Department. In his reply he states that, according to the data obtained from me, the disease resembles asthenia and leucæmia in some respects, but that in general it is decidedly different.

So far, during the course of my investigation, I have been unable to find any literature bearing upon this subject. I am indebted, however, to Professor Robert E. Lyons for the many valuable suggestions which I have received from him.

REPORT OF A CASE OF

HÆMATURIA DUE TO RENAL CARCINOMA.

WITH ENDOVESICAL PHOTOGRAPHS.

By FREDERIC BIERHOFF, M.D.,
ASSISTANT, DEPARTMENT OF GENITO-URINARY DISEASES,
BERLINER ALLGEMEINE POLIKLINIK;
ASSISTANT AND CYSTOSCOPIST, GYNÆCOLOGICAL POLICLINIC OF DR. R. KNORR,
BERLIN, GERMANY.

ONE of the most alarming of clinical symptoms, both to physician and patient, in precystoscopic days was hæmaturia: alarming to the patient, then as now, because of the terror caused by its presence, and fear of the consequences; to the physician because of a knowledge of the gravity of the condition, and of ignorance of the source. At the present day, however, thanks to the perfected cystoscope, the diagnosis of the source of the bleeding may be made with comparative ease by the skilled cystoscopist, and with the minimum of danger to the patient. I say *skilled* cystoscopist advisedly, for this instrument may become, has even become, in the hands of the *unskilled* a most dangerous weapon. With it we may determine whether the source of the hæmorrhage is vesical, ureteral, or renal; its value is so self-evident that I need not dwell further upon it.

It is not within the scope of this communication to discuss all the causes of hæmaturia further than to say that I do not believe in the existence of so-called "idiopathic or angeioneurotic hæmaturia," but that in every case it is a symptom of some tangible pathological change in the urogenital tract. At the recent meeting of the French Association of Genito-urinary Surgery the question of hæmaturia was thoroughly discussed and many causes given. Malherbe and Legueu always found positive lesions—in one case, calcareous incrustation of a pyramid; in another, very slight tuberculous lesions. In the largest number they found chronic nephritis and, in some, movable kidney. They also expressed doubt about the diagnosis of hæmophilic or angeioneurotic hæmorrhages. At the same meeting Guyon and Albarran reported two additional cases of hæmaturia during pregnancy—one during the sixth month, another during the seventh month of a second pregnancy. Hamonic spoke of the condition as being at times premonitory of certain renal affections, and quoted five cases which later came to operation. In one there was found a parenchymatous nephritis; in another, ramifying renal calculus; in another, miliary tubercles; in still another, cancer of the kidney, and in one no change whatever was discoverable. It must be a question whether these cases quoted by Hamonic were so much premonitory as they were symptomatic of already present, though at the time, perhaps, unsuspected, pathological changes. In the last-mentioned, also, there is no report of any examination of ureter and bladder. Escat called attention to renal hæmaturia in prostatics; Imbert cited a case in an undoubted hæmophile, and Pasteau one due to movable kidney.

Of recent authors, Casper, Guyon, and Fenwick give classical examples of the value of cystoscopy in deciding the source of the hæmorrhage. The first-named, in his *Handbuch der Cystoskopie*, reports a case of hæmaturia in which cystoscopic examination revealed a blood clot protruding from the left ureter. No contraction of the ureter was discernible, even after waiting for half an hour, and catheterization of the ureter brought forth no urine, but blood only. Palpation revealed a large, hard tumor of the left kidney. Guyon * reports three cases of hæmaturia due to renal cancer, two in the male and one in the female, in two of which cystoscopic examination revealed the source of hæmorrhage to be renal. Fenwick † reports two cases of painless, unilateral, renal hæmaturia, due to angeioma of renal pelvic papillæ, in young women, in which cystoscopy revealed the streams of blood issuing from the left ureter in both cases.

I append the notes of my own case. On January 11, 1900, I was requested by Professor Dr. Gebhard to examine for him with the cystoscope a case of persistent severe hæmaturia lying at the hospital of the "Graue

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* Remarques sur l'évolution et le diagnostic des tumeurs cancéreuses du rein. *Annales des maladies des organes génito-urinaires*, No. 1, 1900.

† *British Medical Journal*, February 3, 1900.

Schwestern" in Berlin. The history (for the notes of which I am indebted to Professor Gebhard) was as follows:

Frl. R., aged fifty, nullipara. In November, 1898, the patient first began to discharge bloody urine. This attack of hæmaturia lasted four weeks. There was considerable tenesmus present, the pain being referred chiefly to the region of the bladder and to the rectum. She states that at times a sudden painful desire to urinate occurred, followed by the discharge of bloody urine or of clear blood. At times this tenesmus was continuous, the patient being also compelled to arise and urinate during the night, at half-hour intervals. Following upon this first attack there was a period of rest, of four months' duration, during which the urine remained clear. Then came a second attack, lasting four weeks, upon which followed another period of clear urine for three months, when a third attack set in, lasting three days. Since the last-mentioned attack, occurring in August, 1899, the patient states that the urine has seldom been normal, and since the 7th of January, 1900, the pains and bleeding have been increased in severity. During August, 1899, the patient spent a period of several weeks in the hospital, where she was cystoscoped, the diagnosis of cystitis made, and vesical irrigations were employed, without benefit.

Physical examination, by Professor Gebhard, on January 9, 1900. The patient is a small, very anæmic woman. Abdomen flat; no points of tenderness. Hymen intact, vagina narrow, cervix small; uterus small and anteverted. No tenderness on palpation of the bladder region. No changes discoverable in the tissues surrounding the bladder and uterus. The catheter removed some cubic centimetres of slightly turbid, light-yellow urine, free of blood. No abnormities discoverable in the bladder on examination with the catheter. Urine contains albumin. Examination of the kidney regions reveals nothing abnormal.

On January 11th, the hæmorrhage having become very profuse and continuous, I was requested by Professor Gebhard to examine the case and, if possible, determine the source of the bleeding. At the time of examination the anæmia had become so extreme that the patient went into collapse before the examination could be begun, and subsequent operations had to be hurried, and could only be carried out after the injection of stimulants and saline infusion.

Examination.—The catheter removed about fifty cubic centimetres of what was apparently pure fluid blood, dark-red in color, which, on being allowed to stand during the rest of the examination, clotted after the characteristic manner of clear blood. The patient expelled several large, irregular clots, evidently formed in the bladder, as well as several long, thin, round, stringy clots, whose shape pointed to their probable ureteral origin. On careful irrigation the fluid at length returned sufficiently clear to permit of cystoscopic examination.

Cystoscopy.—No changes in the vesical mucosa discoverable. Right ureteral orifice occluded by a blood clot which protruded for about a centimetre into the bladder (see Fig. 1). The left ureter was normal, and was seen to discharge clear urine actively. The lower, left portion of the bladder was seen to be occupied by a large blood clot (see Fig. 2), which prevented proper manipulation for ureter-catheterism before another irrigation to discharge the clot could be made. In view of the fact that the patient had a second time become comatose, and that catheterization of the ureters was not an absolute necessity here, this procedure was omitted, and a diagnosis of right unilateral hæmaturia of renal origin, probably due to renal tumor, was made.

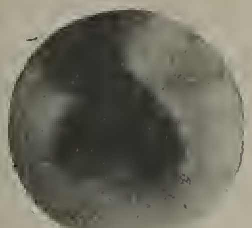
FIG. 1.—Frl. R., blood clot protruding from right ureter.

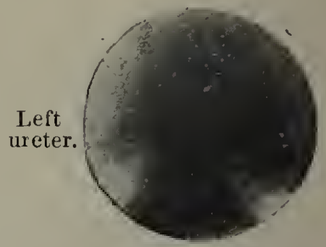

FIG. 2.—Frl. R., clot on left *cul-de-sac.*

The patient was, in view of her extremely critical condition, at once replaced in bed, and a course of active stimulation continued until the 13th, when nephrectomy was performed by Professor Gebhard, the right kidney and as much of the ureter as could be reached being removed. The kidney was found to be carcinomatous. The subsequent history of the case was uneventful, the urine being for two days slightly tinged with blood, due to the discharge of the vesical and ureteral clots, since which it has remained free. On February 22d the patient was kindly referred to us for further treatment at the policlinic of Dr. Knorr. The urine had remained free of blood, but was still slightly turbid. The patient, though still very anæmic and cachectic, felt much stronger. There is still some degree of abnormal frequency of urination, without tenesmus, however. The urine contained a trace of albumin, was acid in reaction, and in the slight sediment there were no red blood cells, and but few pus cells, the sediment consisting chiefly of mucin and epithelia. Bacteria were seen only in a few solitary specimens.

Cystoscopy. — Very anæmic mucous membrane, marked by no points of inflammatory change. The left ureter was seen to discharge clear urine actively.

March 24th.—Still slightly abnormal frequency of urine. Bladder normal. Urine entirely normal and free of albumin. General condition much improved.

The history of this case demonstrates: 1st. The unreliability of physical symptoms in the determination of the source of the bleeding in hæmaturia. 2d. The reliability of cystoscopy in this direction. 3d. The freedom from danger to the patient of cystoscopy, when properly performed.

In conclusion, I desire to express my sincerest thanks to Professor Gebhard for the notes of the case, as well as for the permission to publish them; also to Dr. R. Knorr for his kind and capable assistance in the cystoscopy, as well as in the taking of the photographs; to Messrs. Louis and H. Loewenstein for the excellent photographic cystoscope placed at my disposal, and to Court Photographer Günther, for the skillful enlargement of the original plates and completion of the pictures.

The Giant Son of a Dwarf.—The *Gazette médicale de Paris* for April 21st cites from the *Presse médicale* the account of a giant, seventeen years of age, seven feet four inches and a half high, whose father was a dwarf.

A SUMMER PLASTER-OF-PARIS JACKET FOR POTT'S DISEASE.

By R. TUNSTALL TAYLOR, B. A., M. D.,

AND

SMITH HOLLINS McKIM, M. D.,

BALTIMORE.

When we come to examine the mechanics of the treatment of Pott's disease we find that three points of pressure are necessary to prevent or overcome the tendency of the disease to produce deformity. These points of pressure should be mechanically united, and should consist of the sternum and iliac spines in front and the kyphos in the back.

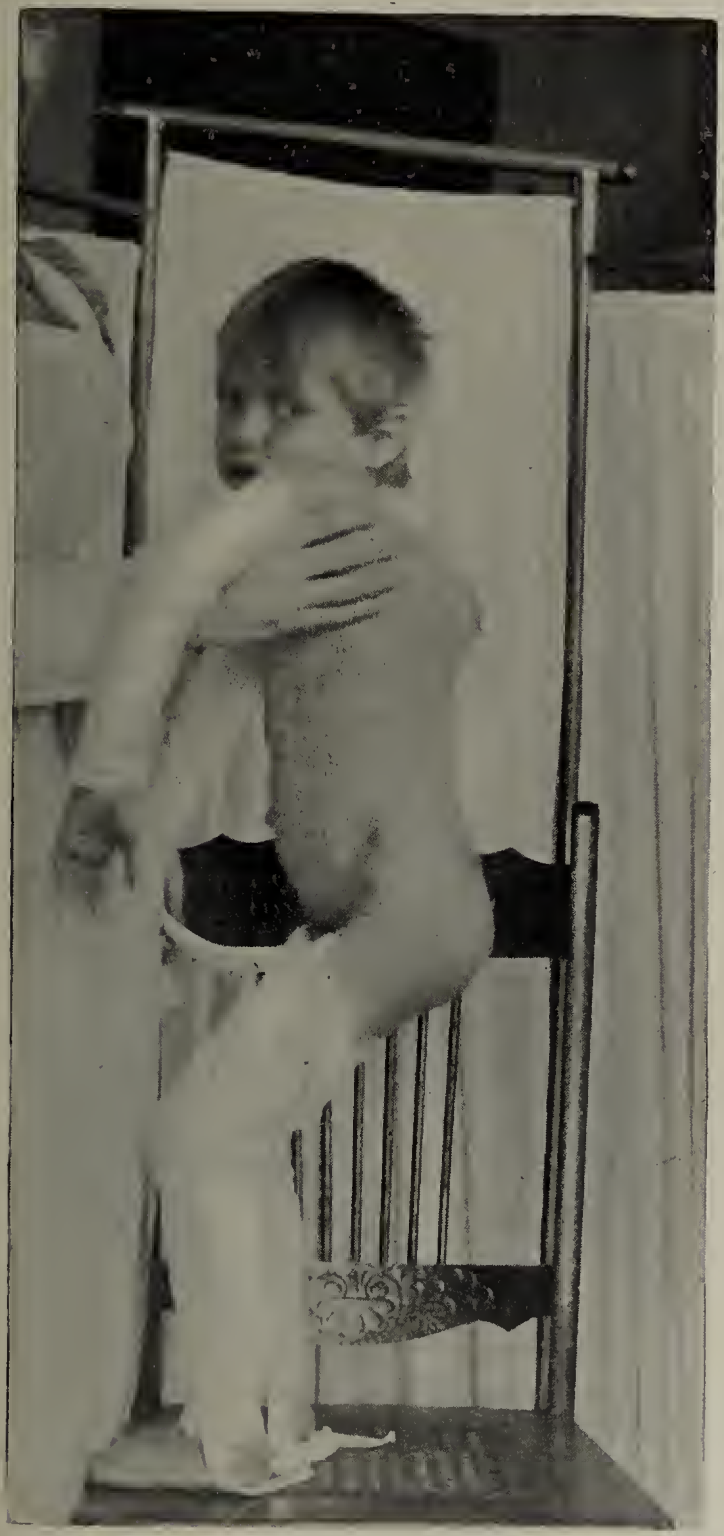

Fig. 1.—A patient (F. Q.) with paraplegic symptoms before reduction of the kyphos.

Probably every one has noticed in plaster jackets that the first point to soften after they are worn some time is over the abdomen, due to the respiratory movements of the abdominal wall, and it occurred to us, why not leave as much plaster bandage as possible off the abdomen, as it affords no osseous support, and in our southern climate would make the jacket cooler? Then, if the segment of the column above the kyphos is held well back by pressure against the sternum through the ribs (which are raised by raising the arms upward and backward), it is unnecessary to carry the plaster bandages more than an inch or more above the kyphos, thus using still less of a jacket and adding to the coolness.

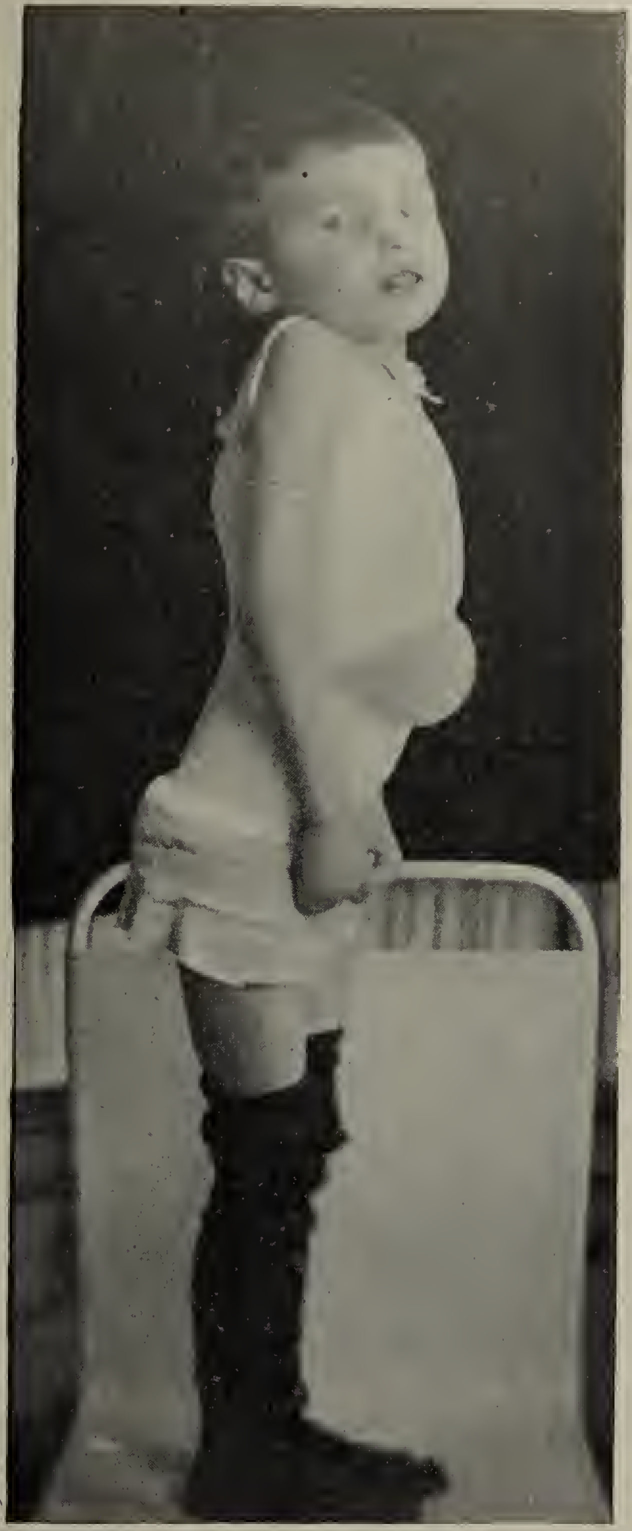

Fig. 2.—Summer plaster jacket on patient (F. Q.), showing reduction of deformity and no paraplegia. Abdomen unusually prominent (through the "window"), as the child had been crying.

Our results by this method have been just as satisfactory as where a whole jacket is used, but, of course, it is not applicable above disease in the sixth dorsal vertebra without some form of head support attached to the jacket. This method, so far as we know, can only be used in conjunction with the kyphotone, with the pressure rod for lessening the deformity. It will thus be seen that these jackets are virtually a figure-of-eight plaster bandage. Starting at the sternum, they are carried backward and downward over the corrected gibbosity, thence forward around the ilia, and in the reverse order to the starting point, recrossing in the back, where small strips of zinc can be molded in with the hand and incorporated in the jacket to strengthen it. The cuts give a good idea of the appearance of these jackets, and we would call your attention especially to the window and the lessening of the deformity. It is to be borne in mind that under the plaster jacket over the kyphos are one or two layers of piano-felt to prevent excoriation, and these add to the apparent size of the deformity.

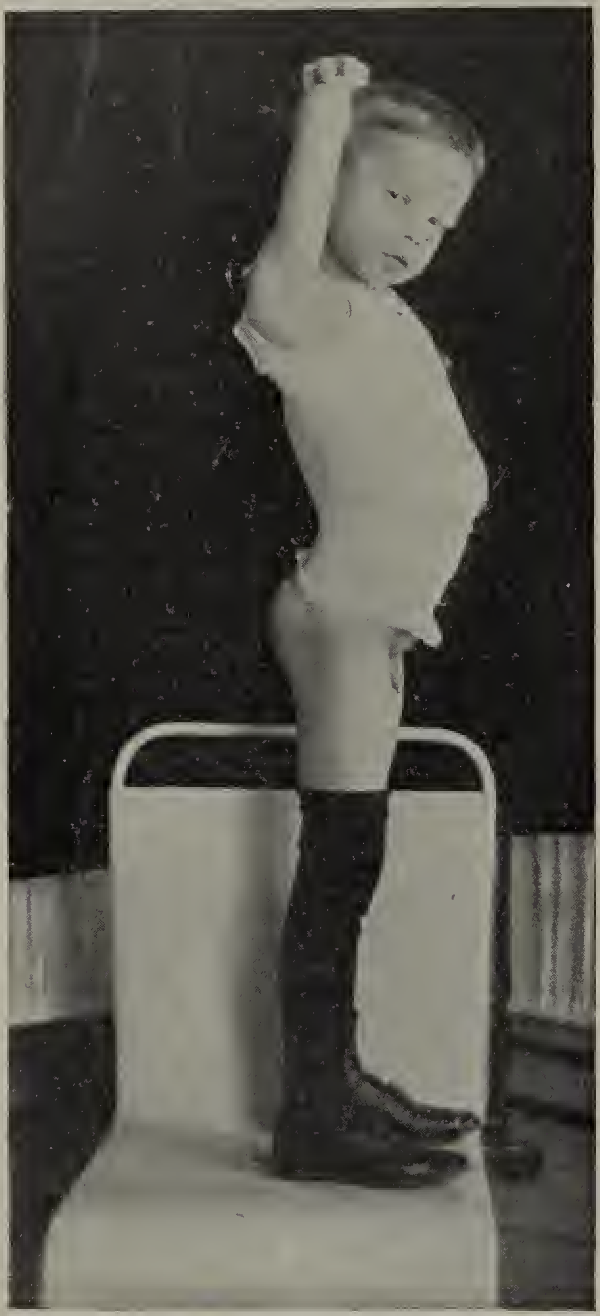

FIG. 3.

Thyreoid Extract as an Emmenagogue.—M. Glynn (*Gazette hebdomadaire de médecine et de chirurgie,* April 26th) recently drew the attention of the Medical Society of Liverpool to the emmenagogue action of thyreoid extract, which he had employed for this purpose in young girls in whom puberty was establishing itself with difficulty and who showed amenorrhœa or irregular menstruation. In these cases the administration of thyreoid extract in a dose of seven grains and a half daily reestablished and regulated the menstrual epochs.

A STUDY OF THE APPLICATION OF THE GALVANO-CAUTERY IN THE NOSE.

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[From the laboratory of the Manhattan Eye and Ear Hospital.]

(*Concluded from page 716.*)

ONE can not in a paper of this kind dwell upon the recognition of the forms of congestion, hypertrophy, atrophy, or increase of the bony structure simulating an hypertrophy. It is supposed that any one who uses the cautery will do so only after a careful differentiation of the conditions present, and it is not expected that any one will cauterize a hyperostosis of the turbinated bodies under the belief that he is dealing with a form of mucous-membrane congestion or hypertrophy. It is, I believe, the mistakes of diagnosis that have given the cautery methods such a black list of bad results, together with the overuse of such a ready method of destruction.

Where we are dealing with a body composed principally of an increase of round cells, such as adenoids, hypertrophied faucial and lingual tonsils, the indication for the use of the cautery is different. Here we may use safely the old form of cautery point and the superficial destruction will not be detrimental. In round-cell hypertrophies, such as adenoids, tonsils, lingual tonsils, the cautery would seem to be an ideal remedy, since here a substitution of new tissue for the hypertrophied tissue *over a wide area* is the result to be desired.

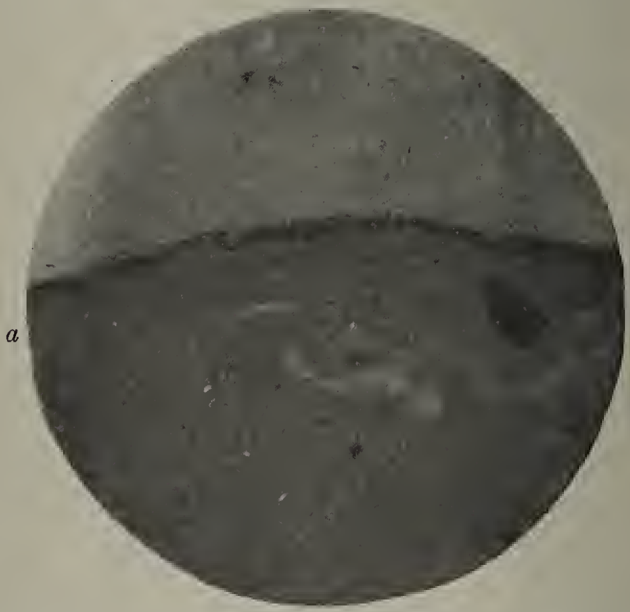

FIG. 7.—Destruction of epithelium and hyaline membrane wide from cautery application. *a,* hyaline membrane and epithelium destroyed.

The absence of reaction or exudation in the specimens is peculiar, since it does not conform to our clinical experience. I had rather expected the microscopical fields in the neighborhood of the point of cautery application to be in a state of intense infiltration with leucocytes, together with other evidences of inflammation.

The redness and swelling, which we see clinically resulting almost always after a cautery application, are absent or have been unnoticed in these specimens. Since such a condition is not observed under the microscope, it would seem that the picture of inflammation which we see so commonly clinically after cautery application must be a high grade of only a serous exudation with congestion. It is certain that in cauterization, afterward kept clean and aseptic, we observe almost no exudation of leucocytes. This is a point in favor of the cautery, since it resembles very nearly the results of cutting. It would seem then, that, unless a cauterized area was infected, it might behave as quietly and heal as inoffensively as a surgical wound; and this brings us at once to a consideration of the causes of unfavorable conditions, inflammation and sepsis from the use of the cautery. It will be noticed in specimen 156, which was cauterized and immediately removed, that while the edges of the cauterized area were thoroughly destroyed the centre of the cautery slough was not so thoroughly burned—that is, the edges were browned or blackened, received no stain at all, and remained under all the treatment of the specimen entirely amorphous, while the centre of the slough still shows some organic material and fragmentary remains of nuclei which stained more or less and which preserved some of the original tissue structure. This material in the slough, which is entirely destroyed, probably could never become septic, but the other (the central part) could undoubtedly act as a culture medium for any bacteria which might subsequently be carried to it and start up a septic process which would spread to the adjoining tissues. The practical point, again, is to use such an electrode as will entirely destroy the whole slough, so that no part may remain to start a septic process. A very important point is decided by specimens 156 and 530, regarding the influence of the heat used at one point upon tissues distantly located from the slough; in other words, the study of how deeply away from the slough is the effect of the cautery felt enough to produce changes which may be recognized microscopically. A study of 156 shows that some extensive effects are produced by cautery. There is, first, the wide destruction of epithelium and hyaline membranes, which alone will make a very interesting future study (Fig. 7). Something more of the nature of this hyaline membrane should be known if it shows such exceeding sensitiveness to heat influences. The further study of 156 also shows that the interstitial tissue wide of the cautery point of application shows some disorganizing tendency. The interstitial tissue stains less clearly than a specimen which has been treated with cutting, such as 178, for example. Just what this indifferent staining means it is impossible to say from a microscopical study, but generally tissues that take the stain so poorly are undergoing some degenerative changes. In specimen 530, removed forty-eight hours after cauterization, the venous sinuses in the neighborhood of the cauterized area remain filled with blood, and in some places it seems that the blood has coagulated in these sinuses before removal, thus forming a venous thrombus in parts of the erectile nasal tissue. If this is so, then we use a remedy which is producing an effect the extent of which it is impossible to estimate upon a tissue removed from our observation. This may ultimately result for good or evil—for good, if it is desirable to reduce the circulation in the venous sinuses, a desideratum in congested cases; for good, also, if desirable to destroy the hyperplastic tissue in the deeper turbinated structure; for evil, if the results will completely destroy the circulation in a part where not desired and lead to sloughing; for evil, if the new connective tissue which will be produced will stenose racemose mucous glands and cause cystic atrophy; for evil, if the resultant wound becomes superficially septic when this tissue, rendered less vital by the heat, will serve as a nutrient material for bacteria; and, lastly, for greatest evil if this effect is obtained upon tissue where it is impossible to estimate the extent of the thrombosis, especially where it lies in relation to important structures themselves having more important relations. Especially could this be true of the middle turbinated region, or indeed any part of the ethmoidal bone, the upper nasal sæptum, and the outer nasal wall. These parts all have proximity to important cavities, the sinus and cranial cavity; and the variations in the relation of these parts are so great, the communications of the nose with these cavities so numerous, especially through nutrient blood-vessels, lymphatics, and numberless foramina carrying vessels and nerves, that it would seem, if our observations are true, imperative to make the rule that these parts—the upper sæptal region, the nasal roof, the ethmoidal region, the outer nasal wall, and the region known as the middle turbinate body (except the anterior and posterior ends)—should never be approached with the cautery.

The absence of leucocytic infiltration in these series of experiments speaks well for the cautery, and shows that, while the effects of the cautery may excite irritation and subsequent œdema, if the cautery cut is uninfected no inflammation results from the burning. In the series of sections where the knife was used there was not less leucocytic infiltration than in the cautery series. The cautery, then, excites no more inflammation than the knife in the immediate neighborhood where it is used; but the effect of the cutting is entirely circumscribed and limited to the area exposed to the cutting edge, while the effect of the cautery extends beyond its point of application for an unestimated area with a possible unknown result. The œdema which follows a cauterization is something peculiar to the cautery; it can not be recognized under the microscope, and is probably a temporary serous exudation into the tissue simply from the effects of the degrees of heat used. This reactionary swelling is seen in each case clinically, but when the section cauterized is removed and examined during this reactionary swelling or œdema nothing of it can be recognized microscopically, because the technique in preparing the specimens shrinks up the swollen cells and removes any serous exudate. If this swelling were in any way allied to true inflammation, however, the evidences of it would be observed microscopically, the leucocytic infiltration being a factor not removed in preparing the specimen. This swelling, which we see accompanying each cauterization, is probably only serous exudate into the connective-tissue interspaces, together with a considerable congestion of the erectile tissue. When the connective-tissue interspaces are largest, and loose areolar tissue supports the mucous membrane, cauterizing is attended with some danger to severe œdema. Such places are the uvula, the faucial pillar, the arytænoid region, glosso-epiglottic fold, pyriform sinus, and the region of the chorda muscularis. These regions must be cauterized very superficially, for an extensive œdema is here a serious matter. After one hundred hours the healing process has progressed enough to note changes microscopically, the slough has disappeared, new connective tissue is forming in the region of the burned edges, and the blood-vessels are noted more numerously present than in parts removed from the cauterized area.

After three hundred and sixty hours the repair is progressing rapidly, as is shown in the description of specimen 177, where granulation tissue is repairing and no bad results from cauterization can be observed in this specimen.

After the specimen has been entirely healed the only structural changes which have been produced by the cauterization are, so far as can be discovered microscopically, the replacement of physiological tissue by means of the production of new connective tissue. The cautery has destroyed the hyaline membrane and epithelium, but this has apparently been completely repaired. It has also destroyed the vessels, nerves, special functional erectile tissue, and interstitial tissue in the neighborhood of its application, and has substituted for this tissue a new connective tissue without any functional activity. It has destroyed all that the heated point has effected as completely as if it had been excised and removed from the body, but the cautery has also destroyed more than the knife would if applied to the same area, because for a distance beyond the edges of contact represented by the slough there has also been a partial destruction of tissue. The cautery then is more powerful than the knife, destroys nearly as quickly and for a greater area than the knife—that is, the effects of the knife and cutting are limited to the edges or borders of its application, while the cautery applied over the same area would devastate and destroy beyond this area. It is usual, however, in a snare or saw or cutting operation to remove perhaps more than the exact region of hypertrophy, while with the cautery it is customary to produce a smaller area of destruction than where the knife is used. The results then are about the same, since more is cut having no area of destruction beyond its borders, and less is burned with a destruction extending beyond the borders of its application.

The cautery is then a more difficult matter to control than the cutting, because of certain localities where it can not be used without danger of complications; it is also a more dangerous method to use. It is not, as has been commonly supposed, a ready method for the cure of hypertrophies in the hands of the merest beginner in nose and throat work. On the other hand, it is a powerful remedy for good in selected cases, but should be used only in the hands of the most experienced men, who are able to regulate its effect. It is much safer to give the cutting operations into the hands of the beginner in nose and throat work, for he can do less harm with his scissors, saw, or snare than with the red-hot point of the galvano-cautery.

I have said that the cautery is a most powerful remedy for good in selected cases. What, then, are the conditions in which it may be used with success in the hands of a careful operator?

There are three conditions in which the cautery may be selected to do the work at hand, and in the study we have made to-night it is possible to state that the cautery carefully used may accomplish as much as any other surgical procedure. The first general indication for the cautery is that it should be used upon soft tissue structures and not upon the more condensed form of tissue, such as cartilage, periosteum, and bony structures.

The second rule is that it will accomplish its best results upon tissues composed of excess of round-cell structures, and will not act so favorably upon connective-tissue structures.

The third rule is that it is best used upon tissues where blood-vessels are to be destroyed—*e. g.*, those the seat of chronic congestion rather than those structures which have gone on to a subsequent marked hypertrophy or a polypoid form of inflammation.

With these three observations as a guiding principle it is further necessary to specify upon which anatomical parts the cautery may sometimes be used. The nasal sæptum has been often treated with the cautery. I can only believe that here it will do harm and perhaps cause necrosis of the cartilage by destruction of nutrition. However, when the erectile tissue upon the sæptum, which is only located at the tuberculum sæpti in the upper half of the sæptum, is the seat of vascular engorgement of a chronic nature, it may be necessary to destroy this, and in such cases the cautery would accomplish the work better than other methods.

Upon the turbinated bodies the use of the cautery is limited to those cases which are in a state of chronic congestion with or without hypertrophy, and to the cauterization of hypertrophic masses of turbinated tissue, under the rules of operation laid down in this paper, in special localities, and under particular conditions. When the hypertrophy is accompanied by congestion and a distention of the erectile tissue the cautery will yield its most brilliant results. In hypertrophic masses going on to polypoid changes, while the cautery may be used the results would not be as good as in the former cases. Upon hypertrophied posterior tips, which contract well under cocaine, the cautery is especially indicated. The particular localities in the turbinated regions which should be avoided in using the cautery are the upper surface of the inferior turbinated body, the main body of the middle turbinated body, the region of the outer nasal wall, and the ethmoid region. The particular turbinated localities upon which it is possible safely to use the cautery are the under and inner surfaces of the inferior turbinated body, together with its anterior and posterior ends; also the posterior end of the middle turbinated body, and sometimes the flabby hypertrophy of the anterior tip of the middle turbinated body, if a careful examination will satisfy us that it does not contain in its anterior end an accessory anterior ethmoidal cell, the condition known to most of us as a "bony cystic turbinated."

When polyps are present, whether they are large or small, the cautery should never be used. In polyp formation all methods which do not destroy the periosteum are futile to prevent a return of the polyps, and we have seen that the cautery should never be used upon localities so near the osseous structure, and especially in the region where these polyps originate—namely, the hiatus semilunaris, the bulla ethmoidalis, and the body of the middle turbinated region.

In nasal hæmorrhage from any part it would seem unwise to use the cautery except where the hæmorrhage is non-surgical; where caused by operations, pressure yields much better results than the cautery, but in very localized bleeding from a superficial ulceration the cautery may be used.

In nasal ulcerations, when not due to malignancy or syphilis, particularly in the form of superficial atrophic destructions of epithelium, the cautery may be used superficially to stimulate healing, but must be used repeatedly and always at periods of about two weeks. In malignant growths the cautery should never be used.

In round-cell structures which are hypertrophied, such as adenoids, hypertrophied tonsils, enlargement of lingual follicles at the base of the tongue, follicular pharyngitis, and cellular infiltration in laryngeal tissue, the cautery will attain its most brilliant results and can apparently be used without any danger. It is necessary to mention, however, the danger of some considerable œdema which may result from the use of the cautery in the neighborhood of or upon structures having as a base very loose areolar tissue, and especially is this a danger in the loose tissue in the vicinity of the larynx, the pyroform sinus, uvula, and the faucial pillars.

Résumé.—We have seen as a result of the study of these microscopic specimens that the cautery is a destructive element even more powerful than the knife; that it destroys physiological tissue as completely as if it were removed from the body; that its effects extend, unlike those of the knife, to a region beyond its limit of application; that it is subject to all the dangers of surgical accident which come from using the knife, with the single exception of hæmorrhage; and that, besides the ordinary surgical dangers, it has special dangers of its own—that is, to furnish a nutrient pabulum for bacterial growths. We have seen, too, that, when used in the hands of a novice or carelessly, it is capable of producing a subsequent atrophic condition worse than the original disease; and we have also made the observation that its present method of use by linear cauterization is, to say the least, theoretically incorrect. Nevertheless, we have also seen that the cautery in special and selected cases, used by a proper method and in the hands of a careful operator, may accomplish its legitimate work better than can be done by cutting methods.

In conclusion, I wish to thank Dr. Edgar Thomson for his skill in preparing the photomicrographs.

THE GENERAL CHARACTERISTICS OF RAY FUNGI AND THEIR RELATION TO CERTAIN BACTERIA.

By LUDVIG HEKTOEN, M. D.,
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THE ray fungi are micro-organisms which have much in common with both the hyphomycetes and the bacteria. They resemble the former especially in growth and development; the latter especially in regard to some of the structural details, and also in the mode of action of the pathogenic forms.

Like the hyphomycetes, the typical ray fungi develop from small round spores, or conidia, into cylindrical threads, which branch and form a network.

The threads may be said to have an average thickness of half a micron; they do not contain any chlorophyll; originally they are homogeneous and solid, like many bacilli, and, as a general rule, they stain like the bacteria, retaining the color with Gram's method. Each single thread with its branches represents one whole, single organism.

From the surface of the mycelial layer arise hyphæ, or air threads, which by segmentation give rise to short chains of small round elements or conidia, which secure the propagation of the plant. The hyphæ are generally somewhat thicker than the mycelium.

In the older cultures the threads rapidly separate into shorter fragments which resemble spirilla, bacilli, and cocci, which in the typical ray fungi do not multiply as such, but, when transplanted, again grow into branching threads.

Kruse designates this later process fragmentation, and the formation of spores segmentation. The fragments and spores stain in the same manner as do the threads. In fragmentation the pieces, for a time at least, remain inclosed within the thin, extremely delicate, almost invisible, external membrane, but eventually they are set free by the rupture of the membrane. Whether the sporelike bodies formed in the interior of the mycelium in connection with fragmentation are equivalent to the acrogenous spores has not been determined.

The importance of the formation of spores by segmentation in the propagation of the plants is shown by the fact that they develop in enormous numbers, covering the surface of the colonies with a white layer.

How far the spores are to be regarded as lasting forms similar to bacterial spores is a question. The spores are far more resistant to heat, to drying, and to other injurious substances than the threads. They do not exhibit any peculiar staining reactions, and there have been elaborated no procedures for double-staining of the spores and the threads, as in the case of the sporogenic bacteria.

In some otherwise typical ray fungi hyphæ develop but fail to give rise to spores (*Actinomyces albido-fuscus asporogenes* of Berestneff). Apparently such sterile hyphæ are white.

The majority of the ray fungi are aerobic and facultative anaerobic. A few are anaerobic.

The optimum temperature is 37° C. The *Actinomyces invulnerabilis* of Acosta and Grande Rossi and the *Actinomyces thermophilus* of Kedzior thrive at and resist high degrees of heat.

The majority are proteolytic, both in gelatin and in blood serum. Nearly all produce a peculiar moldy or earthy odor. Apparently the characteristic odor of freshly turned soil depends upon the presence of *Actinomyces odorifer* of Rullmann.

While some produce no pigment, all sorts of more or less diffusible pigments are formed in the colonies of other varieties, and many varieties or species differ from each other only in the color of the pigment produced; most ray fungi produce one pigment, but polychrome varieties occur. Oxygen seems quite necessary for pigment formation, which is also favored by glycerin and glucose. In all the varieties the pigment is amorphous, except in the cases of *Actinomyces violaceus* and *rubidaureus,* whose pigments are crystalline. The present division into species, introduced by Gasperini, rests largely on the pigment formation.

In general the colonies resemble those of some molds and to some extent the colonies of the tubercle bacillus. On solid media there develop tough, wrinkled, spherical growths, which send prolongations down into the substratum. The younger colonies are generally of a radiating or star-shaped appearance; hence the appropriateness of the word actinomyces, even though first used by Harz as descriptive of the granules which most of the pathogenic ray fungi form in the tissues. As the cultures become older or dry, the surface is generally covered by a white powder due to development of sporing air threads. In liquid media globules or ball-like masses are formed; the fluid remains clear. Many ray fungi also form a surface film, which eventually is covered by a layer of spore dust. Moisture, glycerin, and the absence of oxygen delay spore formation by hyphæ; in the absence of oxygen spores are sometimes formed in the threads, as in the case with *Actinomyes albido-flavus* when it grows in water. On surface growths small drops of oily fluid often appear. The hyphæ may be oily and hard to stain (Lachner), and Almquist points out that the oily exterior of the spores prevents wetting, and thus favors distribution by the air currents. In the cycle of development the different organisms classed as ray fungi touch each other so frequently that it seems quite correct to bring them together into one group.

Ray fungi are abundant in Nature, occurring in the air, water, and soil, and especially upon various grasses. They have been found in the mouth, pharynx, stomach, and intestines, upon the conjunctiva, skin, and in the vagina of healthy human beings, as well as to some extent in animals. In a hundred and eight examinations of human throats for diphtheria bacilli, Thiry encountered twenty-seven colonies of ray fungi. Upon ninety-four plates of agar and gelatin exposed to the air, Rossi-Doria obtained forty-nine colonies of ray fungi; as compared with the other organisms, about one colony of ray fungus occurred to every five hundred other colonies. The same number of colonies were obtained in the different seasons (Italy). In Rome he obtained about one colony to every two plates; in the woods and in a vineyard, about two colonies to every plate. In one plate exposed in the woods he obtained twelve colonies. He found *Actinomyces albus* thirty-five times in forty-nine, *Actinomyces niger* six times, *Actinomyces violaceus* three times, *Actinomyces albido-flavus* twice, *Actinomyces aurantiacus* once, and *Actinomyces carneus* once.

Undoubtedly the pathogenic forms are the result of adaptation to parasitism of ray fungi in Nature. The *Actinomyces albus* has been isolated from air, grain, and water as well as from actinomycotic lesions. Lesions in the skin and mucous membranes open the door for the entrance of ray fungi upon the fragments of grasses and in the air, soil, or water. Judging from the inoculation experiments with the typical ray fungi of actinomycosis with granules, there is good reason to believe that many of these organisms are slow to adapt themselves to new surroundings, and the comparative infrequency of actinomycosis indicates that the ray fungi as a rule find it difficult to acquire pathogenic powers.

The peculiar hyaline change in the membrane which leads to the formation of the characteristic clubs upon the surface of the granules formed in the tissues by many of the pathogenic varieties has long been emphasized, as well as the fact that the lesions are essentially chronic, characterized on the one hand by the production of granulation tissue with foci of suppuration, and on the other by the formation of nodular processes with caseation ("pseudo-tuberculosis"), while the production of virulent toxines seems of slight significance.

The ray fungi, by virtue of the characteristics just enumerated, are regarded by some as a family of the hyphomycetes; by others they are treated as a distinct group and placed midway, as the connecting link, between the hyphomycetes and schizomycetes. This is a botanical question which the pathologist is almost forced to consider because of questions of nomenclature and ætiological classification of morbid processes.

While the majority of recent writers who have touched upon this question are content with one or other of the above propositions, others find reasons for a different classification. Thus Behla carefully reviews the previous efforts at classifying the organism of actinomycosis (in the old sense) and concludes that it is undoubtedly a thread fungus with true ramifications and hyphal spores. Behla proceeds upon the incorrect supposition that actinomycosis, even in the sense of Harz, is caused by a single species of ray fungus. Imbued with the idea that actinomyces in its pathogenic form is a developmental stage of some parasitic plant fungus, Behla undertook to study the parasites of barley.

In the course of his experiments Behla obtained actinomycelial vegetations upon bits of barley stubble, inserted under the oral mucous membrane of pigs, after having been covered with *Cladosporium* and *Pleospora herbarum.* The former is a common plant mold, occurring especially upon and beneath the epidermis of cereals, living or dead, as a thick, brownish-black covering, consisting of branching segmented threads with conidioferous hyphæ. When placed upon media of vegetable matter the conidia form threads, while in fluid media the threads do not produce conidia, but buds.

Cladosporium herbarum includes several species and is classed with the pyrenomycetes, a class of ascomycetes.

Behla regards the actinomycelial masses found in the tonsillar crypts of swine by Johne and others, often surrounding fragments of cereals, and by Ruge in human tonsils, but always without reactive changes, as approaching *Cladosporium* in structure. He then goes a step farther and likens the bulbous expansions of ray fungi in tissues to conidia, regarding the branching of the clubs, the symmetric constrictions, and the apparent segmentation as supporting this already ancient view. The conidia of *Cladosporium,* he assumes, lodge in some accidental lesion and form the mycelial network which under certain conditions develops conidioferous hyphæ.

According to this view, the ray fungi belong to the pyrenomycetes, but, unfortunately for this view, the structure of the ray fungi does not correspond with that of *Cladosporium,* neither in the lesions nor in culture. Ray fungi have no septate threads, and the pathological and accidental nature of the clubs is taken for granted. The occurrence of ray fungi upon grasses, demonstrated by Berestneff, is a ready explanation of the development of actinomycelial vegetations in Behla's experiments.

For the present the ray fungi are best regarded as a distinct group, closely related to the simplest molds and to the bacteria. With the latter they are intimately connected by the bacillary forms and characters of the atypical and polymorphous ray fungi, as well as by the branching and club formation of certain rod-shaped organisms.

Whether the group of ray fungi is regarded as a family of the hyphomycetes, as advocated by Lachner, or is placed midway as the connecting link between the hyphomycetes and the schizomycetes, as urged by Kruse and Lubarsch with respect to the former streptothrices, is probably a matter of no special importance at this time.

The Atypical Ray Fungi.—The atypical ray fungi seem to form connecting links between the highest ray fungi and the nearest bacteria. The acid-proof ray fungi, such as *Actinomyces farcinicus,* resemble the bacillus of tuberculosis not only in staining properties, but also very much in their special mode of pathogenic action. The polymorphous ray fungi, such as the actinomyces of Wolff and Israel, appear to have lost such characteristics of actinomycetes as spore formation, at the same time as they have taken on certain morphological and cultural peculiarities of bacteria, including in some cases the property of existing in the rod form and of multiplying as such.

These transition forms on the part of the ray fungi are met, as it were, by certain organisms, now classed as bacteria, but which at times produce branching forms and under certain special conditions in the tissues some group themselves in masses with bulbous, hyaline projections. The bacilli—to use the old name—here referred to are the bacillus of tuberculosis and allied organisms, the bacillus of diphtheria, the glanders bacillus, and a few other less well known organisms.

The Tubercle Germs.—The facts in regard to the organisms of tuberculosis and allied bacilli, so far as this point is concerned, are briefly the following: It has long been known that the bacillus of mammalian or human tuberculosis may occur in the form of branching filaments. Cornil and Babes figured ramifications in 1883. A. Petrone, in 1884, found branching forms in the exudate of tuberculous leptomeningitis and called attention to the fact that on this account the tubercle germ should be placed between the "micromycetes and schizomycetes.".

Nocard and Roux, Metchnikoff, and Klein found branching and filamentous forms. Metchnikoff advanced the opinion that the tubercle bacillus represented a stage in the development of a thread fungus and proposed the name *Sclerothrix Kochii.* Klein looked upon the branching as a reversion to an ancestral type presenting mycelial growth.

Johan Olsen regards most bacteria as adaptation forms and not as true, independent species. They are in reality imperfect and imperfectly known fungi. Parasitic adaptation may be closely associated with pleomorphism. The ray fungi are genuine mycelial fungi which pass by various stages into bacilli, and the tuberculomyces is a ray fungus or streptothrix because it has branches.

In 1893 Fischel described threadlike, branching, and bulbous forms in the colonies and called especial attention to the great similarity in the appearance of the colonies of the tubercle organism and of *Actinomyces hominis.*

Coppen-Jones also described threadlike and branching forms of tubercle bacilli in the sputum and in the pure cultures. He furthermore made it appear probable that this organism may present a type of spore formation which is homologous with the chlamydospore formation of certain true molds, such as mucor. For these reasons Coppen-Jones regarded it as imperative that the tubercle germ be removed from the bacteria proper, and proposed the name tuberculomyces to indicate its true nature.

McWeeney, Semmer, Bruns, Babes, Marpmann, and Craig all describe branching and filamentous forms of tubercle bacilli, either in sputum or in cultures.

In 1892 Maffucci demonstrated that the bacillus of avian tuberculosis also grew in branching forms. Indeed, it seems probable that it was this organism upon which Metchnikoff made the observation already referred to. Lubarsch has made the observation that when cultures of the bacillus of avian tuberculosis, after standing in a dark place for some time, are again placed in the incubator, typical branching forms and greatly thickened bacilli occur very numerously.

For a long time the tubercle bacillus was supposed to stand quite alone, a typical bacillus presenting at the very utmost but two varieties, the avian and the human. Of late it has been found, however, that the hitherto apparently so unchangeable and strictly parasitic tubercle bacillus may receive profound modifications when passed through the bodies of cold-blooded animals, such as the frog, etc., and furthermore that organisms resembling it closely occur freely in Nature. The similarity between the acid-proof atypical ray fungi and the tubercle bacilli has already been noted.

It has been shown by Bataillon and Terre and by Möller that when the bacillus of human tuberculosis is passed through the bodies of frogs and lizards it becomes so modified that it adapts itself much better to a purely saprophytic existence than before. The growth on artificial media is more luxuriant, takes place at ordinary temperature, and its virulence is materially altered. Under these conditions, which are regarded by Lubarsch as representing something of a reversion to its original saprophytic existence, the branching is more frequent, regular, and pronounced. Granular and irregularly swollen forms also occur oftener.

From timothy and cow dung Möller isolated three closely related but distinct bacilli, which resemble tubercle bacilli in morphological, pathogenic, and many cultural properties. Möller's timothy or grass bacilli, as well as the similar organism isolated from butter by Petrie and by Lydia Rabinovitch, form granules, button- and club-shaped swellings, as well as branching threads, upon some or all media, and to a greater or less extent.

Babes and Levaditi were the first (1897) to describe an actinomycelial arrangement and form of tubercle bacilli in tissues. When pure cultures of slight virulence were injected between the dura and the pia mater of rabbits there developed in a few days undulating filaments, often in masses, which in eight or ten days presented radiating peripheral ends and later acquired nodular thickenings and even distinct clubs. Such masses at times greatly resembled the granules of actinomycosis. Ehrlich's and Gram's stain showed a central mass of bacilli, and aniline-saffranine, followed by Lugol's solution, stained the bulbous or clubbed ends red. In many cases bacilli were seen to end in clubs.

Soon afterward Friedrich reported similar results of an independent investigation. He injected suspensions of tubercle bacilli in physiological salt solution into the left ventricle through the carotid artery of rabbits. Death usually resulted in from twenty-four to eighty-six days. On staining sections of tubercles in various organs, such as the iris, the kidney, and the brain, with Victoria blue and differentiating with alkalies, there would be found masses of bacilli, surrounded by radially arranged actinomycelioid clubs and bulbs.

Schulze confirmed the results of Babes and Levaditi and of Friedrich in the more important details. He found that tubercle bacilli from various sources and of varying virulence would arrange themselves in radiating foci and assume the form of metachromatic clubs and other irregular shapes, both when injected into the arteries and when implanted directly into the brain, kidney, liver, testicle, and mammary gland. The animal used was the rabbit, and the actinomycelioid masses, which in no case appeared before the fourteenth day, formed earliest in the case of the cultures of least virulence. The Gram-Weigert staining method was found to bring out best the early clubs, which the Ziehl-Neelsen's method failed to show at all; in some cases the clubs had a special affinity for acid stains, in others for basic, their staining reactions being uncertain. The larger clubs were refractile and insoluble in alcohol, water, alkalies, and acids.

Schulze also found that the fungus of avian tuberculosis and *Actinomyces Eppingeri* would arrange themselves in masses with club-shaped prolongations when injected under similar conditions as those mentioned. In the case of *Actinomyces Eppingeri* Birch-Hirschfeld's stain colored the threads blue and the clubs red.

Schulze demonstrates, by obtaining from the resulting foci pure cultures only of the organisms injected, that in all likelihood no weight can be attached to Boström's criticism to the effect that the appearances described by Babes and Levaditi, Friedrich and Lubarsch were due to molds introduced at the same time as the tubercle bacilli. Schulze regards the formation of clubs as pathological and due principally to the hindrance of the growth of the organism on account of the hostile influence of the surrounding cells. This is indicated by the observation that ray forms are most numerous and most regular in localized tuberculous proliferations, as occur especially in the brain and the kidney; there is always a close relation between the fungi and the cells, the organism lying either in mighty giant cells or closely surrounded by giant cells or leucocytes. The formation of ray foci occurs also in the case of pathogenic molds, such as aspergillus and mucor forms, under similar circumstances, as shown by Ribbert and Lichtheim, and I have observed it in the case of *Aspergillus fumigatus.*

Lubarsch, in whose laboratory Schulze carried on his studies, investigated a number of other related organisms in regard to their forming ray foci under certain circumstances. He corroborates Schulze's observations as to the bacillus of avian tuberculosis and the actinomyces of Eppinger.

Tubercle bacilli (human) modified in the direction of a more vigorous saprophytic existence by passage through frogs, as demonstrated by Bataillon and Terre, or by a sojourn in the body of lizards, as pointed out by Möller, produced in rabbits caseous and round-cell foci containing but few radiating masses of bacilli, the majority of which seemed to be undergoing disintegration. The bacillus of fish tuberculosis, isolated by Bataillon, Dubard, and Terre, and believed by these authors as well as by Möller and Lubarsch to be a modified form of tubercle bacillus, did not multiply in the rabbit's brain or kidney, and did not produce ray foci.

The acid- and alcohol-proof bacilli isolated by Möller from grass and dung (Möller's timothy bacillus I and II, Möller's cow-dung bacillus) and by Lydia Rabinovitch from Berlin butter (Rabinovitch's butter bacillus) were all found to produce clubbed ray foci when implanted in the tissues. In some instances bacilli could be seen in the interior of the clubs. These organisms form irregular thickenings and also true branches in artificial cultures. Lubarsch obtained the most satisfactory results with Möller's timothy bacillus No. I; local as well as intra-arterial inoculation was followed by the formation of small, short, pointed clubs, which soon increased in size at the expense of the central part, so that the whole mass became metachromatic and acidophilous, and granules visible to the unaided eye were formed; the nodules which developed around the ray foci resembled so much the typical tubercle that in rabbits the lesions caused by the timothy bacillus are not distinguishable microscopically from those caused by the tubercle bacillus.

Lubarsch could not obtain actinomycelioid masses with the bacillus of glanders, which Semmer, Marx, and others have shown produces true branches, neither with the bacillus of diphtheria nor with two varieties of ray fungus isolated by Petruschky, but not fully described. The diphtheria bacilli and Petruschky's fungi did not multiply in the tissues, while the glanders bacillus, however, spread more diffusely through the resulting nodule.

The club formation on the part of tubercle bacilli and allied organisms, when deposited in the tissues under certain circumstances, is regarded by Lubarsch, as in the case of some of the fungi of actinomycosis, to depend upon a hyaline swelling of the membrane of the organisms, because in not a few instances rods or threads could be followed into the clubs as axial filaments.

Lubarsch holds with Schulze that the clubs represent malformations, the result of hindrance to growth (*Hemmungsmissbildung*), rather than purely degenerative changes, because the clubs develop only when the organisms injected multiply *in loco* and not when direct disintegration takes place. Lubarsch believes that the club-shaped thickenings of actinomycelial clusters also have the same general significance.

In connection with this it may be mentioned that in the contents of phthisical cavities Coppen-Jones found formations absolutely identical in shape and form with the clubs and bulbs of actinomycelial granules. He concludes, however, that the objects were not the result of changes in organisms, but due to colloid or other deposits upon elastic fibres and other organic remnants.

The Branching of Diphtheria, Glanders, and Other Bacilli.—Branching diphtheria bacilli have been described by a number of authors (Klein, Bernheim and Folger, Meyerhof, Hill, *et al.*). Apparently such forms are not uncommon. The form most frequently assumed by the branched bacilli observed by Hill was that of a tri-radiate star. The branching forms frequently presented a granule, in every way similar to the ordinary granules of diphtheria bacilli, situated at the point where the branches originate.

Semmer, E. Levy, and Hugo Marx describe branching forms of the glanders bacilli. Marx, especially, found longer and shorter branching threads, especially in older cultures.

Babes, E. Levy, and others describe branching bacilli in connection with leprosy. Stolz, Löffler, and Koch also record the observation of branching bacilli under various circumstances.*

As already noted, Lubarsch failed to obtain clubbed granules in the tissues with the bacilli of diphtheria and glanders.

There has not been entire unanimity as to the interpretation and significance of the branching forms of the various bacilli mentioned.

A. Fischer regards them as involutional, of a pathological and degenerative nature, consequently without any phylogenetic significance. Most investigators, however, hold that these organisms are not true bacteria, but growth forms of higher fungi.

In the light of the studies of Fischel and Coppen-Jones, Hueppe regards the tubercle bacillus as a parasitic growth form of a pleomorphic mold.

For morphological reasons principally the branching bacilli are generally regarded as closely related to, if not identical with, the ray fungi (Fischel, Johan-Olsen, Coppen-Jones, Kruse, Lachner, Schulze, Lubarsch, Hill, etc.).†

Lubarsch proposes to include under the group name of streptothrix all the ray fungi and also those organisms, usually classed as bacteria, which occasionally produce true branches in the cultures and ray forms in the animal organism. He would place this group midway between the hyphomycetes and the schizomycetes, because its members represent transition stages between the higher and the lower fungi. Thus the streptothrices with branching mycelium and distinct spores are so closely related to the hyphomycetes that by many they are made a distinct family of the thread fungi. The tuberculomyces and allied organisms, on the other hand, are probably parasitic adaptation forms of similar fungi, which have largely or wholly lost the power of branching and spore formation, and on this account resemble the fission fungi. Lubarsch would further create a distinct family in the streptothrix group of those organisms which appear in ray form in the tissues. To this family he would apply the distinctive name of ray fungi.

I do not believe that this proposition is well considered. In the first place there are objections to the use of the word streptothrix in this connection. In the second place, the carrying out of this proposal would throw together in a closed circle the most typical of this group, such as *Actinomyces albus*, with the most atypical or imperfect, such as the tuberculomyces, to use the word suggested by Johan Olsen and Coppen-Jones, simply upon the strength of a pathological manifestation—namely, that of club formation—which in the case of the tubercle fungus is apparently of extreme rarity because of the special conditions required for its development.

The demonstration that tuberculomyces may form ray foci is undoubtedly important, because it brings further proof of the relationship of this organism to the ray fungi, but for the present these observations are hardly sufficient to form the basis of the ultimate classification of organisms of whose natural history but very little is as yet known.

As a matter of fact, the tuberculomyces and other allied organisms resemble much more the acid-proof and atypical ray fungi, which do not form actinomycelial clusters in the lesions of spontaneous actinomycosis, than they resemble the typical pathogenic ray fungi. Consequently, it would appear more natural to place the tuberculomycetes in the subgroup of the atypical, acid-proof ray fungi. As regards the remaining bacilli which occasionally produce branches (*Bacillus diphtheriæ*, glanders, etc.), the observations at hand simply indicate that they resemble in many respects the polymorphous atypical ray fungi, not having been shown, however, to form clubbed granules in the tissues.

The foregoing considerations demonstrate clearly, as emphasized by Hueppe, that the usual designations bacilli, bacteria, and bacteriological are not adequate to represent "correctly and scientifically the exact situation." Of the various terms already proposed as substitutes for the old name, the bacillus of tuberculosis, such as *Sclerothrix Kochii* (Metchnikoff), *Mycobacterium tuberculosis* (Marpmann), the at present most available and probably most significant would be *Tuberculomyces*, the tubercle fungus, the fungus of tuberculosis.

Should the observations ultimately make it clear that the diphtheria bacillus also belongs to the ray fungi, then the substitution of fungus for bacillus would indicate its botanical position more clearly.

As pointed out by Hill, the interest which attaches to the demonstration that certain bacilli—*i. e.*, organisms consisting, by definition, of unbranched cells or chains of cells—occasionally show individuals which branch very distinctly, is purely morphological and botanical. Elementary definitions may be affected, but accepted beliefs concerning the ætiological relations of these organisms to pathological conditions remain unchanged.

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* In the *Centralblatt für Bacteriologie*, vol. xxii, 1897, Kitt described a streptothrix form of the rothlauf bacillus. In a correction in vol. xxiii of the *Centralblatt*, 1898, he states that he has subsequently found that there existed a very close symbiosis between the rothlauf bacillus and a distinct streptothrix. In his original communication he called attention to the fact that on gelatin only the rothlauf bacillus appeared, whereas on transplantation from gelatin to slanting agar and bouillon the streptothrix form appeared, but no colonies of bacilli. Subsequently he found, however, that the bacilli grew under the colonies of the streptothrix, and that when transplanted into gelatin the bacilli surpassed the streptothrix in growth. This symbiosis continued throughout six months.

† From his study of the structure and development of the colonies of the bacillus of tuberculosis, Ledoux-Lebard concludes that there is just as much reason for placing this organism in the genus cladothrix as in the ray-fungus group, if not more. The typical cladothrix is a sheathed filamentous organism with false ramification, and each ramified cladothrix is a colony like any zooglœa, whereas a ray fungus with its true branchings is one and the same individual. In their growth Ledoux-Lebard found that Koch's bacillus as well as the avian group themselves after the type of cladothrix—*i. e.*, as ramifying segmented filaments.

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PHYSICAL TRAINING IN SCHOOL AND HOME.

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(Concluded from page 775.)

At Adelphi our physical examination consists in examination of heart and lungs, test of vision and hearing, and conditions of asymmetry noted, such as carriage of the head, degree of round-shoulderedness, relative height of shoulders and hips, symmetry of the back, whether or not spinal deviation exists, the degree and direction, position of scapulæ, general characteristics of chest shape and mobility, adipose tissue, lung capacity, height, weight, condition of skin, blood-vessels, and muscular development. With this examination as a basis pupils are placed in gymnasium squads or classes, according to their strength, ability, or physical need, and when necessary are given special exercises for their individual defects. Some of the pupils we find are best treated individually and privately—such as cases of corpulency; these cases will not work in class with that degree of vigor necessary to produce the desired result. Cases of functional heart trouble are materially benefited by judicious exercise, and really are not cases to enter the regular gymnasium class, where perhaps they may be stimulated to undue effort. Cases of spinal deviation are above all to be cautioned against entering the general class, because the bad posture which is causing the spinal curvature is to them the natural posture, and, of course, the posture they will assume in all exercises.

How are the exercises conducted in the physical development department of our larger private schools?

The movements on the various pieces of apparatus are arranged progressively by the physical director in typewritten or printed form, in series of from eight to twelve exercises to a series. As there are anywhere from five to ten squads exercising on the floor at the same time, it is necessary for the director to have assistants; therefore about twelve pupils are appointed as leaders. These pupils are especially selected because of their ability to perform the exercises well; these leaders are then especially trained to show and properly teach the exercises to the class to which they are assigned. Each gymnasium day the classes perform a series on at least three pieces of apparatus. The day's work is so planned that each class exercises all the muscles of the body systematically. The members of the classes are continually changing. If a member shows ability and strength to do better work than other members of his squad, he is immediately advanced a squad; and, again, if a member of a squad is unable to perform the work of his squad properly, he is promptly dropped back a squad; and so you can readily perceive that each member is receiving the proper amount of exercise. No member is forced to do work that is taxing his strength, and no member is doing exercise that is too easy, and therefore not sufficient for his needs.

After the class exercises are over, taking in all three quarters to an hour's time, the pupils are allowed about half an hour for games, such as basket ball, handball, etc. The importance of such exercise can not be overestimated, and should be made compulsory in every school and college. The making of physical training compulsory in schools and colleges is a question that has been before the public for a number of years, and there are many arguments against it, too numerous to enter into here.

We are all agreed that exercise is not only beneficial, but absolutely necessary for the proper maintenance of health. But we are not all decided as to the kind of exercise and the best place to take it. You can take this for what it is worth, but I am certain that exercise in a gymnasium is beneficial, also that it is more systematic and scientific than any other form. I have tried to show the kind of boy and girl that needs systematic exercise, and also endeavored to point out that the weak boys and girls are debarred from out-of-door exercise. If exercise in the gymnasium is left to the option of the pupil, what kind of boy or girl will exercise in the gymnasium—the weak, who need exercise? No, you will find only the strong! The main reason the weaker boys and girls do not go to the gymnasium is that they are afraid that they can not do as well as some one else, and that perhaps they will be laughed at. To compel a child to do any certain thing is in most cases very wrong; it should always be taught the relation between cause and effect; but where the act in question may cause serious injury, in such case compulsion is necessary. A child that is physically weak should be compelled to exercise, and, as I have endeavored to make clear, when that child is rendered strong he will exercise for the pleasure he derives from it.

Exercise taken in the class room or in street clothing must be made extremely simple; for if carried to the point of moistening the undergarments with perspiration much harm may result, especially if the child is subjected to draughts or is permitted to go out of doors before the garments have become dry. Another objection to exercise in class room is that the exercise seems to take the form of drill, and drill soon becomes wearisome and monotonous, and in girls who wear tight clothing positive injury may result. The main benefit to be derived from exercise in street attire is that derived from change of position.

Some of our schools are equipped with adjustable chairs and desks, and these are arranged to fit the pupil exactly. This I think should be the case in every school. Any one who has witnessed a class at writing can not help feeling sorry for the pupils, most of whom are seated in chairs too low and at desks too high, so that their bodies are twisted out of all resemblance to the human form, and the wonder is that they grow up at all straight. One of the pernicious habits in class room, more frequent in girls, and indeed quite common, and one that distorts the body markedly, is that of sitting on one foot.

The parent and the teacher make a mistake in the way they endeavor to correct bad posture. We often hear the remark, "It goes in one ear and out at the other." We know that a command often repeated fails at last to make an impression. Overstimulation causes paralysis.

A child at home hears the commands "Sit erect," "Hold the head up," and similar remarks so often that they positively fail to meet with any response from the child, who certainly desires to have a fine appearance, and undoubtedly wishes to obey the parent. Still, as we say, the command "goes in one ear and out at the other." The child will assume an erect position for about five seconds, and will then drop back unconsciously into the old position. How much better would it be if the parent, instead of saying "Sit erect," would say, Mary or John (as the case may be) do this or that exercise one hundred or two hundred times—giving an exercise the tendency of which is to strengthen the muscles that hold the body erect. Two things will be accomplished—an impression will be made which will have the effect of causing the child to assume an erect posture every time it comes into the presence of the parent, and finally it will assume a correct posture habitually; and, secondly, the muscles will be made strong, so that the child will be enabled to maintain the position without muscular exhaustion. And now a word in regard to the spirit in which this exercise is to be administered. Do not make the child feel that this is a punishment. My experience with children is that punishment arouses a spirit of antagonism, which is neither good to arouse nor easy to combat. My plan would be to give the child to understand that the bad position is due to lack of tone in the muscles, and what is necessary is to so develop the muscles that they will easily hold the body erect, and until that condition is attained it will be necessary to take these exercises.

"The proper time to begin a child's education," says Mirabeau, "is twenty years before he is born, by educating his mother." And Oliver Wendell Holmes says: "If you want to reform a man, begin with his grandfather."

One of the greatest obstacles that a physical director has to meet in his desire to develop the physical side of a child's nature is the parent. As I have mentioned before, the children who do not take physical training are the weak, anæmic ones. How do they get out of the exercise? you ask. Well, they go home to the parent and say they do not care to exercise in the gymnasium; that they can not do the work, and that they do not like it. Next day a note comes. You will kindly excuse John—his studies take so much of his time; or, I prefer to have him exercise out of doors.

I have followed up some of these cases where the preference is for out-of-door exercise, and invariably find that they are seldom out of doors; they prefer to read, draw, or sit about the house, and when they are out, it is not to play or exercise, but simply to stand about and talk, or, as in a few cases, to take a bicycle ride, and that perhaps to excess.

If these parents could see the benefits derived from exercise in the gymnasium there would be no excuses; they are ignorant of the kind of work done in a gymnasium, and, to use the words of Jeremy Taylor, "It is impossible to make people understand their ignorance, for it requires intelligence to perceive it, and therefore he that can perceive it hath it not."

Why a parent who knows absolutely nothing of anatomy, physiology, hygiene, or the physiology of exercise will dogmatically say "I do not believe that exercise in the gymnasium is what my girl needs, and I do not care to have her enter the class," can be answered when you can tell me why so many thousands of seemingly intelligent people will pay out annually millions of dollars to support quacks when they can so readily receive the advice of a regularly graduated physician.

I think it is the duty that every parent owes his child to have that child thoroughly examined at least twice a year by a physician, and then any tendency toward asymmetry or deformity can be detected at the outset and corrected. Take, for instance, the very common case of spinal deviation, which is easily and surely corrected at the outset, but which is extremely difficult to benefit when the trouble has progressed to the stage of deformity. Many doctors, I am sorry to say, will, instead of treating a case of spinal deviation, tell the patient that she will outgrow the asymmetry; and I have had to treat many such cases after they have grown worse. I should prefer to advise treatment for ninety-nine cases that perhaps would not grow worse than allow one to go until too late. Again, how important to discover a case of pulmonary tuberculosis in its incipiency when it can be easily cured!

Exercise can be performed at home with much benefit. It must, however, be made systematic and progressive. What is beneficial for one is not good for another. And exercise that will be the proper amount to-day will not suffice for to-morrow. The exercise must be gradually increased—daily at first, weekly later, and monthly still later. As the muscles and system become stronger, exercise should be increased accordingly. In prescribing exercise, give such exercise that every muscle in the body will receive a due proportion of work, giving particular attention to the weak points or organs. A weak heart can be better treated in this way than perhaps in any other.

Of course, in prescribing exercise, it is the weaker with whom we have to deal, and to tell such a patient to exercise out of doors most of the time will do the same amount of good as to tell a patient with gastric trouble that he must diet. He must be given the same explicit direction in the one case as in the other, and in order to do this scientifically, we must know the therapeutic value of each exercise.

For the boy or girl, man or woman, who is physically weak a half hour's well-directed exercise is of inestimable value. It is a trite remark that "we never value our health until we have lost it." Health and happiness are inseparable. It is utterly impossible to enjoy one without the other.

Dry Powder Dressings for Burns and Ulcers.—These are becoming increasingly popular, as they are neater than fatty or watery applications, absorb secretions, and are easily removed.

ON THE DIETETICS OF THE CONVALESCENT STAGE OF FEVERS.

By ADOLPH RUPP, M.D.

THE deeds and the work a man may accomplish in the course of a lifetime or during any particular epoch depend upon his physical and moral character, as well as upon his surroundings, or the physical and social media in which he moves and has his being. The results—a man's deeds—are evident, and are good, bad, or indifferent; but to know exactly in detail how they became such is often, if not always, a matter that can not be comprehended offhand, nor can it always be satisfactorily analyzed. The deeds, however, are facts that can not be denied, although all the various processes by which they were made existent are unknown, and may remain so indefinitely.

And so with fevers. Neither they nor their sequences can be denied. Nevertheless, some teachers, writers as well as lecturing professors, tell us, with a grave and mystifying humor, that we do not know what fever is. Such negative talk is absurd, and can be explained by assuming that those witty teachers have confounded things that exist with explanations which are not satisfactory—things related but distinct.

Fevers have been recognized and diagnosticated for thousands of years, and we recognize the same fevers by the same signs and symptoms which made them evident to Galen, Sydenham, Hoffmann, Broussais, Schoenlin, and Graves. Concerning the *processes*, chemical and physical, bacteriological and biological, which culminate in the visible and otherwise perceptible phenomena of fevers, opinion and conceptions have changed as physical and physiological knowledge has advanced. Medical writers in the past have abundantly done what is more than sufficiently done by teachers in our times—that is, not only confounded the phenomena which compose the concept of fever with their explanations, but often described them as though they were one and the same thing or things.

Laymen as well as medical men readily recognize the fever state, and fifty years ago Virchow taught that any disease may become feverish, and that fever may, within certain limits, be called a generalized expression of disease. Although increased bodily temperature is the cardinal symptom of fever, a fever is something more than a mere pyrexia or hyperpyrexia, continued, remittent, or intermittent. As a result, all fevers are characterized by an irregular and wasteful consumption of stored-up nutriment and its proportion of energy, besides a variable series of phenomena which simulate inanition and starvation. The object in the management of the post-febrile state is to restore to the patient what fever processes have wasted, and in treating our convalescing patient we should be guided by a circumspect interpretation of symptoms. This work is chiefly clinical in character, and largely empirical. General principles and empirical maxims and warnings, the cumulated result of the observations of many practical men of many generations, help us to treat these patients rationally.

When the fever has disappeared the mind and body of the patient are in a more or less weakened condition, and according to the nature and possible complications of the specific fever and the toxines which give the fever special characters will the post-febrile or convalescent period be simple and short or complicated and protracted. The blood will be more or less vitiated in all cases, and the heart and its annexa variously weakened or organically diseased. Different sections or organs of the nervous system may have become damaged or a general neurasthenic condition induced. The alimentary canal will have become weakened or incompetent in one way or other; and, besides, the eyes, the ears, the nose, throat, lungs, and kidneys may have become organically disarranged or diseased. Thus, the treatment of the post-febrile stage of fever diseases is not always a simple affair, and never a mere matter of easy routine.

Individual organs that have become diseased may demand the attention of a specialist; and for the weakened system generally all those ways and means free to the general practitioner to make choice of may be utilized, according to the needs of particular patients, which will bring into play "that equilibrium of action in the body upon which health depends." This is done by means of drugs, foods, and physical remedies.

About a quarter of a century ago, Bence Jones wrote, and Liebig had been teaching the same things twenty-five years before, that "it is not possible to draw any distinction between food and medicines; for oxygen and iron, and water and common salt are as necessary foods as starch and gluten, or fat and albumin; and increased supply of any substance that can enter into the structure of any tissue as surely promotes nutrition as increased supply of (good) air increases oxidation." *

Medicines which directly act as nutrients, and often called for during convalescence, are iron, arsenic, strychnine, phosphates, limes, fats, and oils; and those that act indirectly as such are digitalis, nitroglycerin, opium, chloral, etc. In the application of drugs for physiological purposes during convalescence not only some knowledge of their action and application is necessary, but also tact or worldly wit. Many of you may remember how Weir Mitchell succeeded in administering arsenic to a patient who was prejudiced against this drug. He simply ordered the nurse to let the patient suck an orange several times a day into which arsenic had been injected by means of a hypodermic syringe.

In so far as the choice and administration of foods, strictly speaking, are concerned, no routine rules can be followed. The tastes of individual patients, besides their pocketbook abilities, must be consulted, as well as their physiological needs and alimentary capacities and powers. Luxuries are often as necessary a means to the attainment of good health as are meats, milk, eggs, and vegetables.

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* *Lectures on Pathology and Therapeutics*, p. 295.

When conspiring with the cook to help the convalescent into good health and a normal life, it will be well to remember that many substances that are most easily digested in the stomach are not those which are most thoroughly if not most comfortably absorbed in the intestines. The carbohydrates and fats, especially fats, are more completely absorbed than proteids are, and vegetable proteids less readily than animal proteids. Carbohydrates, though less absolutely necessary to the convalescent than proteids, are, however, more than mere luxuries in that they supply animal heat, and, as raw materials, "they are of the first rank for the production of muscular energy." And animal heat and muscular energy demand the fostering care of the physician for his patient.

Over twenty-five years ago, Hughes Bennett called attention to what he believed to be a fact which deserved not to be forgotten in treating conditions of ill health—namely, that "man is more frugivorous and herbivorous than omnivorous." He calculated that from three to five ounces of flesh-formers or nitrogenous compounds suffice in the twenty-four hours for man's nutrition, whereas from ten to twenty ounces of heat and force producers or carbonaceous compounds are required. But, on the other hand, "proteids fulfill by themselves all the demands of a complete food," and it has been said and demonstrated that life—but what a life!—can be maintained on lean meat and water for a long and practically indefinite time.

Density of food is one of the chief conditions that determine its digestibility. Therefore, weak stomachs and lazy intestines should not be burdened with foods that are impervious to the juices of the digestive canal. And yet the stomach and the intestines should be trained into better ways of working, though favored. To quote Hutchinson: "The intestines demand a certain amount of insoluble residue"—and they get it—"to act as ballast and serve as a stimulus to its peristalsis." All this does not militate against allowing convalescents puddings and gelatins and creams. The absorption and digestibility of these luxuries can be favored by sipping water, plain or carbonated, as they are eaten.

Sometimes, from nervous causes or from the lack of having something to do, the stomach will give rise to insomnia, or to distress and uneasiness, and even nausea. Such cases must be studied individually and treated accordingly. A cup of milk, diluted or undiluted, with or without limewater, or a crust of bread, and even cold water sipped, may give relief.

Convalescents are frequently hypersensitive to variations of the temperatures of their rooms. Therefore they should be clothed warmly, and their clothing warmed when changes are made. So, too, their beds should be warmed before they take to them. Attention to small matters of this kind spares discomfort, and fosters instead of wastes the energies which it is the doctor's object to promote and conserve.

Baths should be carefully tempered, and administered in accordance with the taste as well as the needs of any particular patient, and not for purposes of cleanliness alone, or to satisfy theoretical considerations.

Massage and electricity are at times of invaluable service, but not always so. Gymnastics and active exercise during the later stages of convalescence especially may be recommended. And, finally, at the proper time, for the fortunate patient with a good bank account, the distractions and pleasures of travel may be suggested to the patient.

While prescribing and suggesting ways and means calculated to help the body into a sound condition, the establishment of a normal emotional and intellectual condition should not be overlooked. There are many ways of attaining this end, and different ways and means must be made choice of for individual patients. In this connection it will always be well to bear in mind Cowper's lines:

> "Absence of occupation is not rest:
> A mind quite vacant is a mind distressed."

Last, but not least important, is the advice a physician may give concerning the uses of alcohol and the cravings of sexual indulgence. Alcohol is never a necessity, and, though often a harmless luxury, it may with some patients degenerate into a welcome and looked-for narcotic. We should know well the physical and moral conditions of our patients in reference to this luxury, drug, and food, and in all cases carefully advise concerning its uses, abuses, inutilities, and dangers, without being particularly questioned. Alcohol may in certain cases stimulate a flagging appetite and aid torpid digestion, besides adding to the needy store of heat and animation; but it is always an aid that must be handled with care.

The post-febrile state is one in which all patients are not indifferent to sexual emotions and the desire of indulgence. But such cravings should be circumspectly discouraged. Our patients are sometimes foolish enough to deceive themselves in these matters, and allow expansive emotions to get the better of conservative good sense. The physician in charge should therefore be on the alert to guard against indiscretions of this kind; for, when committed, they result in physical and mental depression, which may develop a melancholy that is anything but desirable.

406 West Thirty-fourth Street.

TREATMENT OF ANAL CHANCROIDS.

By MARTIN A. H. THELBERG, M. D.,
LATE HOUSE SURGEON, CITY HOSPITAL, NEW YORK.

Any one who has had to deal with large numbers of venereal lesions must necessarily appreciate how excruciatingly painful anal chancroids are. Painlessness and rapidity of treatment and cure are, therefore, naturally of the utmost importance, more so in this affection than in most others. This is especially so as the great majority of patients thus afflicted belong to the gentler sex, in whom self-infection has usually effected this damage before they can make up their minds to seek professional advice.

As the genito-urinary wards of the City Hospital perhaps offer better opportunities for observation and experimentation in this line than any other place in the country, it may be of interest to relate the history of a case, with the treatment that, at least in the writer's hands, has proved the most successful as well as least painful.

B. J., aged nineteen years, was admitted to the City Hospital on August 28, 1899, suffering from anal chancroids, which seriously interfered not only with the patient's defæcation, but also with walking and sitting. After douches, suppositories, and various other routine measures had failed to relieve, and as all treatment was most painful, the patient was, after the usual ante-operative catharsis, abstinence, etc., put under chloroform anæsthesia. Digital dilatation of the sphincter ani revealed a typical chancroid, extending fully an inch up the posterior surface of the rectum. Several smaller ulcers, clearly more recent self-infections, were also scattered about in the rugæ of the anal orifice. The different ulcers were now most thoroughly cauterized with the Paquelin cautery, which process in this kind of work is rather tedious, as the chancroidal ulcer in places undermines the rectal mucosa quite extensively. I may also add that on this account the cauterization had to be repeated in a couple of instances, as recurrence followed the first, less painstaking operation. Orthoform was now rubbed into the wound with the finger. A good-sized rubber drainage-tube, wound about with iodoform gauze, which in turn was dusted with orthoform, was inserted and secured in place with a sterile safety pin, after which the usual gauze dressing and T bandage were applied.

The after-treatment consisted in keeping the bowels under control until the third day following the operation, when an enema of four ounces of castor oil and olive oil in equal parts, was given after a liberal dose of magnesium sulphate had been taken. When the catharsis had subsided a cleansing enema was given and a suppository with ten per cent. orthoform introduced.

It may be added that the patient complained of very little pain at any time following the operation, and that the wound healed quickly and without further treatment.

In some of the eleven operations of this nature performed by the writer the free edges of the mucous membrane were, after cauterization, approximated by a couple of fine chromicized catgut sutures. As the exciting cause in each instance was removed, and as in every case some healthy mucous membrane remained between the diseased patches, neither esthiomène nor stricture ought to result.

When the lesion has become as extensive as in the cases operated upon by the writer, it seems to be entirely useless to attempt curing it by douches, suppositories, or various dressings, which all, moreover, no matter how gently applied, are almost too painful for endurance. Heroic cauterization, together with the invaluable aid of orthoform as a lasting local anæsthetic and antiseptic, produces such a pronounced and painless curative effect as, at least in the writer's experience, nothing else will afford.

205 West One Hundred and Fifth Street.

Therapeutical Notes.

A Mixture for the Cardiac Palpitations of Asthenics.—According to the *Gazette hebdomadaire* for April 29th, M. Zerner recommends:

℞ Pyrophosphate of iron, Bromide of zinc,	of each..	52½ grains;
Tincture of digitalis	225	"
Ergotin	180	"
Syrup of orange flowers.......	450	"
Distilled water	1500	"

M. From one to three coffeespoonfuls to be taken daily.

Pilules for Exophthalmic Goître.—The *Gazette hebdomadaire de médecine et de chirurgie* for April 29th ascribes the following to Watkins:

℞ Picrotoxine	$\frac{3}{100}$ of a grain;
Aqueous extract of ergot of rye	1½ grain.

M. To make one pilule. Three such pills may be taken in a day.

This formula is ascribed to Winternitz:

℞ Ergotin, Sulphate of quinine,	of each...	75 grains.

M. Make into fifty pilules. Three or four pilules to be taken daily.

Menthol Crayons.—The *Journal des praticiens* for March 31st gives the following formula:

℞ Chloral hydrate, Menthol,	each	1 part;
Spermaceti		2 parts;
Cacao butter		4 "

M.

For Intestinal Antisepsis in Typhoid Fever. — The *Gazzetta internazionale di medicina pratica* for April 15th recommends the following:

℞ Thymic acid, Duotal (carbonate of guaiacol), Medicinal soap,	of each..	90 grains.

Mix and divide into thirty pills or wafers, of which one is to be taken every four hours.

THE
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THE ACTING ASSISTANT SURGEON.

Elsewhere in this issue we print the text of a bill for the relief of acting assistant surgeons in the army, including those who are now serving, those who may hereafter take contracts, and those who were in the service during the war with Spain or the rebellion in the Philippine Islands. It was drawn, we understand, by the legislative committee of the Association of Acting Assistant Surgeons. This association is young and vigorous, and we believe it likely to succeed in its effort to secure the passage of the bill. Certainly it deserves to succeed, if for no other reasons than those set forth in its preambles.

A *Brief* of the bill has also been prepared by the committee, a running commentary on its individual sections, explaining the authorship of each section and giving the reasons for its provisions. This *Brief* is a most cogent plea for the enactment of the bill. In the main its provisions were either originally drafted or outlined by the surgeon-general of the army, but have been amplified by the association's committee in important particulars. All the committee's amplifications, we understand, have met with the surgeon-general's approval. Sections 3, 4, 6, 9, 10, and 11 have been drafted by the committee with the aid of experienced medical and pay officers of the army and officials of the treasury department.

There is every reason why the bill should become a law, and we can not imagine any reasonable objection that can be urged against it. It is said to have the warm approval of General Miles and of many other army officers of long service, both line and staff. As a body, the acting assistant surgeons of the army have done service of which the medical profession may well be proud. No candid examiner can peruse the great volumes of the *Medical and Surgical History of the War of the Rebellion* and fail to see that they present the records of conscientious and skillful work done by the contract surgeons of thirty-five years ago. Those who did equally good service in the Spanish war and those who are still doing it in the Philippines have not yet had their deeds recorded in permanent form, but we can not doubt that when the record is made up it will be as creditable as that of a generation ago.

If this bill becomes a law, we shall have but one occasion for regret—that our young, numerous, and powerful friends who prepared it did not feel that they could extend its provisions to the few men still living who served as acting assistant surgeons in the civil war. It is maddening to us old fellows that we are barred from membership in the Grand Army of the Republic and the Loyal Legion and can not receive medals for conspicuous gallantry in the field, because forsooth we wore no shoulder straps, although under orders as strictly as any men in the service. But this regret will not restrain us from doing all in our power to help along a measure intended to do justice at last to those acting assistant surgeons of the army who saw their service in the war with Spain, those who served or are still serving in the Philippines, and those who may be drawn from civil life to meet emergencies that are almost sure to arise hereafter. We implore our readers to exert their personal influence with congressmen in favor of the bill.

LOGIC AND FADDISM.

A very curious piece of antivivisection logic is commented upon by the *Lancet* for May 5th. It appears that one Mr. Charles Adams, who is editor of the *Verulam Review*, wrote some time back to various experimenters in England who held licenses under the British vivisection act, stating that the Home Secretary had informed him that "having in the course of your work last year applied for and obtained a certificate authorizing experiments on dogs, etc., without anæsthetics, on the express grounds that the experiments in question could only be so performed, you then, notwithstanding the certificate, performed them under anæsthetics, thereby plainly showing the incorrectness of the ground on which your application was based." The writer added: "Please observe that the statement is Sir Matthew White Ridley's, not mine. And as it certainly appears to cast a serious slur either upon your good faith or your professional competency, I think it only right, before making use of it, to ask whether you admit its accuracy."

The *British Medical Journal*, in commenting subsequently upon this extraordinary epistle, asserted: 1. That it was misleading to import the Home Secretary's name into the matter, as the facts were published in an official document. 2. That the writer was "either ignorant of the terms of the license or too careless to ascertain them." It also published a letter from the home office addressed to one of the experimenters in question, in which the Home Secretary repudiated the statement attributed to him—viz., that the experimenter having obtained authority to perform certain experiments without anæsthesia on the ground that only so could they be performed, did actually perform those same experiments under anæsthesia. Whereupon Mr. Adams, after calling ineffectually upon the *Journal* for an apology and a retraction, brought an action for libel, with the doubly gratifying result of securing a jury verdict against him and an expression of opinion from the judge that "a more impertinent letter was never written by one man to another."

On the other hand, the accusation of bad faith or incompetence must rest with Mr. Adams. The license gives authority to perform certain experiments without anæsthetics when such experiments can not profitably be performed under anæsthesia, but it does not demand that all experiments shall therefore be made without anæsthetics. Mr. Adams's accusation amounts to this, when put into syllogistic form: 1. You asserted that certain experiments could not be performed under anæsthetics; but you subsequently performed certain experiments under anæsthetics. Therefore your assertion (that certain experiments can not be performed under anæsthetics) is untrue, and is consequently an evidence either of misrepresentation or of want of knowledge. On Mr. Adams's reasoning it is easy to prove either that he is himself a vivisectionist, or that all people are antivivisectionists, and consequently that there are no such beings as vivisectionists at all, as thus: Certain persons are vivisectionists; Mr. Adams is a certain person; therefore Mr. Adams is a vivisectionist. And again: Certain persons are antivivisectionists; but all people are certain persons; therefore all people are antivivisectionists. So potent for error is the fallacy of the "undistributed middle"—*i. e.*, the disregard of the logical rule that the "middle term" (that one which does not appear in the conclusion) must be "distributed"—or, in other words, must embrace the entire class referred to and not merely a portion of it, at least once in the course of the syllogism.

But even should Mr. Adams, in defiance of the Home Secretary's statement, insist that the very experiments on account of which the license was applied for, and which it was stated could not be performed without anæsthetics, were subsequently performed without anæsthetics, even then he fails to prove his case that the experimenters showed either bad faith or professional incompetence in his application, for he fails to take into account the progress of events in time. The day before the publication of the x rays a surgeon might truthfully have said: To see the bone of a man's leg, I must cut down to it and expose it; I want to see the bone of Mr. Adams's leg to make a diagnosis; therefore I must ask Mr. Adams's permission to cut down to and expose the bone of his leg. Mr. Adams gives his permission, on the ground that the operation is necessary to attain to a diagnosis; but for some reason the operation is delayed. Meanwhile Röntgen gives to the world the knowledge of the x rays and the surgeon subsequently inspects Mr. Adams's bone by their aid without any operation and makes his diagnosis satisfactorily. And Mr. Adams, instead of being thankful for what he has been spared, turns round and casts a slur upon his surgeon's "good faith or professional competency."

This is the kind of logic to which osteopathists, Christian Scientists, and every other kind of faddists treat us. We hear a great deal about the need of the compulsory teaching of physiology in schools, largely, as it would seem, in order that certain faddists who object to the rational use—not only by themselves, in which they are perfectly within their rights, but by others also, in which they are not—of tobacco, alcohol, etc., may infuse their peculiar views into the coming race. It seems to us that a thorough course of logic in the public schools, and that without the necessity of any specially enforced attention to the current fallacies of the day, which could be safely left to their fate if logical training were made compulsory, is at least equally necessary, and would probably prove far more beneficial to the community at large.

THE GALLINGER ANTIVIVISECTION BILL.

One might almost infer that the Baltimore *Sun* had determined to aid in the advocacy *à l'outrance* of the absurd and monstrous contentions of the antivivisectionists, no matter how palpably untenable they might be, for in its issue for April 16th it prints a column-and-a-half Washington dispatch, signed "F. A. R." and headed Scalpel of Death, which shows nothing more than that the correspondent and Senator Gallinger, whom he quotes, are either extraordinarily misinformed or else utterly reckless in their statements. When the antivivisectionists resort to such utterly unfounded accusations as are to be found in this dispatch and to such a sweeping arraignment of modern surgery as the implication, for example, that, on the whole, the victims of disease of the vermiform appendix would be better off without surgical intervention, they must be at their wit's end for means to cajole Congress into passing their bill for the so-called "regulation" of vivisection in the District of Columbia. We do not see how any well-informed man can attach the slightest importance to such a tissue of slanderous misstatements and such a rhetorical product of a morbid imagination. If anybody does take it seriously, we commend to his attention the protest by Dr. W. W. Keen, of Philadelphia, the president of the American Medical Association, printed in a subsequent issue of the *Sun*.

Dr. Keen refutes Senator Gallinger's assertion that the British vivisection law is accepted "without question or remonstrance" by the medical profession of the United Kingdom, and reminds the senator that at a recent hearing on his bill before a committee of which the senator himself was chairman letters were presented from Lord Lister, Sir Michael Foster, Sir T. Lauder Brunton, and the late Sir T. Grainger Stewart, all men of the highest prominence in British medicine, showing how obstructive to progress the law was and how deleterious such a law would be if enacted in this country. As to the senator's monstrous charge that vivisection is largely practised on the human subject—and under this term he includes experimental inoculations and almost all the major operations of surgery—Dr. Keen shows conclusively that it rests on the flimsiest of foundations, for in the ridiculously few instances in which the antivivisectionists, after ransacking the medical literature of the world, have been able to show that reprehensible experimenting had been done, their contention has been thoroughly concurred in by representative medical men. Indeed, so far as they have any case at all, nobody opposes them. It is only when they seek for power to suppress imaginary evil, with the ill-disguised purpose of applying that power to the smothering of legitimate experimental work, that the medical profession feels itself not only entitled but constrained to resist them. It is humiliating to reflect that Senator Gallinger, a member of our profession, although not now a practitioner, should find his favorite occupation that of villifying his professional brethren.

AN INJUDICIOUS CHRISTIAN SCIENCE PROSECUTION.

In the *New York Times* for May 21st we read of a prosecution against a Christian Science healer which, we think, to say the least, ill advised. The widow of a prominent Mason of Topeka, Kansas, died recently from peritonitis consequent upon perforation of the intestines during typhoid fever while under the care of a Christian Science healer. The Masonic order, so we are informed, is planning to prosecute the healer, although, it is stated, the patient "was a Christian Scientist, and with the local healers resisted the demands of her friends that a physician be summoned." While we fully indorse the censure upon Christian Science enunciated by the coroner's jury in their verdict, we do not think this a suitable case for interference, when the patient herself was a known Christian Scientist and, moreover, was herself responsible for not seeing a physician. The case is altogether different from that of children, or those in which the patients are powerless to have a say in the matter as to how they wish to be treated. If an individual prefers to go altogether untreated, we think that he has both a moral and a legal right to do so, and Christian Science is not a form of charlatanry which does actual injury to the patient, though in the case of infectious diseases it may endanger the public, but only effects negative injury by abstaining from any measures really likely to do good. One incident, however, shows the inconsistency of these people. The "scientist" testified that the patient was killed, not by the lack of medicine, but by the shock of surprise at seeing her mother! According to Christian Science, there is no such thing as disease—that is, no such thing as a deviation from one's normal line of health—no failure in the perfect adjustment of the organism to its environment. That being the case, how could the woman's surprise at anything lead to such a serious deviation from the normal line of health as to cause death at all?

APPENDICULAR IMMIGRANTS.

We have all heard of cherry stones, grape seeds, and many similar foreign bodies finding lodgment in the appendix vermiformis, but these are all foreign immigrants into the United States of Anatomy. Dangers may, however, arise, it must not be forgotten, from interstate transmigration, as in two cases reported in the March number of the *Proceedings of the Pathological Society of Philadelphia*. Dr. Charles H. Frazier reports the removal of an appendix entirely filled with *oxyurides vermiculares;* while Dr. Gwilym G. Davis records the presence therein of a segment of a tapeworm. The question of their relation to the appendicular inflammation appears, however, to be an open one. Agents of this description, while not overlikely to act as mechanical irritants, may, nevertheless, prepare a happy hunting ground for the *Bacillus coli.*

CONSTIPATION AS A FATAL DISEASE *PER SE.*

Constipation is commonly regarded as a symptom, not a disease, but Mr. Robert Brummitt records in the *Australasian Medical Gazette* for March the case of a boy who, since his birth in 1884, had been a continuous source of trouble and anxiety and demanded medical care, owing to persistent sluggishness of the bowels. Careful palpation of the abdomen and examination of the rectum showed nothing abnormal save a fringe of external hæmorrhoids. Among the therapeutic measures almost every laxative and intestinal tonic was employed, as were diet and regimen, massage, enemata of all kinds, irrigations, and the faradaic current, but all to no avail. Homœopathic physicians also exhausted their therapeutic armory without effect. The distress of continued constipation, for which nothing more than mechanical and very transient relief could be obtained, the deficient nourishment and consequent wasting, terminated in death from peritonitis at sixteen years of age with a weight of only sixty pounds. At a postmortem examination the cæcum and the ascending and transverse colon were found full of scybalous masses so hard that they could not be indented with the finger. The author says that careful examination failed to reveal constriction in any part of the intestinal tract or abnormity in its attachments, and adds: "In the absence of marked organic lesion I suppose this boy had (1) congenital weakness of the intestinal walls, probably due to defective innervation. This may possibly have conduced to abnormal dryness of fæces. He certainly had during the last few weeks (2) fæcal obstruction and during the last few days (3) peritonitis."

RHYTHMICAL TRACTION OF THE TONGUE IN TYPHOID FEVER.

We have had rhythmical traction of the tongue recommended for the resuscitation of the apparently drowned and for the newly born seemingly dead. At the Paris Academy of Medicine, according to the *Revista de Medicina y Cirugía Practicas* for April 14th, Dr. Laborde recently reported a case of Dr. Schneider's, surgeon to the military hospital at Oran, in which asphyxial phenomena of bulbar origin occurring early in the course of typhoid fever yielded to rhythmical traction of the tongue. A forceps was kept for two hours applied to the tongue, and as soon as the patient noticed the approach of asphyxial symptoms he repeated the tractions in the same fashion as the physician. This suggests to us its trial in certain forms of the epileptic aura as a possible preventive, easy of application with the fingers by the patient himself.

THE NEEDS OF ROOSEVELT HOSPITAL.

The superintendent reports that a larger endowment, larger by half a million dollars, is needed by the hospital to provide properly for the maintenance of its work. He hints that to some extent the fact that the hospital bears the personal name of its founder may deter other persons from adding to its funds, but he very properly calls attention to the action of Mr. Roosevelt in stipulating that the presidents of five other institutions should be *ex-officio* trustees of the hospital, and in designating only one member of the Roosevelt family as a charter trustee.

DISINFECTED COFFEE IN CHICAGO.

It seems that some of the coffee that was brought to New York some months ago on the ship *J. W. Taylor,* on which, it was suspected, there had been a death from the bubonic plague, was sent to Chicago, "secretly," so it is alleged, as if commercial people were in the habit of proclaiming shipments of goods. There is no pretense that the coffee was not properly treated before it was allowed to leave this port, and we believe the people of Chicago may consume it with impunity, if it has not already been used up. The incident seems to have afforded an opportunity for some buncombe, but that is soon forgotten.

THE *AUSTIN FLINT MEDICAL JOURNAL.*

We have received the first number of this new journal, presumably a monthly, dated May, 1900. It contains forty-seven pages of reading matter, is published in Mason City, Iowa, and is edited by Dr. F. G. Murphy and Dr. T. T. Blaise, who are also its publishers. Among its contents is the report of a meeting of the Austin Flint Medical Society. It is eminently fitting that the late Dr. Flint's name should be given to a medical society and to a medical journal. His interest in societies and in periodical literature is thus suitably recognized.

THE TRANSMISSION OF PURPURA TO THE FŒTUS.

Dr. J. C. Diehl (*Zeitschrift für Geburtshilfe und Gynäkologie,* xli, 2; *Centralblatt für Gynäkologie,* April 21st) records an instance of this exceedingly rare occurrence. The mother died with purpura soon after an abortion in the fifth month. The author attributes the rarity of purpura in the fœtus to the fact that it usually dies before the disease has had time to show itself.

THE NEED OF ASSAYING PHARMACEUTICAL PRODUCTS.

This is well illustrated in a case reported by Dr. Calandra (*Gazzetta degli ospedali e delle cliniche,* 1899, No. 151; *Centralblatt für innere Medicin,* April 21st), one in which a dose of less than a third of a grain of dry extract of belladonna produced symptoms of poisoning. The author would reduce the maximum dose to 0.31 of a grain, but in our opinion an assay of the extract would be preferable.

PHOSPHORUS FOR INFANTILE ECLAMPSIA.

According to the *Archivio internazionale di medicina e chirurgia* for March, Longe has deduced from the property possessed by phosphorus of calming certain spasmodic phenomena of rhachitism its probable value in infantile eclampsia, and finds that it possesses a calmative action therein far superior to that of the measures in ordinary use. The method of administration is similar to that in the former disease, and two or three days' treatment, he says, suffices to entirely overcome the eclamptic attacks.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported for the two weeks ending May 19, 1900:

DISEASES.	Week ending May 11.		Week ending May 19.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	21	13	17	4
Scarlet fever	166	12	154	16
Cerebro-spinal meningitis	0	1	0	4
Measles	559	14	618	23
Diphtheria	288	44	251	45
Laryngeal diphtheria (croup)	9	7	13	9
Tuberculosis	241	197	207	171
Chicken-pox	11	0	12	0
Small-pox	0	0	2	1

The Buffalo Academy of Medicine.—At the last meeting of the Section in Obstetrics, on Tuesday, May 22d, the order for the evening included the following papers: Asepsis and Antisepsis in Obstetrics, by Dr. D. W. Harrington, and Obstetrical Reminiscences, by Dr. James S. Smith. In the discussion which followed, Dr. C. C. Wyckoff, Dr. Samuel G. Dorr, Dr. S. S. Green, Dr. W. D. Green, and others took part.

Marine-Hospital Service Health Reports.—The following cases of small-pox, yellow fever, cholera, and plague were reported to the surgeon-general during the week ending May 19, 1900:

Small-pox—United States.

Mobile, Ala.	May 5–12	2 cases.	
Evansville, Ind.	May 5–12	2 "	
Wichita, Kan.	May 5–12	4 "	
Covington, Ky.	May 5–12	2 "	
New Orleans, La.	May 5–12	57 "	14 deaths.
Portland, Me.	May 5–12	1 case,	1 death.
Chicopee, Mass.	May 5–12		1 "
Detroit, Mich.	May 5–12	2 cases.	
Omaha, Neb.	May 5–12	6 "	
Cleveland, Ohio	May 5–12	19 "	1 "
Pittsburgh, Pa.	May 5–12	2 "	
Greenville, S. C.	May 5–12	3 "	
Salt Lake City, Utah	May 5–12	2 "	
Tacoma, Wash.	Apr. 28–May 5	1 case.	
Sweetwater Co., Wyoming	May 4	6 cases.	
Uintah Co., Wyoming	May 4	4 "	

Small-pox—Foreign.

Prague, Austria	Apr. 22–28	16 cases.	
Antwerp, Belgium	Apr. 22–28	1 case,	1 death.
Manitoba, Winnipeg, Canada	Apr. 1–30	80 cases.	
Manitoba, Winnipeg, Canada	Apr. 28–May 12	3 "	1 "
Bonaventure County, Quebec, Canada	May 4–11	5 "	
Hongkong, China	Mar. 22–Apr. 7	6 "	3 deaths.
Liverpool, England	Apr. 22–28	9 "	4 "
London, England	Apr. 22–28	6 "	1 death.
Southampton, England	Apr. 28–May 5	5 "	
Lyons, France	Apr. 14–21		2 deaths.
Gibraltar	Apr. 22–29	1 case,	1 death.
Athens, Greece	Apr. 22–28	8 cases,	2 deaths.
Bombay, India	Apr. 10–17		72 "
Calcutta, India	Mar. 25		39 "
Kurrachee, India	Apr. 8–15	12 "	9 "
Rome, Italy	Mar. 22–Apr. 7		2 "
Venice, Italy	Apr. 14–21		1 death.
Formosa, Tamsui, Japan	Mar. 24–31	134 "	2 deaths.
Chihuahua, Mexico	Apr. 28–May 5		1 death.
Mexico, Mexico	Apr. 1–29	57 "	42 deaths.
Vera Cruz, Mexico	Apr. 28–May 5		8 "
Corunna, Spain	Apr. 22–28		1 death.
Moscow, Russia	Apr. 7–21		5 deaths.
Odessa, Russia	Apr. 22–28	7 "	2 "
St. Petersburg, Russia	Apr. 14–21	31 "	9 "
Warsaw, Russia	Apr. 14–21		2 "
Glasgow, Scotland	Apr. 22–28	19 "	2 "
Valencia, Spain	Apr. 22–28	1 case.	

Yellow Fever—Foreign.

Havana, Cuba	May 7	1 case.	
Vera Cruz, Mexico	Apr. 28–May 5		10 deaths

Cholera.

Oman, Arabia	Mar. 10	Present.	
Bombay, India	Apr. 10–17		26 deaths.
Calcutta, India	Mar. 18–24		101 "

Plague—Foreign.

Alexandria, Egypt	May 9	Reported.	
Bombay, India	Apr. 10–17		533 deaths.
Calcutta, India	Mar. 18–24		878 "
Kurrachee, India	Apr. 8–15	480 cases,	402 "
Formosa, Tamsui, Japan	Mar. 24–31	106 "	74 "
Osaka, Japan	Apr. 13		1 death.
Numea, New Caledonia	Dec. 17–Apr. 4	123 "	77 deaths.

The St. Louis Medical Society of Missouri.—At the last regular meeting, on Saturday evening, the 19th inst., Dr. T. A. Martin presented a case of pseudo-hypertrophic paralysis for discussion, which was opened by Dr. J. K. Bauduy.

The Association of Military Surgeons of the United States.—The ninth annual meeting will be held in New York on May 31st and June 1st and 2d, under the presidency of Dr. C. H. Alden. The programme includes the following titles: Some Suggestions on Recruit Identification and Routine Correspondence, by J. S. Kulp, Captain and Assistant Surgeon, U. S. A.; What should be the Standard of Vision required of Enlisted Men in the United States Army? by Captain Myles Standish, Surgeon, M. V. M.; The Physical Factor in Examinations for the Army and Navy, by Surgeon H. G. Beyer, U. S. N.; A Study of Visual Perception, with Special Reference to Training the Eyesight of Soldiers, by Brigadier-General J. F. Calef, Surgeon-General, C. N. G.; The Hygiene of Camps of Instruction, by Major Julian La Pierre, Surgeon (retired), C. N. G.; The Organization and Administration of Medical Service, by Lieutenant-Colonel B. F. Pope, Deputy Surgeon-General, U. S. A.; Methods resorted to to obtain Water for the Disposal of Excreta, etc., in Establishing Hospital at Corregidor Islands, by Captain W. O. Owen, Assistant Surgeon, U. S. A.; The Value of the Schumburg Method of Purification of Water for Military Purposes, by Captain John H. Huddleston, Assistant Surgeon, N. G. S. N. Y.; Some Experiences and Suggestions, by Major W. G. B. Harland, Surgeon, N. G. Pa.; Some Problems that had to be Solved by our Medical Department across the Seas, by Major J. Van R. Hoff, Surgeon, U. S. A.; The Hygiene of the Navy Ration, by Surgeon H. G. Beyer, U. S. N.; The Ideal Ration for an Army in the Tropics, by Captain E. S. Munson, Assistant Surgeon, U. S. A.; Transportation of the Wounded on Shipboard, with Special Reference to the Invention of Commander Mahan, by Medical Inspector C. U. Gravatt, U. S. N.; A Method of Transportation of the Wounded on Ships of War, by Medical Director John C. Wise, U. S. N.; The Care of the Wounded on a Modern Ship of War, by Passed Assistant Surgeon R. K. Smith, U. S. N.; General Hospitals, by Lieutenant-Colonel A. A. Woodhull, Deputy Surgeon-General, U. S. A.; Field Work in the Philippines, by F. M. Kemp, Assistant Surgeon, U. S. A.; Experiences as Chief Medical Officer, Eighth Army Corps, in the Philippines, by Lieutenant-Colonel H. Lippincott, Deputy Surgeon-General, U. S. A.; The Medical Department in the Field, by Major L. M. Maus, Surgeon, U. S. A.; Some Observations made during my Service in the Spanish-American War, by Lieutenant R. E. Bell, M. V. M.; The Spanish-American War as seen by the Military Surgeon, by Allen A. Wesley, late Major and Surgeon, U. S. V.; Some Object Lessons from the Volunteer Service, by Major Howard S. Dearing, Surgeon, M. V. M.; The Remote Effects of Gunshot Wounds from the Small-calibre Bullet, by Major L. La Garde, Surgeon, U. S. A.; Some Experiences of a Volunteer Surgeon in the Philippines, by Major R. J. FitzGerald, late Surgeon, Thirteenth Minn. Vol.; Should Military Medical Science be Taught in our Medical Colleges? by Brigadier-General Edmund C. Brush, Surgeon-General, Ohio N. G.; The Medical Department of the State of Pennsylvania, by Major J. K. Weaver, Brigade Surgeon, N. G. Pa.; Sick Soldiers in Philadelphia after the Late War with Spain, by Brigadier-General John V. Shoemaker, Surgeon-General, N. G. Pa.; Prophylaxis, as Applied to Military Medicine, by Lieutenant-Colonel W. H. Devine, Medical Director, Second Brigade, M. V. M.; Continued Experience in Early Operation for Appendicitis, by Major A. C. Girard, Surgeon, U. S. A.; The Management of Quarantinable Diseases and Sanitary Cordons, by Passed Assistant Surgeon C. P. Wertenbaker, U. S. M. H. S.; The Military Use of the Ski in Yellowstone Park, by

Captain A. E. Bradley, Assistant Surgeon, U. S. A.; To what Extent should the Military Surgeon be Required to Invade the Realm of Ophthalmology? by Major J. M. Banister, Surgeon, U. S. A., and Investigations into the Value of Nuclein in the Treatment of Chronic or Recurrent Malaria, by Major A. C. Girard, Surgeon, U. S. A.

Yellow Fever.—Dr. Antonio Matienzo (*Boletin del Consejo Superior de Salubridad,* Mexico, February 28th thus concludes a paper on this subject: 1. Yellow fever, like small-pox, diphtheria, scarlatina, and, in short, like all transmissible diseases, is preventable. 2. The prophylactic hygiene of yellow fever consists in isolation, in rigorous and thorough disinfection performed with the necessary scientific competence, as well as in general hygienic measures—viz., purification of drinking water, drainage of the subsoil, sewerage, the drying up of lagoons and marshes, and in measures against the overflow of rivers, all now on the eve of realization.

Impregnation during an Attack of Epilepsy.—The *Gazette médicale de Paris,* April 21st, records the case of a poor epileptic girl, an inmate of the Houplines asylum, who was violated by an epileptic man, twenty-six years of age, also an inmate of the same institution, during one of her epileptic attacks. She gave birth to a male child, which she strangled.

Where Women Rule the Roost.—The *Gazette médicale de Paris* for April 28th ascribes to Brisson the statement that there is a maritime village in Japan where emancipated women keep domesticated men, haremwise, in their service until they cease to please. When by chance the ruling powers have children, they keep the girls and make away with the boys.

Change of Address.—Dr. Martin A. H. Thelberg, to No. 205 West One Hundred and Fifth Street, New York city.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 12 to May 19, 1900:*

Bevans, James L., Acting Assistant Surgeon, United States Army, is, upon recommendation of the chief surgeon of the department, assigned to duty temporarily in his office.

Du Bois, Frank, Acting Assistant Surgeon, United States Army, will report at Asingan, Province of Pangasinan, Luzon, for duty, relieving Cottrell, Samuel P., Acting Assistant Surgeon, who will report to the chief surgeon.

Frick, E. B., Captain and Assistant Surgeon, United States Army, is detailed as a member of the board of officers at Governor's Island, in place of Phillips, John L., Captain and Assistant Surgeon, relieved.

Gorgas, William C., Major and Surgeon, United States Army, will report to the adjutant-general, Division of Cuba, for further instructions.

Munson, Edward L., Captain and Assistant Surgeon, United States Army, is detailed as counsel in the case before the general court-martial.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending May 19, 1900:*

Huntington, E. O., Assistant Surgeon. Detached from the *Newark* and ordered to the *Bennington.*

Thompson, J. C., Assistant Surgeon. Detached from the *Bennington* and ordered to the Naval Hospital, Mare Island, California, for treatment.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the United States Marine-Hospital Service for the Seven Days ending May 17, 1900:*

Austin, H. W., Surgeon. Detailed as member of the board of examiners convened to meet at New York, May 23, 1900, for the examination of candidates for appointment as assistant surgeon, United States Marine-Hospital Service.

Stoner, G. W., Surgeon. Relieved from duty as member of the board of examiners convened to meet at New York, May 23, 1900, for the examination of candidates for appointment as assistant surgeon, United States Marine-Hospital Service.

Mead, F. W., Surgeon. Granted leave of absence for one day.

Burford, R. E. L., Acting Assistant Surgeon. Granted leave of absence for seven days.

Gibson, L. P., Acting Assistant Surgeon. Granted leave of absence for five days.

Gregory, G. A., Acting Assistant Surgeon. Granted leave of absence for four days from May 11, 1900.

Moncure, J. A., Acting Assistant Surgeon. To proceed to the Brunswick Quarantine Station, Georgia, for temporary duty.

O'Reilly, W. J., Acting Assistant Surgeon. Granted leave of absence for three days from May 22, 1900.

Stanton, J. G., Acting Assistant Surgeon. Granted leave of absence for twenty-two days from May 16, 1900.

Board Convened.

Board convened to meet at New York, May 23, 1900, for the examination of candidates for appointment as assistant surgeon, United States Marine-Hospital Service. Detail for the board: Purviance, George, Surgeon, chairman; Stoner, G. W., Surgeon; Vaughan, G. T., recorder.

Appointments.

Fisher, Albert W., appointed acting assistant surgeon, United States Marine-Hospital Service, for duty at Toledo, Ohio, from May 1, 1900.

Schurrer, L. T., appointed acting assistant surgeon, United States Marine-Hospital Service, for duty at Lexington, Michigan, from May 14, 1900.

Resignation.

Fisher, W. H., Acting Assistant Surgeon, resigned, to take effect April 30, 1900.

Society Meetings for the Coming Week:

Monday, *May 28th:* Medical Society of the County of New York; Lawrence, Massachusetts, Medical Club (private); Cambridge, Massachusetts, Society for Medical Improvement; Baltimore Medical Association.

Tuesday, *May 29th:* Rome, New York, Medical Society; Boston Society of Medical Sciences (private).

Wednesday, *May 30th:* Auburn, New York, City Medical Association; Berkshire, Massachusetts, District Medical Society (Pittsfield).

Friday, *June 1st:* Practitioners' Society of New York (private); Clinical Society of the New York Post-graduate Medical School and Hospital; Baltimore Clinical Society.

Saturday, *June 2d:* Manhattan Medical and Surgical Society, New York (private); Miller's River, Massachusetts, Medical Society.

Births, Marriages, and Deaths.

Married.

Davis—Street.—In Dorchester, Massachusetts, on Wednesday, May 9th, Mr. George Adams Davis, son of Dr. Wesley Davis, and Miss Alice Rosalind Street.

Guthrie—Williams.—In Laurel, Mississippi, on Wednesday, May 16th, Dr. J. M. Guthrie and Miss Ella B. Williams.

Died.

Bacheler.—In New Hampton, New Hampshire, on Monday, May 14th, Sarah P. Bacheler, wife of Dr. O. R. Bacheler.

Gilbert.—In Boston, on Tuesday, May 15th, Amelia A. Gilbert, wife of Dr. Daniel O. Gilbert.

Lindström.—In Boston, on Thursday, May 17th, Dr. Alfred H. Lindström, in the thirty-second year of his age.

Lyon.—In Charlestown, Massachusetts, on Sunday, May 13th, Dr. Henry Lyon, in the eighty-sixth year of his age.

Watt.—In Providence, Rhode Island, on Friday, May 18th, Marjorie Helen Watt, daughter of Dr. Andrew Watt.

Pith of Current Literature.

Medical Record, May 19, 1900.

When shall we Operate for Appendicitis? By Dr. Joseph Wiener, Jr.—This article, which is accompanied by illustrative cases, may be summarized as follows: At first, after a mild attack, resort may be had to the regulation of the diet and to salines. Should the attack be repeated, or should the first attack be a severe one, the appendix should be removed. Opium or morphine should not be given during an acute attack; neither should an operation be performed during an attack unless (1) a chill should manifest itself; (2) the pain should be severe enough to require morphine; (3) the pulse is small, rapid, or irregular; (4) there is persistent vomiting; (5) there is persistent rigidity of the abdominal wall; (6) an abscess can be felt; (7) the general condition makes it imperative; (8) in doubt.

(1) **On a Peculiar Variety of Pathogenic Streptococci.** (2) **On a Peculiar Property Possessed by (at least some of) the Pathogenic Bacteria: Preliminary Communication.** By Dr. E. Libman.—(1) A streptococcus from the mucoid stools of acute entero-colitis is peculiar particularly in this, that when grown on glucose agar (effect increased upon addition of some hydrocele fluid) or lactose agar, the whole agar became whitened. With saccharose agar this did not happen. Anaerobically, a similar result could be obtained with the serum medium only. The organism is pathogenic for mice. (2) Further experiments developed the interesting fact that a large number of pathogenic bacteria can precipitate serum albumin in the presence of glucose. Some precipitate egg albumen.

The Medical News, May 19, 1900.

The Status of Gynæcology in 1876 and 1900. By Dr. Alexander J. C. Skene.

The Pharmacopœia of Nineteen Hundred. By Dr. Horatio C. Wood.

The Treatment of Suppurative Otitis Media in Young Children. By Dr. George L. Richards.—The author is opposed to much syringing in running ears, whether acute or chronic, and prefers the dry method. Of course, wherever there is a discharge from the ear, what is wanted is drainage, and to this end the parent should be carefully instructed as to the home treatment, which is as important, if not far more so, than the office treatment of the doctor. The use of a knitting needle with roughened end, upon which cotton may be loosely wound, is advised as a "home applicator." The canal should be wiped thoroughly, renewing the pledgets of cotton until the tip is no longer moist, and then the drying powder blown through a small tube into the ear. This procedure should be gone through two or three times a day. Gauze, while preferable, is not advised for home use, as gauze wicking can not be properly placed in the ear without suitable forceps and illumination.

The Philadelphia Medical Journal, May 19, 1900.

Common Colds: their Cause, Prevention, and Treatment. By Dr. D. H. Bergey.—The author's conclusions are: 1. Common colds are caused by the invasion of the mucous membrane of the upper respiratory tract by pathogenic bacteria which, in neglected cases, may invade the system and lead to serious results. Consequently, these diseases should never be regarded as trivial. 2. The ætiological factors concerned in these diseases are such as endanger the health of other persons coming in contact with those affected, and, even though the disease may have become chronic in character, it may lead to acute catarrhal inflammations in other persons. 3. The separation of those so affected from healthy persons, and especially from children in the public schools, becomes our duty on this account.

Intestinal Indigestion and its Consequences. By Dr. William Henry Porter.

The Surgical Treatment of Congenital and Pathological Disfigurements of the Face. By Dr. John B. Roberts.

Gastric Analysis. By Dr. Albert Philip Francin.

A Case of Acute Gonorrhœa treated by Mercurial Irrigations. By Dr. Ferd. C. Valentine.

Rupture of the Plantaris Muscle. By Dr. John H. Gibbon.

A Case of Chronic Pneumonia. By Dr. Malcolm S. Councill.

Boston Medical and Surgical Journal, May 17, 1900.

The Ideal Ration for an Army in the Tropics. By Dr. Edward L. Munson.

A Study of the Nature and Significance of the Symptoms in Disorders of the Stomach. By Dr. Henry F. Hewes.

A Case of Pernicious Vomiting of Pregnancy. By Dr. E. L. Twombly.

Bicornate Uterus, with Twin Pregnancy; Abortion from One Horn. By Dr. Charles H. Winn.

A Case of Pernicious Vomiting of Pregnancy. By Dr. H. S. Knight.

The Question of Supernumerary Falloppian Tubes; with Specimens of Falloppian Tubes with Supernumerary Ostia. By Dr. Agnes C. Vietor.

The Journal of the American Medical Association, May 19, 1900.

The Present Status of Operations for Cancerous Uteri. By Dr. Howard A. Kelly.

Cleft Palate. A New Urano-staphylorrhaphy. By Dr. Alexander Hugh Ferguson.

A Case of Hysterical Hip Joint. By Dr. John Lincoln Porter.—The patient was of the sex whose infinite variety custom can not stale, and aged eleven years. The case is interesting and, in its way, amusing on account of the typical inconsistency of the symptoms with true disease of the hip joint. A cure was happily effected and the dread disfigurement done away with by the administration of tincture of nux vomica and compound tincture of cinchona!

Eustachian Catheterization. By Dr. Stephen Olin Richey.

Abdominal Surgery. Five Interesting Cases: Pancreatic Cyst; Hepatic Calculi; Fæcal Fistula; Combined Appendectomy and Nephrorrhaphy. By Dr. Floyd Wilcox McRae.

Antitoxine and Intubation, with a Report of One Hundred Operations. By Dr. Burt Russell Shurly.—From a study of these cases and general observations in the treatment of diphtheria, the author thinks the following suggestions are the best: 1. Administer antitoxine early without waiting for a bacteriological diagnosis. 2. Tonsillar exudate, attended by a croupy cough or partial aphonia, is an indication for a full dose of fifteen hundred to two thousand units of antitoxine. 3. Antitoxine administered twelve hours or more prior to operative interference will reduce the mortality of intubated cases at least fifty per cent. 4. Immunize all exposed children of croup age. 5. Continuous steam inhalations are of great value in all cases. 6. Early operation is most strongly advocated.

Use of Opium in Infancy Seen in Adult Life. By Dr. T. D. Crothers.—The author greatly deplores the fact that some physicians find this drug very useful, and often give it thoughtlessly in the obscure diseases of childhood, and often give it in a routine way for a long time, particularly for neurotic and intestinal disorders. The evil effects following this in after life are amply illustrated in the cases that follow.

The Bubonic Plague in San Francisco. By Dr. W. H. Kellogg.

Vesico-rectal Anastomosis, with Especial Reference to the Treatment of Exstrophy of the Bladder. By Dr. Jacob Frank.

The Lancet, May 12, 1900.

Ptosis of the Liver and the "Floating Lobe." By Dr. F. Treves.—By ptosis of the liver is meant a sinking down of the whole liver in the abdominal cavity; in extreme cases the liver may be apparently free in the peritoneal space. The liver itself is assumed to be practically sound. In the case of the floating lobe the main body of the liver is in its normal position; a portion of the right lobe has, however, become projected downward in the form of a large tonguelike appendage. This unusual lobe may reach beyond the iliac crest and is suspended like a massive apron in front of the kidneys. Other terms applied to it are "appendicular," "linguiform," and "Reidel's lobe." The writer, after describing the means by which the liver is suspended and kept in position, states that ptosis of the liver is due to a nodding forward of the anterior part (the *mouvement de bascule* of the French). The prolapsed liver invariably becomes deformed. This deformity consists in flattening of the liver, and, in addition, a transverse groove is often found across the anterior surface of the right lobe. The liver is never so low down that the upper surface can be surmounted by the examining hand. Little that is precise is known of the ætiology of this affection. Tight lacing probably plays no part. The chief symptom is the presence of a large, rounded, movable tumor in the right side of the abdomen. Pain and distress may be entirely absent. In many cases there are definite nervous and gastro-intestinal disturbances. The writer recommends that the ordinary methods of palpation be supplemented by that described by Glénard under the title of "*le procédé du pouce.*" He describes the four steps of this method in detail, giving diagrams. The floating lobe is commonly associated with a distended gall bladder containing gallstones. All floating lobes connected with the quadrate lobe are dependent upon gallstones. As a rule, no connection can be established between the tumor and the liver, and its nature has seldom been recognized during life or before operation. It is usually taken for a movable kidney. The treatment may be medicinal, wearing of belts, etc., or operative. In ptosis of the liver the organ may be fixed in place by various schemes of suturing (hepatopexy), but the writer thinks the best results are obtained by the use of belts. In "floating lobe" the lobe may be excised, sutured to the anterior abdominal wall, or cholecystotomy may be performed.

Summer Diarrhœa. By Dr. F. J. Waldo. The first of the Milroy Lectures.—The writer discusses the subject of summer diarrhœa with special reference to its causation and prevention. After giving in detail the various forms and synonyms of diarrhœa and discussing their classification, he defines summer diarrhœa as an acute specific disease, characterized by gastro-intestinal irritation and general sepsis. He compares the death-rates for diarrhœa and enteritis from 1873 to 1897, and concludes that they have maintained a fairly steady average during the past forty years. There is no close relation between the mortality from typhoid fever and diarrhœa. Tables are given showing death-rates and annual mortality from diarrhœal diseases among children under five years of age in various districts in England.

Remarks on the Diagnosis and Prognosis in One Hundred Cases of Double Optic Neuritis with Headache. By Dr. R. T. Williamson and Dr. E. Roberts.—The writers' article is based upon one hundred cases of double optic neuritis with headache. Of these, sixty-seven proved fatal, the majority being cases of brain tumor. Six cases were syphilitic; all of these improved under treatment. Of nineteen cases without localizing symptoms, there was recovery with blindness in eight, the blindness being due to atrophy of the optic nerve. The writers conclude that in all cases of optic neuritis most careful general examination should be made before giving either a diagnosis or a prognosis. The simple trephining of the skull and the removal of bone, as practised by Horsley for the relief of optic neuritis and pressure symptoms, is a method of treatment worthy of more frequent trial.

A Study of the Heart Wall in Diphtheria, Rheumatic Fever, and Chorea. By Dr. F. J. Poynton.—The writer claims that the various cardiac phenomena seen in diphtheria, rheumatic fever, and chorea are due to similar causes—*i. e.*, a direct effect of the poison of the disease upon the cardiac muscle. In support of this view the writer brings forward evidence based upon the results of clinical observation and microscopical investigation of the heart wall in eighteen cases of rheumatic heart disease, four cases of diphtheria, and one case of chorea. In all these cases there were found extreme fatty change in the muscular fibres of the heart wall and alterations of the nuclei. The poison of diphtheria appears to destroy the muscle fibres far more than does that of rheumatic fever, possibly explaining the clinical fact that cardiac dilatation in diphtheria is usually not so marked as in rheumatism, but the tendency to a fatal termination is vastly greater.

A Case of Ruptured Liver: Successful Operation on a Pulseless Patient. By Dr. T. Carwardine.—The writer reports the case of a man, aged twenty-five, who was crushed against a wall by a case of glass weighing half a ton. He complained of pain in the right abdomen. When seen, he was almost pulseless and exsanguinated. On opening the abdomen the liver was found to be ruptured; the laceration extended across the under surface from the position of the gall bladder to the posterior part, dividing the liver almost in twain. The abdominal cavity was emptied of clots, iodoform gauze was packed in the laceration of the liver, and two pints of saline fluid were poured into the abdominal cavity. The patient recovered rapidly and within two months was strong and well.

Mastoid Disease, Acute Otitis Media, and Pyæmia occurring in an Epileptic as a Result of Injury. By Dr. R. A. Wilson.—The writer reports the case of an epileptic aged thirty-seven, who developed acute otitis media and pyæmia, which rapidly proved fatal. Six years previously the patient was struck in the mastoid region; this injury interfered with the nutrition of the mastoid cells and was the starting point of a whole train of ill effects, while a fall some eight days before death hurried on the case to a fatal termination. The disease was limited to the mastoid and tympanic cavities, although the ultimate cause of death was pyæmia.

The British Medical Journal, May 5, 1900.

Secondary Suture of the Brachial Plexus. By Dr. W. Thorburn.—The writer reports the case of a girl, aged sixteen, with wasting and complete paralysis of the left upper limb, following a mill accident. None of the intrinsic muscles responded to electrical stimulation. Of the muscles of the shoulder, the deltoid, pectoralis major, latissimus dorsi, and teres major were totally paralyzed. There was probably also paralysis of the subscapularis, the other shoulder and scapular muscles being unaffected. Anæsthesia of the arm was absolute except over the deltoid. From these and other minor facts, it was concluded that there was an injury to the brachial plexus external to the scalenus medius—*i. e.*, in a situation accessible to operation. Seven months and a half after the injury the operation of secondary suture was performed.

An incision was made in the posterior triangle of the neck, from the hyoid bone across the clavicle. The clavicle was divided, and the ends drawn out of the way. The great cervical vessels were retracted inward, and the brachial plexus was found immediately outside of the scalene muscles. It was represented by an irregular cicatricial mass, which was cut away and the peripheral and central nerve ends were approximated and sutured, tension being first removed from the shoulder by reuniting the ends of the clavicle. Four years after the operation the arm is wasted and the hand is not used for any of the practical purposes of life. There is sensation throughout the entire limb, clearest in the forearm. Flexion at the elbow joint is fairly powerful, as is adduction of the entire arm. The other muscles show slight return of power, with the exception of the triceps, which remains paralyzed. Muscular sense and localization are perfectly normal. The patient made no effort to improve the condition of her arm (as by massage, etc.), yet the few muscles she did use were the ones showing the greatest improvement.

Clinical Note on a Case of Fracture of the Carpal Scaphoid. By Sir W. Stokes.—The writer calls attention to the great value of x-ray photography as an aid in diagnosis, especially in fractures of the carpus. He reports the case of a man, aged thirty, who fell down an elevator shaft, injuring his left wrist. Great pain and swelling followed, and no diagnosis was possible until an x-ray photograph showed clearly that the carpal scaphoid had been fractured. Under the influence of rest, massage, and passive exercise, the motions of the joint have been regained to a great extent, and complete recovery is expected.

The So-called "Stave of Thumb," or Bennett's Fracture. By Dr. G. T. Beatson.—The writer reports a case of "Bennett's fracture" of the thumb, resulting from a fall, in which the diagnosis was confirmed by x-ray photography. The photograph showed the existence of a fracture of the base of the first metacarpal bone. The pain and swelling that accompany this injury so mask crepitus that it is usually regarded as a sprain. The leading feature is the inability to oppose the thumb to the index finger, and the treatment is to extend and fully abduct the thumb, retaining it in this position by a suitable splint.

A Case of Fracture Dislocation of the Spine. By Dr. A. W. Mackintosh.—The writer reports a case of fracture dislocation of the spine with complete destruction of the cord in the upper lumbar region. Death did not take place for three months and a half, during which time the various sensory and motor phenomena were carefully noted. These, together with the findings at the necropsy, are reported in detail. An interesting fact noted was that the upper limit of total analgesia and thermo-anæsthesia was distinctly higher and sharper than that of total anæsthesia.

The Therapeutical Value of the X Rays in Medicine. By Dr. E. Schiff.—The writer claims priority in having been the first to treat and cure lupus with the Röntgen rays. He also recommends the use of the x rays in the following conditions: Abnormal growth of hair, furunculosis, acne, lupus vulgaris and erythematodes, eczema and elephantiasis. In using the x rays the following are to be avoided: (*a*) Too great strength of the primary current (an ampère and a half with twelve-volt tension should never be exceeded). (*b*) Too high tension on the pole screws of the secondary transformer. (*c*) Too long and too frequent irradiations. (*d*) Too short a distance of the vacuum tube from the skin. In treating hypertrichosis, a long after-treatment of from four to eight weeks is necessary, otherwise the hair will grow again.

Treatment of Lupus by the X Rays. By Dr. R. E. Scholefield.—The writer reports a case of lupus of the nose in a boy of eighteen, which was apparently entirely cured by the use of the x rays. Treatment was begun on June 30, 1897, and terminated in November, 1899. The article is accompanied by four photographs which seem to prove conclusively the entire efficacy of the treatment. The writer suggests the use of the x rays in pulmonary tuberculosis.

An Example of the Use of the X Rays in the Examination of Enlarged Metatarso-phalangeal Joints. By Dr. G. H. Rodman.—This short article is explanatory of two skiagraphs of enlarged metatarso-phalangeal joints.

The British Medical Journal, May 12, 1900.

Remarks on Plague in Lower Animals. By Dr. F. G. Clemow.—Among the mammalia the group of animals most often affected by the plague and the most susceptible to it is that of the rodents. It has been proved beyond question that rats often suffer and die from plague and they play a considerable part in the spread of the disease. When rats are attacked with plague they generally leave their underground homes and migrate. The disease appears usually to become septicæmic before the death of the rat, and the bacillus can be found in many parts of the body. The nervous system is also severely affected. The most important sources from which rats contract the disease are the soil, grain or other food stuffs, tissues of other animals dead of plague, infected rags or dressings from plague patients, and infected insects. The virus of plague probably enters the tissues of rats either through the lungs, a wound, or through the alimentary canal. It has never been definitely proved that the infection passes from rat to man; certainly direct transmission by means of a bite is extremely rare. Of much more common occurrence is the development of plague in persons who have actually handled a living or dead rat infected by the disease. In the vast majority of cases transmission, if it occurs at all, is effected in some mediate manner, as through the soil, food, or insects. While it is generally believed to be possible that infection may be transmitted from port to port by means of plague-infected rats on shipboard, it has never been definitely proved. The writer has found only three instances in which the development of plague on shipboard was associated with a mortality among rats. Although mice, guinea-pigs, and rabbits are susceptible to laboratory infection from plague, there is little evidence that they suffer from it to any great extent under natural conditions. Bandicoots and squirrels have been known to contract the disease under natural conditions. Insect-eating mammals and bats never become the hosts of the plague bacillus. (To be continued.)

An Account of Some Researches into the Nature and Action of Snake Venom. By Dr. R. H. Elliot.—The writer reports the results of a series of investigations to determine the cause of the innocuousness of snake venom when taken by the mouth. Among the points brought out are the following: The bile does not play the sole part in the production of immunity. Snake venom is absorbed through the walls of the small intestines, but not so readily as through the channels of subcutaneous tissue. After confirming the statement of Fraser as to the antidotal powers of bile, the writer states that trypsin has the same power of reducing the lethal properties of cobra venom. Rabbits into which trypsinized venom was injected showed a marked degree of protection. Venom which had undergone pancreatic digestion proved harmless in many cases. It is also noted that rectal injections of venom produce no bad effect. Rabbits fed upon venom were found to be affected prejudicially. It is probable that the ultimate effect of such feeding would be in the direction of immunization, but in the meantime it appears to lessen the animal's resistance to the venom. In this connection it is likely that the mongoose owes its immunity against snake venom to its practice of devouring the head of its victim as soon as the victory is won.

Milk Poisoning in Malta. By Dr. T. Zammit.—The writer reports the occurrence of an epidemic of gastro-intestinal disturbances in five families in Malta, following the use of infected milk. Bacteriological examination of the milk showed the presence of the *Bacillus enteritidis sporogenes* of Klein. The micro-organism was also found in the washed and dried milk cans and in the tank water in the farmhouse. (*Although autopsies were performed in two of the cases which proved fatal, no mention is made of the finding of the micro-organism in the tissues or the alimentary canal.*) The writer lays stress on the importance of boiling all milk before use.

Beriberi. By Dr. F. Clark.—The writer describes beriberi as a disease characterized by difficulties of movement, often associated with atrophic paralysis, disorders of sensation, œdema of the skin and of the muscles of the legs, and dropsy of the serous cavities. A slight œdema along the crest of the tibia is one of the earliest symptoms. The disease is essentially chronic, the so-called acute variety being almost certainly an acute exacerbation of the disease, the initial stages of which have been unnoticed. Such cases usually succumb to acute paralysis of the heart. The writer reports a recent outbreak of beriberi at the Berlin Foundling House, Hongkong. The house contained one hundred and two Chinese children, and within two days after the first cases were noticed, no fewer than sixty others were attacked. The special points about the outbreak seemed to be the unusually early age of all the patients (from four to seven years), the absence of overcrowding, the abundant lighting and ventilation of the premises, the liberal dietary, the fact that all those attacked slept on the ground floor, and the fact that after the removal of the sick the remaining twenty-seven children remained free from the disease, although no apparent change was made in the dietary.

Notes on Ocular Leprosy. By Dr. A. Neve.—The writer reports the following notes on ocular affection present in twenty of the eighty lepers in the Cashmere State Leper Asylum. The proportion is larger in the tubercular cases than the anæsthetic. Lids: The skin and margin of the lids are liable to the deposit of nodules just as other regions. Paralytic ectropion is the characteristic eye lesion in anæsthetic leprosy. Conjunctiva: Conjunctivitis is frequent, especially in those who have paralytic ectropion. Leprous nodules appear in the conjunctiva as elsewhere. Cornea: The writer regards corneal infiltration as the characteristic lesion of tubercular leprosy. It most commonly grows as a distinct nodule, involving the sclerotic, cornea, and iris simultaneously. Iris: The iris is frequently attacked, especially when infiltration commences in the corneal margin. Lens: No cases of cataract were observed. Deep structures: Deep-seated eye affections are rare in leprosy and are always secondary to corneo-scleral lesions

Accidents and Injuries caused by Lightning. By Dr. O. Dunscombe-Honiball. — The writer reports a group of cases of lightning stroke. Out of fifteen individuals, two were killed, two rendered insensible, and six others showed varying degrees of shock. The latter six appeared dazed and presented wheals on their bodies like isolated spots of urticaria. Of the two who were rendered unconscious there was permanent affection of their mental condition. One presented a burn which was obstinately resistant to all treatment. Of the two men killed, one presented a fracture of the right temporal bone, but the brain substance was firm and normal. In the other no fracture was found, but the consistence of the brain substance was much less firm than usual. In both cases rigor mortis was present, and there was no abnormal fluidity of the blood. The writer reports a third case of fatal lightning stroke in which there was an irregular wound at the back of the head with a fracture of the skull. Rigor mortis was present and the blood was abnormally fluid.

La Presse médicale, May 2, 1900.

The Beginnings of Coxitis.—M. P. Desfosses says the early signs of pain in the knee and crying at night, with an intermittent halting gait, should not be overlooked. A halting gait in a child of more than a year of age is significant. Below this age there is a lagging behind of the affected member when flexion is practised. In the lying position one leg may appear smaller than the other, and muscular atrophy may be demonstrated. A slight glandular enlargement may affect the inguinal glands of the diseased side. If both limbs are healthy, a child lying recumbent upon a hard surface can easily extend both legs; if on one side there is a beginning coxitis, the diseased thigh will remain flexed upon the pelvis, the leg upon the thigh. A lordosis will appear when both legs are extended, if one side is diseased. Pain will be elicited upon deep pressure in Scarpa's triangle just outside of the region where the beating of the femoral artery is felt. This is the seat of pain complained of by the patient when the trochanter or the flexed knee is percussed. Treatment must be begun at once, and consists mainly in continuous extension and the wearing of suitable shoes.

La Presse médicale, May 5, 1900.

Permanent Catheter in Prostatic and Urethral Hæmorrhages. M. Félix Guyon says that in these conditions permanent catheterization is a therapeutic measure of the highest value, preventing promptly and certainly urinary infection. Patients endure the presence of the catheter easily, and infection of the prostate gland, especially by decomposing urine, is readily obviated.

Le Progrès médical, May 5, 1900.

Resection of the Superior Maxillary Nerve. M. R. Belin reports a successful resection of this nerve according to Poirier's plan, which depends upon the following anatomical points: 1. Normally, the upper border of the pterygo-maxillary cleft is from four to six millimetres above the horizontal which cuts the superior surface of the junction of the zygomatic and malar bones. 2. The external wing of the pterygoid process and the pterygo-maxillary cleft are on a mean of four centimetres from the zygomatic arch. 3. The pterygo-maxillary cleft is always upon a line drawn perpendicular to the zygomatic axis passing through the temporo-maxillary articulation—that is, about one centimetre behind the angle formed by the zygomatic axis and the external orbital process of the malar bone. By following these measurements carefully the nerve can be attacked in the pterygo-maxillary fossa.

Post-partum Hæmorrhage Cured by Drainage, followed by a Psychosis.—M. C. Zalackas reports a case of post-partum hæmorrhage which was cured by hot douches and the introduction of iodoform gauze into the uterus. The douches and the packing were continued daily. The patient subsequently developed a melancholia. The author draws the conclusions that a true post-puerperal psychosis exists. When similar psychoses arise after gynæcological operations, they are rare and occur only in women predisposed to mental disease. The psychosis and the actual performance of the operation have no connection. Fear, puberty, and the menopause play an important rôle in the production of these mental disturbances.

Berliner klinische Wochenschrift, April 23, 1900.

Feeding and Diseases of Sucklings.—Dr. Adolf Baginsky gives an excellent and interesting history of the feeding of infants during the last century, pointing out the advances made in recent years. He thinks that one of the great problems of the new century will be the discovery of a proper food for infants with a modification for the individual. When possible, the infant should receive its mother's milk. He regards infantile mortality as greatly influenced by digestive diseases and the various complications which depend upon them.

The Extirpation of Infectious Diseases, especially Tuberculosis.—Dr. W. Dönitz believes that the time may come when immunity, in its large sense, will provide safety for the community against infectious diseases, just as it is now protected against small-pox by the repeated vaccination of whole communities. (Continued article.)

Treatment of Angeiomata and Other Congenital Vascular Neoplasms.—Dr. E. Holländer recommends cauterization with hot air for angeiomata and all other vascular growths of the skin, except in cases in which the neoplasm has invaded the mucous membrane, where the knife is a better instrument. The method has the advantages of a few sessions in place of the many painful applications of deep thermal puncture, there is absolutely no hæmorrhage, the scar tissue formed is scarcely visible in small areas, and the method is universally applicable. After a few applications the skin becomes mummified, the blood being driven into the body away from the growth.

The Plague in the Light of Modern Research. By Dr. P. Frosch. (Concluded.)

Berliner klinische Wochenschrift, April 30, 1900.

Röntgen Pictures of the Bones. By Dr. Julius Wolff.

Treatment of Tuberculosis by Water Cure.—W. Winternitz advises improvement in the general condition of persons threatened with tuberculosis by cold baths, showers, or douches. He urges the establishment of water cures with hot and cold baths, modified baths, and carbonic-acid baths, together with opportunities for sweat baths and hot-air baths, to be followed by rubbing by trained assistants, in all public baths and sanatoria. He reports by the use of these methods a comparative cure with a gain in weight in eighty per cent. of his own chronic afebrile cases; a decided improvement (thirty-two per cent.) in florid cases; and in incurable cases, subjective improvement and a renewed hope of recovery, which he regards as of great humanitarian significance.

Peculiar Crystals in the Bones of Rhachitic Children treated with Adrenal Extract.—Dr. Stoeltzner and Dr. Salge have examined the bones of three children treated in this manner, and have discovered that they contain crystals which dissolve sparingly in alcohol, more freely in water, and have a strong affinity for silver. The crystals obtained from the aqueous solution bear such a striking resemblance to spermin crystals that it is impossible to distinguish between them. These crystals have not previously been found in the bones of rhachitic children.

Prospects for the Elimination of the Infectious Diseases. By Dr. W. Dönitz.

Deutsche Medizinal-Zeitung, May 3, 1900.

Iodipin for the Determination of Gastric Motility.—Dr. A. Sternberg says that the demonstration of splashing in the stomach is not sufficient for the diagnosis of dilatation. It has been shown by Winternitz that iodipin gives the reaction for iodine in the saliva in sixty-five minutes in persons with normal stomachs. When this reaction is, therefore, delayed longer than this time, it may be assumed that the motility of the stomach is impaired. A differential diagnosis may thus be made between organic gastric disease and functional disturbances with seeming impaired motility.

The Importance of Physical and Dietetic Methods of Cure. By Dr. J. Marcuse.

Deutsche Medizinal-Zeitung, May 7, 1900.

Relation of Arterio-sclerosis and Myocarditis to Angina Pectoris.—Dr. Abée believes that angina pectoris is evoked by a tugging of a mechanical nature on a diseased heart, already the seat of a myocarditis or a valvular lesion. Through overexertion disturbance of compensation ensues with incomplete emptying of the ventricles, and a collection of blood in them as a result. The heart sinks, and thus produces a stretching and tugging of the aorta and coronary vessels. This he regards as the first stage of the angina, the cardiac blood-vessels being injured the more readily when myocarditis is present, in which they are always diseased.

Riforma medica, April 18, 19, and 20, 1900.

Two Cases of Cysticercus in the Brain. By Dr. C. Martinotti and Dr. V. Tirelli.—The writers describe in detail the clinical features and the post-mortem findings of two cases of cysticercus of the brain, and give an account of the histologic examinations of these brains which explain the sequence of the symptoms. Some of the cysts were examined in the fresh state in normal salt solution, and were found in various stages of development and of degeneration. On macroscopic examination pieces of these brains prepared with Müller's fluid showed that there was a layer of new connective tissue forming a thick capsule around the cysts, while within the cavity and within the meshes of the wall there was a considerable quantity of *débris* of degenerated cysticerci. The age of the cysts was indicated by the thickness of the wall, and in most cases was considerable.

The effects of the cysticercus on the brain tissue may be said to be twofold—mechanical and chemical. The mechanical pressure exercised by the growing cysts is certainly important, but not to such an extent as that of the toxic products of the cysticercus when they affect the brain cells and thus produce disturbances of the central nervous system. It has been shown that the bothriocephalus and other worms eliminate toxines that produce changes in the blood cells of the persons suffering from helminthiasis, and, by analogy, the authors think it reasonable to suppose that the cysticercus also manufactures a poison which lies at the basis of the important symptoms of the disease when it attacks the brain. It is true, some cases of cerebral cysticercus have been known to occur without any symptoms, or with very few focal phenomena, but these will probably find an explanation in some pathologic condition that was peculiar to the cases, and that probably has escaped notice. The fact that some of these cysts were found in various stages of degeneration, while others were well developed, is explained by the authors by assuming that in some parts of the brain the tissues are more favorable to the growth of the cysts, while in others their development is arrested, and they degenerate. Thus, they found that at the periphery of the brain the cysts were usually well developed, while in the central parts most of them were found in a state of degeneration. Microscopic examination showed that there were no healthy nerve cells in the immediate vicinity of the cysts, because the cerebral cells in these regions degenerate and are destroyed by the proximity of the cysticercus. Inflammatory foci containing numerous leucocytes, pigment granules, and detritus were found in the neighborhood of the cysts. These changes explain the symptoms of irritation which are seen in these cases—headache, hallucinations, motor excitement, epileptiform convulsions, and later the symptoms of destruction—the motor paralyses, the coma, etc. In closing, the writers comment upon the difficulty of diagnosticating cysticercus *intra vitam,* and speak of the remittent character of the symptoms as leading to confusion with epilepsy and insanity.

Riforma medica, April 21 and 23, 1900.

A Histological Research Concerning the Modifications in the Organs of Hibernating Mammals. (A Preliminary Communication.) By Dr. L. Baroncini and Dr. A. Beretta.—But little attention has been paid heretofore to the changes which occur in the principal organs of animals during hibernation. Most writers on this theme have confined themselves to the consideration of the physiological functions during this peculiar state. The present article deals with the anatomical changes in the central nervous system and in the kidney of the European dormouse (*Myoxus avellanarius*), a mammal of the family *Myoxidæ,* and in the same organs of the two species of bats (*Vespertilio* and *Vesperugo*).

The writers examined the spinal cord, the medulla, the cerebellum, and the cerebrum of these animals. In the spinal cord the changes in the anterior and posterior horn cells consist of a diminution of the staining capacity of the granules, the appearance of minute points which stain deeply and look like disintegrated particles of the granules, and finally the gradual disappearance of the chromatic substance in the cell body. The nuclei of these cells at first become paler, the chromatic fibres become more scarce, and the pseudo-nucleoli which are situated at the nodal points of the net gradually disappear. Sometimes the nucleus loses its distinct outline and seemingly merges into the surrounding protoplasm. Sometimes it shrinks around the nucleolus, and appears more intensely stained, while around it there is formed a clear space with an irregular contour. In some cells the nucleus is found transposed to the periphery of the cell, or projecting from the cell wall. While a double nucleolus is often found in the normal cells, in hibernation such polynucleolar nuclei are absent.

The nucleolus travels toward the periphery of the nucleus, projects from its contour, and finally escapes from the nucleus. At the end of hibernation most cells are without nucleoli.

The lymph spaces around the cells are increased in size during the whole period of hibernation. A peculiarity of the lesions is that all the cells of an animal at a given stage of hibernation do not present the same alterations, but that the process seems to affect different parts of the cord from time to time, so that we may find normal cells in one region and completely disintegrated cells in another.

Another fact to be noted is that the lesions of the cells, as a rule, were more advanced in the dormice than in the bats at a corresponding period of hibernation. The sleep of the former animals is much deeper than that of the latter. In the medulla oblongata and in the pons the large cells of the nerve nuclei are by far less markedly affected than those of the cord, so that at the end of hibernation the lesions in the former correspond to those that are found in the cells of the cord at the beginning of the winter.

In the cerebellum the cells of Purkinje show the same changes as the cells in the cornua of the cord, except that, as a rule, the degenerative changes are further advanced in the cerebellum than in the cord; that the shrunken nucleus surrounded by the empty space is more frequently found, and the pale and ill-defined nucleus but rarely; and that the nucleolus but seldom escapes from the nucleus. It is probable that the nucleolus becomes split up into a number of granules which escape (leaving a portion in the nucleus to represent the central body), because minute granules which stain very deeply, varying in number from two to six, are found at the periphery of the nucleus, and outside of it in the cell body.

In the nuclei of the cells of the molecular stratum the same changes are observed as in those of Purkinje's cells. In the stratum granulosum the granules of the cells, normally five to ten in number, become paler and gradually disappear. In the brain cortex the cells present the same progressive changes as in the cord. The diminution of the chromatic substance is very marked and the protoplasm shows one or two large vacuoles, usually at the periphery of the cell.

The large pyramidal cells that form the gray matter of the cornu Ammonis (the hippocampus major) show the changes described above, and vacuolization is very well marked, so much so that some regions look as though whole cells were missing. In the small cells of the fascia dentata, the nucleus usually escapes.

The changes observed in the kidney were as follows: 1. A cloudy swelling of the epithelium of the labyrinth, which increased and spread as the winter sleep progressed. 2. The presence of droplets of fat in some of the convoluted tubules and ascending loops of Henle. The amount of fat increases as the winter advances. 3. Absence of perceptible changes in the collecting tubules and in the tubes of Bellini.

In some epithelial cells of the labyrinth the nucleolus approaches the periphery of the nucleus, then indents the contour of the latter; the nucleus approaches the periphery of the cell, and finally the nucleus is found to contain no nucleolus, while near the cells we find a small body resembling the nucleolus. The authors reserve an explanation of their findings for a future paper on the subject.

Riforma medica, April 24, 1900.

On the Influence of Abdominal Massage upon the Elimination of Sulphuric Ethers and of Indican in the Urine. By Dr. Umberto Baccarani.—In a previous article the writer has come to the conclusion that there is no relation between the elimination of the sulphuric ethers and of indican in the urine. In the present paper he considers the elimination of these substances before and after abdominal massage. If the amount of these evidences of intestinal intoxication is increased after a *séance* of abdominal massage, it is apparent that the patient in question has become disembarrassed of a certain amount of intestinal poison. Baccarani, after a study of twelve cases, sums up his findings in the following conclusions: 1. Repeated massage of the abdomen in a majority of cases increases the elimination of indican and of the sulphuric ethers, especially the latter. 2. This increase appears to be in relation with the functional condition of the intestine, as it is more frequent and more marked in the cases in which the bowels moved after the massage. 3. The quantity of the urine varies without any relation to the massage.

Rivista critica di clinica medica, April 21, 1900.

A Contribution to the Treatment of Infantile Spastic Paralysis.—Dr. A. Codivilla believes that the symptomatic treatment of this condition now belongs exclusively to the domain of orthopædics. The writer has treated twelve cases of spastic paralysis during the past ten months and has obtained satisfactory results. The purpose of the present paper is to call attention to a mode of treatment which has been recently recommended in this affection, and which until now has been used in but a few cases of spastic contractures of the feet and hands —namely, the transplantation of tendons by plastic methods.

The method in question was first used by the writer in forty cases of flaccid paralyses, especially infantile spinal paralyses, which he published in a former article. In the majority of cases of infantile spinal paralyses the distortion and the deformity are caused by a disturbance of the equilibrium of the muscles which move the affected joint. By the transplantation of tendons and muscles we may reestablish this equilibrium and secure a normal position for the affected limb. Eulenburg, Sonnenburg, Hoffa, Vulpius, and Wallerstein have applied this principle to spastic paralyses with good results. The writer reports two cases in which he succeeded in restoring the function as well as in reducing the deformity of the limbs.

Vratch, April 8, 1900, O. S. (April 20, N. S.).

Concerning the Study of Vital Statistics. By Dr. D. H. Jbankoff.—The writer gives an account of the work of the sanitary and statistical bureaus throughout Russia. Of thirty-four governments in the Empire, only twenty have provision for the collection of vital and sanitary statistics, and in these the system of work is so deficient that little or no use is made of the facts gathered. Statistics of births, deaths, and marriages are collected from the data furnished by the clergy upon cards filled out by the priests for each case. The cause of death in many instances is given according to the priest's discretion. The author emphasizes the necessity of a thorough and scientific system of vital statistics, and points out how the establishment of such a system has diminished the mortality of the population in England and France.

The Epidemic of Bubonic Plague in the Kirghiz Steppe in the Province of Astrakhan. By Dr. M. I. Aroustamoff.—The epidemic in question appeared in the Kirghiz steppe (46° to 50° N. lat., 47° to 51° long., Greenwich) on October 25, 1899. This enormous area of steppe contains sixty-six thousand square versts (a verst = 0.66 mile); its population consists of the nomadic tribe Kirghizes, and is estimated to number about one family to each square verst. The soil of the steppe consists of fine sand, and its vegetation is very scanty. The people live in huts which are built of clay, sometimes partly underground, and in summer travel about in kibitkas, a kind of field wagon. Their diet consists largely of meat and milk. They consume very large quantities of the latter, and also a great deal of koumyss, which they prepare from mare's milk. They do not see a piece of bread for months, so scarce is any form of vegetable food in that region. The origin of the epidemic is not known, but it is supposed that the infection came from the East, as the Kirghizes are Mohammedans, and occasionally make pilgrimages to Mecca. The first victim was the daughter of a Mullah, or priest, in one of the settlements of this region, Irsaloo-aral, on an island situated near the border of the Caspian Sea. Of the fifty-two inhabitants of this village, who lived in ten huts, twenty-five were taken ill, and of these, twenty-two died. The settlement was surrounded by mounted pickets, and the patients isolated. The dead bodies were burned, and the houses where the disease occurred disinfected. After the epidemic was over, the entire settlement was burned, and all persons within the chain of quarantine were provided with new clothing by the government. A number of physicians had charge of the patients, having been sent to the village as soon as the news of the epidemic reached the authorities. Unfortunately, the disease had spread to two other islands before the quarantine was established, and thus two other settlements were attacked in the same way. These were situated close to each other, within thirty-five versts of the first settlement, and contained altogether sixty-five inhabitants, occupying sixteen huts. Of these, thirty-nine died. The same measures as to quarantine and disinfection were adopted there as in the first village. The epidemic was successfully stamped out by the middle of December.

Medical Statistics of Taschkent. By Dr. Schwarz. (Continued.)

Concerning the Question of the Therapeutic Use of Electric Light. By Dr. I. G. Gabrilovitch and Dr. L. O. Finkelstein.—After giving the histories of the cases treated, the writers summarize their findings in the following conclusions: 1. Pain was relieved completely or vary markedly during the *séances;* in ten cases one *séance* was sufficient, but the number of sittings required to cure the pain varied from two to fifty-four in the other patients. 2. The pain recurred a half hour to an hour after the sitting in five cases, while in the rest it only reappeared from three to ten hours after the *séance.* 3. In five cases after the first sitting the pain was greater when it returned than before the beginning of the treatment. As a rule, however, the pain became gradually less and less severe as the treatment progressed, and the intervals between the sittings and the recurrence of pain became gradually longer. 4. The least number of *séances* was required for the cases of muscular rheumatism, the greatest for those of sciatica. 5. Complete cure resulted in the cases of acute articular rheumatism, of acute muscular rheumatism, and of both muscular and articular rheumatism. In sciatica there was a marked relief of the symptoms. In the exacerbations of chronic rheumatism the writers noted a complete absence of pain after the treatment, but the attacks would recur on exposure to cold and damp. Intercostal neuralgia and syphilitic pain disappeared under the influence of the treatment as long as the *séances* lasted. In the case of tuberculous periostitis of the rib no definite result can be given, although the subjective effect of the treatment was excellent. In the thirty-one cases of pleuritic pain from various causes, eleven showed a diminution of the friction sounds after the treatment; in the others, in spite of the fact that the pain disappeared, the friction sounds remained unchanged. The best results were obtained, as far as the disappearance of the friction sounds is concerned, in those cases where the adhesions were recent; in the more chronic cases, with old adhesions, the electric light did not seem to have any effect. 6. In a few cases slight unpleasant effects were noted in connection with the *séances.* In one instance there was a morbid irritability of the skin which lasted two days; in another, an abnormal pigmentation of the skin after twenty *séances.* In one case the illuminated area of skin became moist; in four patients a general moisture of the skin was noted, and in two the area of skin exposed to the light remained comparatively dry, while the rest of the surface was moist. The appearance of perspiration did not depend so much upon the strength of the light and upon its distance from the surface as upon the personal idiosyncrasy of the patient, and upon his subjective feelings; the worse the latter, the greater the weakness, the more readily will perspiration appear. Headache, weakness, and drowsiness may also be present, but these too depend upon the personality of the patient, and upon his subjective feelings before the sitting. Headache and weakness appeared during the *séance,* and continued for one hour or longer after the use of the light. Drowsiness appeared soon after the sitting, and disappeared an hour or two after the same. The writers conclude that electric light is a very agreeable and useful adjunct in the treatment of tuberculous patients. Whether it influences the process in the lungs when the inflammation is still fresh, they can not definitely say, but hope to report their experiences in this direction in a future paper.

Annals of Surgery, April, 1900.

Surgery in the Presence of Sugar in the Urine. By Dr. Arthur L. Fisk.—The author presents cases in support of the thesis that while individuals suffering with surgical diseases complicated by glycosuria are not good surgical subjects, very great judgment must be exercised in the selection of cases, in the determination of the kind and extent of the operation to be performed, and the strictest surgical asepsis must be rigidly observed throughout. Infection, when it occurs, is from without, and is the result of an error in the technique; it thus happens that the constitutional symptoms become most serious, and out of all proportion to the local, ending generally in death. When infection does not occur the operative wounds heal kindly but slowly, especially in granulating wounds. The vascularity of the tissue must be interfered with as little as possible, so that every operation should be planned with this object in mind.

This is particularly so in gangrene of the extremities, and the author considers it better to cut down and ligate the artery rather than to attempt bloodless amputation by the Esmarch band.

On Volvulus in Association with Hernia. By R. Lawford Knaggs, M. C., F. R. C. S.—The author, having had two cases of hernia in which strangulation was dependent upon a volvulus, has collected seventeen cases in which a volvulus was associated with a hernial tumor. These cases lend themselves to subdivision into the following groups: 1. Volvulus of the hernial contents—the neck of the volvulus being either within the hernial sac or close to the hernial aperture. (*a*) Cases in which all the intestinal contents are involved. (*b*) Cases in which only a portion of the intestinal contents is affected. 2. Volvulus in which the hernial contents are implicated, but where the neck and some of the affected coils lie within the abdomen. 3. Volvulus produced within the abdomen by the reduction of the hernia. 4. Volvulus occurring within the abdomen from some predisposing condition, more or less directly connected with a hernia.

Traumatisms Inflicted by Animals. By Dr. R. Harvey Reed.—The author combats "the position taken by some medical men, that any animal bite is liable to be followed by hydrophobia, whether the animal has the disease or not." He considers that many cases of so-called hydrophobia are really tetanus. A case of lion bite and a case of injury by a grizzly bear are related. The author strongly recommends the following as a cleansing lotion: ℞ Boric-acid solution, three per cent., eighty parts; alcohol, ten; glycerin, ten; saturated solution of bichloride of mercury (two ounces to two ounces of alcohol and six ounces of glycerin), eight drops to each pint of the lotion.

On the Use of Fixation Plates in the Treatment of Fractures of the Leg. By Dr. Lewis W. Steinbach.—The author recommends silver plates one sixteenth of an inch in thickness, three inches and a half in length, and three fourths of an inch wide, with perforations for two screws half an inch apart. Four cases are recorded.

The Relationship between Cholecystitis, Jaundice, and Gallstones. By Dr. Archibald MacLaren.

Hermetic Sealing of Aseptic Wounds. By Dr. Henry O. Marcy.—The author calls for greater attention to the soil as well as the seed in regard to bacterial infection, and enjoins clean dissection, the least force requisite for vascular occlusion, thorough coaptation, and no drainage tube. For a dressing in an aseptic operation he extols iodoform collodion strengthened by a few fibres of cotton as fluid-proof and germ-proof.

The Surgery of Gastric Ulcers. By Dr. Thomas W. Huntington.

Excision of the External Two Thirds of a Gasserian Ganglion by the Hartley-Krause Method, after Preliminary Ligation of the External Carotid Artery. By Dr. Joseph M. Spellissy.

Two Cases of Anomalous Spinous Process of Seventh Cervical Vertebra Articulating with the Scapula. By Dr. H. Augustus Wilson and Dr. J. Torrance Rugh.

New Operating Table and an Improved Bowl Stand. By Dr. August Schachner.

Conical Stump after Amputation in Childhood. By Dr. Charles A. Powers.—The author records cases and says that "after amputation through the upper part of the arm or the upper part of the leg in childhood, a slow development of a conical condition is physiological and is to be expected. This is quite independent of the nature of the stump after the original amputation. It is because the humerus and the leg bones are developed in large part from their upper epiphyses. The growth takes place at these epiphyses and simply pushes the bone down through the soft parts." Unless the parents are forewarned of this they are likely in after years to blame the surgeon.

Montreal Medical Journal, April, 1900.

The Plague. A Prospect and a Retrospect. By J. George Adami, M. D., F. R. S. E.—The author cautions us against false security based upon the long absence of the disease from the civilized areas of the temperate zone, and urges purging of unsanitary cities, especially maritime ones, and strict quarantine activity. He next discusses the nature of plague and the varieties classified by Cantlie as follows: 1. Bubonic. 2. Pneumonic. 3. Intestinal. 4. Cerebral. 5. Puerperal. 6. Pestis siderans (*i. e.*, rapidly fatal cases in which the usual clinical signs have not had time to develop). 7. Typhus type. 8. Pestis ambulans. 9. Pestis minor (*i. e.*, adenitis going on to suppuration with but little constitutional disturbance). As regards the bacilli, the virus is supposed to be transmitted from infected animals—*e. g.*, rodents—by fleas and parasites. These leave the dead bodies within twenty-four hours, after which time, it is stated, they may be handled with impunity. The local lesion is rarely discoverable, and disease may be induced in susceptible animals by merely rubbing some of the virus over the skin. The symptomatology, prognosis, and treatment are discussed at length. The author is inclined to hope for good results from a further investigation of Haffkine's inoculation.

Clinical Lecture on Gallstone Surgery Delivered at the Montreal General Hospital. By Dr. G. E. Armstrong.

Gonorrhœa in the Female. By Dr. William Gardner.—The author emphasizes the persistence of danger in marriage in those who have ever had gonorrhœa. To be certain of the diagnosis the gonococci must be found inside of the pus cells. While the presence of biscuit-shaped cocci in pairs free in the secretion without the association of other bacteria is very significant, it is, nevertheless, unsafe to make a positive diagnosis therefrom. Negative examinations are only valuable in proportion to the frequency of their repetition. A latent gonorrhœal infection may be roused to activity or a mixed infection set up even where an apparent cure has been followed by a successful full-term pregnancy. For treatment, the author recommends rest in bed, unstimulating diet, saline purgation, warm hip baths, and frequent soothing irrigation of the genitals. Linseed tea is very grateful. When acute symptoms have subsided, germicidal douches are recommended; permanganate of potassium, 1 to 5,000; bichloride of mercury, 1 to from 2,000 to 5,000, or formaldehyde, 1 to from 2,000 to 4,000. The dorsal position is advised, and if bichloride is used, it should be followed by a small quantity of warm water for fear of toxic absorption. But the vaginal douche must be considered as merely accessory to the careful thorough application to the whole of the affected surfaces of from twenty to sixty grains of nitrate of silver to the ounce of water, in the Sims position with the Sims speculum. Or protargol or argonin in from one- to three-per-cent. solutions may be used. The urethra, cervix, Skene's tubules, and Bartholin's ducts must be similarly treated; the first two by instillation, the others by a syringe similar to that used by the ophthalmic surgeon for the canaliculi of the nasal duct.

A five- to ten-per-cent. solution of ichthyol-glycerin may also be used. Curetting, douches of the uterine cavity, etc., must be avoided in all but the most advanced chronic stage. Time and patience are advised for gonorrhœal affections of the Fallopian tubes.

A Simple and Inexpensive Method of Obtaining and Pasteurizing Cream for the Preparation of Infant Food. By Dr. G. Gordon Campbell.—The milk is set in a cool place for six or eight hours to allow the cream to rise. In separating the cream from the milk, to insure uniformity, draw the milk from the bottom of the bottle and allow the cream to slowly settle down without being disturbed as the milk is taken away. This can be accomplished by means of a siphon made from a piece of glass tubing twenty-one inches in length and a quarter of an inch in calibre, which can be obtained from any wholesale druggists cut into lengths of twenty-one inches. Bend the glass to a V shape by holding it in the flame of an ordinary gas jet, or coal-oil lamp with the chimney removed, making one arm of the siphon an inch or two longer than the other.

Hold the siphon with the angle down, fill it with water, and close the long arm with the tip of the finger. Then, keeping the finger applied to the long end, turn the siphon with the angle up and introduce the short arm into the bottle of milk, letting it rest upon the bottom. On removing the finger, the milk will flow through the tube and continue to do so until the bottle is empty. If, however, the layer of cream is watched, the siphon can be lifted out of the bottle just before the cream reaches it, and thus there is left in the bottle all the cream and a small portion of milk, the latter depending upon the expertness of the person using the siphon.

To pasteurize the cream, a clear glass bottle with not too large a neck, a chemical thermometer registering up to 212° F. fitted in a perforated cork, which loosely fits the neck of the bottle, in such a manner that the bulb of the thermometer comes within half an inch of the bottom of the bottle, and some absorbent cotton, are all that is required in the way of apparatus. The chemical thermometer can be obtained from any wholesale druggist for eighty-five cents. The cork can be perforated with a rat-tail file or by burning out the hole with a redhot skewer. The cream is put into the bottle and the cork containing the thermometer inserted; the bottle is then placed in a pot containing a couple of inches of warm water and allowed to heat on the stove. The thermometer is watched until it reaches 160° F., taking care that it does not go above 165° F., and the pot is then set on the back of the stove, where it will cool off very slowly, and allowed to remain there for twenty minutes. At the end of this time the bottle is removed from the pot and the cork replaced with a rolled-up plug of absorbent cotton. If the cotton should become wet it must be changed for a dry plug. Cream prepared in this way will keep sweet for twenty-four hours at least without needing to be kept on ice. The cotton plug must be replaced as often as it becomes moist.

Asepsis and Antisepsis in Surgery. By Dr. J. L. Chabot.

On the Estimation of Disability and Disease Due to Injury. By Dr. Wyatt Johnston.

Archives de médecine des enfants, May, 1900.

On the Production and Management of the Milk for the Emperor and Empress Frederick Children's Hospital. By M. Baginsky and M. Sommerfeld.

Considerations on the Treatment of Papillomata of the Larynx in the Child. By M. Maurice Boulay.

The Statistics of Typhoid Fever Treated in the Medical Clinic of the Bordeaux Children's Hospital. By M. André Moussous.—From January 1, 1890, to March 15, 1900, 106 children with typhoid fever were admitted into the hospital. Two of them were removed almost immediately by their parents, one died suddenly while in full convalescence, and all the others were completely cured. The author says that the disease has not been very prevalent in Bordeaux during the past ten years, and he thinks it has not been quite so severe as formerly; nevertheless, some of his cases were very grave. He lays great stress upon the bath treatment and upon early recourse to it. Ordinarily the temperature of the bath need be no lower than between 83° and 86° F.

Deutsche Aerzte-Zeitung, May 1, 1900.

On the Treatment of Simple Fractures. By Dr. Karl Schuchardt.

On Obstinate Uterine Hæmorrhages. (Conclusion.) By Dr. A. Czempin.—The author remarks of fluid extract of hydrastis that its employment is efficient only when it is begun some days before the occurrence of the hæmorrhage, and the doses are increased as the bleeding comes on; whereas hydrastinine and the equally valuable stypticin are often productive of good results in cases in which it has been impossible to foretell the occurrence of hæmorrhage. In the uterine hæmorrhages of virgins local treatment is only exceptionally admissible, although sometimes curetting is called for. In these cases the author has found lukewarm or cold sitz baths of advantage, taken daily or five times a week, for from ten to twenty minutes at a time. He lays stress on their not being taken just before the patient goes to bed; she should remain up for an hour, otherwise the speedy reaction that takes place will make the refrigeration of the pelvic organs illusory. Steam cauterization of the uterine cavity is likely to produce total destruction of the endometrium, with more or less occlusion of the organ. This is to be deprecated in some cases, but is harmless in others, such as those occurring after the climacteric.

Why is there no Physiology of the Connective Tissue? By Dr. G. Schrakamp.

The Significance of Osmotic Pressure in Practical Medicine. By Dr. Géza Kövesi.

Miscellaneous.

The Medical School of the Future.—Dr. H. P. Bowditch (*Science*, May 4th), in a presidential address before the Fifth Triennial Congress of American Physicians and Surgeons given at Washington, May 2d, says that if the views here presented are well founded we may expect that a medical school of the first rank will, in the immediate future, be organized and administered somewhat as follows: I. It will be connected with a university, but will be so far independent of university control that the faculty will practically decide all questions relating to methods of instruction and the personnel of the teaching body. II. It will offer advanced instruction in every department of medicine, and will therefore necessarily adopt an elective system of some sort, since the amount of instruction provided will be far more than any one student can follow. III. The laboratory method of instruction will be greatly extended, and students will be trained to get their knowledge, so far as possible, by the direct study of Nature, but the didactic lecture, though reduced in importance, will not be displaced from its position as an educational agency. IV. The work of the students will probably be so arranged that their attention will be concentrated upon one principal subject at a time, and these subjects will follow each other in a natural order. V. Examinations will be so conducted as to afford a test of both the faithfulness with which a student performs his daily work and of his permanent acquisition of medical knowledge fitting him to practise his profession.

The Use of X Rays in Lupus.—Dr. W. A. Pusey (*Chicago Medical Recorder*, April) says that in the proper use of X rays we have a remedy of the greatest importance in this intractable disease. The advantages which this method seems to offer for the treatment of lupus may be briefly summarized as follows: 1. Nearly all of the cases which have been treated by this method have been of grave, persistent character and have resisted for years recognized forms of treatment. The diagnosis in practically all of the cases is above question. 2. The fact that this method is practically painless appears as an advantage of no small consideration. 3. All observers agree upon the excellent character of the scars following this method of treatment. They are soft, pliable, and thin, and nearly approach the normal skin in appearance. The other method of treatment which this one approaches most closely and with which it must bear comparison is Finsen's treatment by the ultra-violet rays of white light. The two methods are similar in using for destruction of the lupous tissue actinic rays of high potency. There are the best reasons for believing that the methods are identical in principle, one using highly actinic rays derived from white light, the other similar or identical rays which are found among the X rays. The results attained by the two methods are strikingly similar and are a further argument for the similarity or identity of the essential agents. The advantages which the X-ray method offers are convenience and rapidity of results. Finsen's method of treatment is inconvenient and excessively slow. Under his method patients have daily sittings of about two hours, and in an hour it is only possible to treat an area a little over half an inch square. The time required for the treatment of a case extends over about two years. With the method of treatment by X rays, on the other hand, the sittings are short, only a few minutes daily, and an area of lupus involving the entire side of the face can be treated at one sitting. The results, moreover, are obtained in a few weeks or at most in a few months.

Silver Nitrate Injections in Phthisis.—Dr. Thomas J. Mays (*Proceedings of the Philadelphia County Medical Society*, February and March) gives further comments on the treatment of phthisis by hypodermic injections of silver nitrate. Records of seven additional cases were presented to the society. Improvement is asserted to take place under this treatment in cough and expectoration, vomiting, appetite, general strength, physical signs, fever, night sweats, and weight.

The strength of the silver solution used was five minims of a two-and-a-half-per-cent. solution preceded by a cocaine solution of the same strength and the same dose—the latter being used to obviate the pain which would be produced by the former. The point selected for their introduction is immediately over or slightly behind the pulsating carotid artery in the neck, midway between the angle of the lower jaw and the clavicle. In order to avoid puncturing the underlying artery or vein it is important to lift the skin between the thumb and forefinger of the left hand and introduce the needle just below the thickness of the skin. The intent is to produce a certain amount of counter-irritation over the vagus, and hence there is no need to penetrate deeper than through the skin. The following plan is a very practical one for the introduction of these agents: Inject the cocaine solution, detach the syringe from the needle, and let the latter remain in the puncture. Wash out the syringe with water, draw the silver solution into the syringe, attach the latter to the needle, and throw in the required amount.

At the suggestion of Dr. W. O. Hermance, Dr. Mays has constructed a double-barreled syringe, of the ordinary hypodermic size, containing a stopcock, and a single nozzle, to which is attached the needle. One barrel is filled with the silver and the other with the cocaine solution, and the required amount of each may be injected without detaching the syringe from the needle. He has used this syringe with a great deal of satisfaction in hospital and dispensary work. It saves time when a number of patients are to be injected at one visit.

The number of injections which are necessary depends on circumstances. It is a good plan to begin with one injection on the side of the neck on which the affected lung is situated. In a week or ten days this is to be repeated, unless the original or previous injection is followed by too much irritation. In urgent cases, due to excessive coughing, Dr. Mays has repeated the injections in three or four days. Most of the injections should be given on the affected side, and occasionally one on the opposite side. So far as his records show, twenty-one was the highest number of injections he gave to one patient. During the last seventeen months he has administered the silver injections to more than one hundred and fifty consumptive patients.

Letters to the Editor.

THE SOLDIER IN THE TROPICS.

New York, *May 18, 1900.*

To the Editor of the New York Medical Journal:

Sir: In the issue of the 7th of April of the *Philadelphia Medical Journal*, Captain Woodruff, of the United States Army medical service, gives us an interesting article embodying his observations on the food, alcohol, and acclimatization of the soldier in the tropics, his experience being evidently acquired in the Philippine campaign. I agree with Captain Woodruff as regards his remarks on fat being a very necessary article of diet in the tropics, the quantity of which should not be reduced, as one would infer from the physiological standpoint. In support of this I can quote instances of "infirm" prisoners in Indian jails, where the ration is a liberal one, rapidly improving in weight and in general nutrition after an increase of oil in their ration, or a course of inunction of oil.

The question of a good service ration is a difficult one, and Captain Woodruff has ably discussed the points where and how it fails. Among these may be mentioned the distance from the base, the question of transport, the difficulty of keeping cattle for slaughter in good condition when marched with a force, the monotony of the ration, the difficulty of tinning meats in such a manner as to preserve their nutritive constituents, etc. Nowadays field kitchens allow us fresh bread, whenever possible; fresh meat, purchased locally, is always an article of ration. Then dried tinned potatoes and compressed vegetables, which latter, however, leave considerable room for improvement, show that we have made some advances in our field ration. The German *Erbswurst*, or rather the *Erbswurst* powder, which makes most excellent soup, will probably form an important article in the dietary of all soldiers in future campaigns.

The "insomnia," "loss of memory," etc., which are put down by the author to neurasthenia in a tropical climate will be recognized under the term "Punjab head" or "Burma head" by any one who has served in India.* While prepared to admit that these symptoms are due to overwork in a tropical climate, I do not agree with Captain Woodruff in thinking that from three to four ounces of whisky a day will prevent this nervous exhaustion, as I infer him to say, or that alcohol is at all necessary for the European living in the tropics. The popular idea that a certain proportion of stimulants is absolutely necessary for keeping up one's health in a hot climate is a fallacious one. We are told later on that the system craves tea or coffee, cocaine or stimulants. Is not Captain Woodruff mistaking the extraordinary thirst for all and any liquids "east of Suez," so graphically described by Kipling, for a desire for stimulants? I am confident that, if a vote were taken among medical officers in India as to whether alcohol was a necessary article of diet there, the result would be in the negative. I may add here that one if not two of our frontier campaigns were fought without the issue of alcohol in any shape to the British soldier. I am not a teetotaler, nor do I hold rabid views against the use of alcohol in fevers, etc., in my practice; but my experience, personal as well as otherwise, tells me that in the tropics a man does his work better without the use of stimulants.

The peace ration of the British soldier in India is a liberal one. I have lost touch with him for some time, but from conversations I have had since with his medical officers I gather that a great many of the minor ailments prevalent in the hot weather on the plains in India are due to his not being able to "work off" the amount he eats through drills and parades, etc., not being very heavy in that season.

I am of opinion that the scale of ration of a soldier should be based on the amount of work he has to do, irrespective of the climate. By all means endeavor to give him a liberal ration during a campaign, wherever it may be, but let us also reduce it at once as soon as he is under peace conditions and not doing any hard work, especially in the tropics.

H. E. BANATVALA, M. D.,
Major, Indian Medical Staff.

THE DIPHTHERIA DEATH-RATE OF NEW YORK.

1098 BUSHWICK AVENUE, BROOKLYN, *May 15, 1900.*

To the Editor of the New York Medical Journal:

SIR: Dr. Billings, while speaking of the diphtheria death-rate in New York city, introduced a table which gave the figures for only the boroughs of Manhattan and the Bronx. Unless the reader carefully examined the table, he would think that 13.1 per cent. was the mortality for New York city. Dr. Billings now says 16.6 per cent. is the correct mortality for the entire city. If he was in possession of the full returns, it would have been more ingenuous to give the correct figures at first when he was considering the mortality of the city of New York. As it is, my guess at the "probable" mortality was as near the truth as his equivocal statistics. It is about time now, more than two years after consolidation, to quit representing Manhattan and the Bronx as being the whole city. Some time ago the editor of the *Philadelphia Medical Journal* aptly said, in criticising our health board for doing this, that it would be just as fair to select some specially favored district in Manhattan having a very low death-rate and give that as representing the mortality for the entire city.

Really, city statistics have no value in determining the worth of antitoxine, unless we know exactly how many cases receive that form of treatment. This crucial test was applied during one year in the city of Trieste, when practically all the patients received antitoxine. The result was that more patients died than in any previous year. Concerning New York city, I have already shown that there was a greater decrease in the diphtheria death-rate during four non-antitoxine years than has ever been observed during four years in which antitoxine has been used. The assumption that "less cases are treated with antitoxine in Brooklyn than in any other borough" is a rather far-fetched, insinuating supposition to account for the high death-rate in Brooklyn. Dr. Billings would be puzzled to prove his statement.

J. EDWARD HERMAN, M. D.

Book Notices.

Venereal Diseases: their Complications and Sequelæ. By EDWARD L. KEYES, A. M., M. D., Late Professor of Dermatology and Genito-urinary Surgery in the Bellevue Hospital Medical College, etc., and CHARLES H. CHETWOOD, M. D., Professor of Genito-urinary Surgery in the New York Polyclinic College and Hospital, etc. Illustrated by Eight Full-page Plates in Black and Colors and One Hundred and Seven Engravings. New York: William Wood and Company, 1900. Pp. viii-3 to 356. [Price, $2.75.]

THE present work is practically a revised edition of a former work which appeared as one of Wood's Library in 1880, but the process of revision by the junior writer has so changed the older edition that we find practically a new work at hand. The chapter on the treatment of syphilis is but little changed, the views advanced by the senior author twenty years ago still remaining most popular with physicians of the day. Heroic doses of mercury were the order of the times, and salivation was considered necessary to the successful treatment of syphilis. It was a brave man who dared advocate minute doses to combat such a virulent disease, but our writer has more than reaped the fruits of his valor by being uncontroverted during the past twenty years.

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* I can recall a case in which an officer commanding a column in Burma, while counting treasure one day, came to me suddenly and said he did not know what was the matter with him, but that he could not count numbers. He was sent to England, and after eighteen months' rest returned to India to take command of his regiment. He was obliged to retire, however, six months later, as he found he could not concentrate his attention on any work. I may add that he was in the habit of taking claret or whisky with his meals, fully believing that a moderate use of stimulants was necessary in the tropics.

The book, for the sake of convenience, is divided into two parts. The first deals with acute and chronic urethritis, with their complications and sequelæ; the second takes up the subjects of chancroid and syphilis.

Our knowledge of urethral diseases has been so changed by the rapid advances made in bacteriology and therapeutics as to require a complete rewriting of the section devoted to those affections.

In the treatment of gonorrhœa the authors are quite in accord with most writers of the day in accepting urethral and intravesical irrigation as giving the most satisfactory results. A very attractive chapter of the treatise is the one describing the pathology of gonorrhœa, fully illustrated with numerous drawings in black and in colors. The rôle of gonorrhœa in men in the ætiology of the numerous complications in women classed in the field of the gynæcologist is not indorsed by the writers, for they state that "a large percentage of men in large cities have a small amount of gleet from one cause or another; yet gonorrhœa in the females (their wives) with whom they cohabit is not common—it is, indeed, exceptional."

The influence of syphilis on the nervous system and its important relation to neurological pathology have been fully recognized, and this has resulted in the happy addition of a chapter by Dr. Pearce Bailey which is most instructive and interesting. In it we find many admissions which those most versed in syphilography would be loath to make. "The most systematic and careful treatment in the early stages does not procure absolute immunity for the nervous system." We find neurologists who are still more skeptical and who advance the belief that treatment has little or no influence on the development of nervous symptoms, saying that our asylums show a long list of patients who have been "cured" after two years of careful treatment. Locomotor ataxia and general paresis may be added to the complications which may appear, even in mild cases, in which we should previous to their advent have been ready to give a clean bill of health and include them in our numerous list of complete cures. Many brilliant results, however, may be obtained in the nervous manifestations by the employment of inunctions combined with large doses of potassium iodide. This drug may be given up to two ounces and a half a day, but absolute and complete recoveries are rare and relapses are frequent.

We should hardly have devoted so much space to this work if we had not considered it worthy of our serious attention. The busy practitioner will find it a useful and convenient guide for the better understanding of the subject.

Clinical Lessons in Orthopœdic Surgery. By Royal Whitman, M. D., Instructor in Orthopædic Surgery at the College of Physicians and Surgeons of Columbia University. Edited by George Alexander Saxe, M. D., and Abraham L. Wolbarst, M. D. New York: James T. Dougherty, 1900. Pp. 5 to 187.

This little manual, designed primarily for the use of medical undergraduates, presents an outline of the main facts and principles of orthopædic surgery in a clear and easily understood form. Dr. Whitman is not only an original thinker and investigator, but a remarkably able teacher, who understands the student's needs and how he should be approached. The material has been well arranged and clearly presented by the editors, and the book has had the benefit of a revision by Dr. Whitman.

It fills a place occupied by no other book, and is superior to most students' manuals in being based on the actual teaching of a recognized authority.

Cancer et tuberculose. Hybridités tuberculo-cancéreuses. Par le Dr. Henri Claude, Ancien interne des hôpitaux de Paris. Avec 3 figures dans le texte. Paris: J.-B. Baillière et fils, 1900. Pp. 5 to 93.

In this interesting little book Dr. Claude collates abundant evidence of the error of the old belief that cancer and tuberculosis are incompatible. His cases show all varieties of intermixture of the two diseases. It is difficult to draw any general conclusions from evidence thus far at hand, because in a great many of the cases the diseases have been located in viscera and the lesions could not be followed up chronologically. The development of tuberculosis upon cancer seems to be about five times as frequent as the converse, and this may be partially explained by the theory that the cancerous depreciation of health renders the body a more favorable host for the development of tubercle bacilli. Where cancer is grafted on tuberculosis, it is most apt to appear on areas of chronic fibroid inflammation, and this might be explained on the theory of prolonged irritation, a causative factor so often assigned to cancer. The chief value of the book lies, perhaps, in its power to stimulate men to investigate and report upon the relations of the two diseases.

Home Nursing. Modern Scientific Methods for the Care of the Sick. By Eveleen Harrison. New York and London: The Macmillan Company, 1900. Pp. xi–235.

This little work, as the title would indicate, is intended to assist in the home care of the sick when the services of a trained nurse are not required. The author hardly confines herself to the limitations of the preface when she places patients suffering with typhoid fever in the hands of the unskilled, and we do not think that patients with pneumonia, with a temperature varying from 106° to 107° F., would do well under the same care. The advice given under the head of feeding, however, is both useful and instructive.

Miscellany.

Firing on the Red Cross: The Liability to Error and a Suggestion for its Prevention.—Sir William Thomson, surgeon-in-chief to the Irish Hospital, Field Force, South Africa, writing under date of April 2d to the *British Medical Journal* for May 5th, has the following remarks on the subject:

"Before I left home I had read on many occasions of the firing on hospitals in camp or on the field by the Boers. These reports gave rise to natural indignation as a piece of wanton savagery. I have no means of knowing, of course, how far these actions were deliberate. But since I have been here I have come to understand how a hospital may be shelled by an enemy in utter ignorance of what it really is. The truth is that under certain circumstances the Geneva Red Cross is useless as a protection. This morning was hot and still. There was hardly a sign of motion in the air. I said to a distinguished officer, 'If this camp were attacked by the enemy now, how could they identify your hospital?' 'Oh,' he said, 'we have our Red Cross flags up.' I asked, 'Where?' He answered, 'There, and there, and there.' 'Oh, yes,' I said, 'they are up, but who could see them at a thousand yards off?' And I pointed out that the flags were lying motionless along the flagstaff in folds. Now days like this are not uncommon in South Africa, at all events, and I therefore understand how an enemy could send shell after shell into a hospital camp under the belief that he was attacking a combatant portion of the army. The red cross is not made a sufficiently distinctive feature. On the wagons it is quite too small, and it is not recognizable at a comparatively short distance."

The author then suggests that every marquee and bell tent used for hospital purposes should have a very large red cross on the roof and sides, repeated on various aspects, and made as obvious as possible. At present the enemy only sees a group of tents which are precisely like those used by the fighting men, and if the wind is not sufficient to extend the flag there is nothing to tell him that he is firing on a crowd of sick and wounded men. In every case there ought to be a light canvas in a wire frame bearing a large red cross, which could be hoisted instead of the flag when that is useless. As to the uselessness of the flag as a sign in calm weather, Sir William Thomson is able to declare that although he knew the exact place to look for the flagposts, the flags themselves were absolutely indistinguishable at two hundred yards. He could see the thickening at the top of the poles formed by the limp folds of the flags, but nothing more. There was no red cross visible from end to end of the camp, although the flags were duly hoisted. But nowadays rifle fire is effective at more than two thousand yards, and when we come to big guns we are dealing with ranges counting miles. Even a careful search with a telescope would not, in the absence of wind, enable any one to identify the hospital. The dimensions of the Red Cross badge were decided on years ago, before the days of the small-bore rifle. They are quite inadequate now.

Æsop Up to Date.—The *Southern Clinic* for April quotes the following from the *Cambridge* (Ohio) *Sun:* There was a man who was too stingy to subscribe for his home paper, so sent his little son to a neighbor to borrow one. As the boy was going home he fell down and broke his leg. The father heard his cries, and ran out to see what was the matter, but slipped and fell, dislocating his knee and tearing the bosom out of his ten-dollar pantaloons. His wife ran to his assistance, leaving a two-year-old baby on the floor. The baby crawled out and fell down the well, and, while the mother was fishing the child out, the house caught on fire and was totally destroyed. Moral: Now is the time to subscribe.

Filtered Milk.—According to the *Canadian Journal of Medicine and Surgery* for May, citing the *Dietetic and Hygienic Gazette* of unspecified date, milk is filtered through sand in several European cities. By this process all dirt is removed, the number of bacteria is reduced one third, and the quantity of mucus and slimy matter is greatly lessened, while the loss of fat in new milk is only slight. The filter consists of large cylindrical vessels divided by horizontal perforated diaphragms into five superposed compartments, of which the middle three are filled with fine, clean, sifted sand in three sizes, the coarsest being placed in the lowest and the finest in the topmost of the three compartments. The milk enters the lowest compartment through a pipe under gravitation pressure, and after having traversed the layers of sand from below upward, is carried by an overflow to a cooler fed with ice water, whence it passes into a cistern, from which it is drawn direct into the locked cans for distribution.

An Explanation of the Onset of Labor was, according to the *Medical News*, recently given by J. Thenen at the Imperio-Royal Society of Physicians in Vienna as follows: The fœtal circulation is complete in itself. The placenta receives all of its nourishment from it, and that, too, only after the blood has passed through the embryo. The greater the embryo becomes, the less nutritious is the blood which leaves it. Accordingly, the growth of the placenta ceases after the embryo has reached a certain size (thirty-sixth week of pregnancy), and from that time on the degeneration in its structure begins, evidences of which are visible in every placenta at birth. The placental lobules begin to loosen their hold on the uterus. The specific influence which the living impregnated ovum has exercised on the female organism, and especially on the uterus, and by reason of which the uterus and ovum have lived as one organ, disappears, and the uterus resumes its normal functions and forces out the foreign body in its cavity. Thus there is no new irritation introduced. The cause of the birth is not to be looked for in uterine changes, or changes in the membranes, hæmorrhages, fever, etc., but in the cessation of the influences which pregnancy exerted upon the uterus and which for a time held in abeyance the normal uterine functions. This theory explains not only the origin of labor but the typical duration of pregnancy.

An "Official" Report by a Member of a "Learned" Profession.—The *Boston Medical and Surgical Journal* for April 26th says that the following official report on the condition of an old soldier, received at the office of the surgeon-general, is calculated to make medical men proud of the fact that they, too, belong to the learned profession of medicine. The report is as follows: "I find the present condition of his legs as follows, to wit: the Right leg commencing at the Top of foot clear up into Asending vena caba the entire venus sistem of leg is in A congested or Vericoste condition. I mean all the superficial and deeper ones are in sutch A state as would bee left from several attacts of fleebeetes as it has some 18 or 20 places where there has been ulcers and most all the surfice below the knee shoe that discolored and Indurated condition, from frequent ulsers that have come and are slow to heal and there is no time that he can dispence with bandaging the limb. Sometimes he is compelled for weeks at a time to take the bed and submit to constant treatment for that subacuit. Fleebeetes that from any slight cause does make its Apperance and likewise the Left Leg is in every resp as bad. and so he is compelled to bandage above the knee and so the same discoleration and old escars from ulceration—and on examing the Trunk the entire Venis sistem over abdoman and including the Glutiel muscles. Now his condition in my judgment of *each leg are equil to or grater* than the loss of A hand or foot." Reference to Polk's *Medical Directory*, says the *Journal*, discloses the fact that the writer of the above graduated in 1883 from the Bennett College of Eclectic Medicine and Surgery, at Chicago, Illinois.

A Bill for the Relief of Acting Assistant Surgeons in the Army.—The following is the text of House bill No. 11,077 (Senate, No. 4,323):

Whereas, during the Spanish-American war and the Philippine rebellion the inadequacy of the Medical Corps of the United States Army compelled the employment of many civilian physicians as contract surgeons, and pending hasty preparation for war ample time was not afforded to thoroughly consider the conditions that might arise under the employment of these men, whereby grave injustice has resulted to them; and

Whereas, stipulations in their contracts provided for quarters in kind, and presumably for commutation of quarters when government quarters were not furnished, as well as for pay while on leave of absence, either sick or ordinary, all of which was finally denied by a decision of the Comptroller of the Treasury Department and withheld; and

Whereas, said acting assistant surgeons are not eligible to membership in such military organizations as the Loyal Legion and Grand Army of the Republic, because they were not commissioned officers: Now, therefore, to relieve such unjust discrimination and to give a proper recognition to their patriotism, services, losses, hardships, and exposures, as well as to give the pay and emoluments due them under the provisions of their contracts, the following bill is introduced:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that on and after the passage of this act all acting assistant surgeons of the Army of the United States shall have the same rights and privileges as regards leaves of absence, quarters, and commutation, and all other rights, privileges, allowances, and emoluments (except pay, which shall be, except as otherwise stipulated, at the rate of one hundred and fifty dollars per month) as commissioned officers of the army of the grade of first lieutenant, mounted.

Sec. 2. That acting assistant surgeons of the Army of the United States who have been appointed since the first day of May, eighteen hundred and ninety-eight, who have been absent from duty by proper authority on account of sickness contracted in the service, shall be paid for the time of such absence at the rate per month specified in their contracts, and shall also be paid at such rate for any other leaves of absence granted by proper authority, not exceeding thirty days in each year of service or any fraction of a year not less than six months, if their contracts were honorably annulled before the expiration of a year's service: *provided*, that said service shall have been rendered, in whole or in part, in field, at military posts, in hospital, or on transport duty.

Sec. 3. That all acting assistant surgeons who have been appointed since the first day of May, eighteen hundred and ninety-eight, shall be entitled to file with and have paid by the Treasury Department of the United States a claim for any salary withheld by the pay department of the United States Army on account of any sick leave, or any leave granted them by proper authority, not exceeding thirty days in each year of service or fraction of not less than six months, as provided in section two of this act, and for any commutation of quarters, at the rate of twenty-four dollars per month, for such time as quarters in kind were not furnished them, and for any travel pay and allowances, as provided for in section five of this act, which may have been withheld from or not paid to them.

Sec. 4. That all payments made to acting assistant surgeons since the first day of May, eighteen hundred and ninety-eight, for time covered by sick leaves or other leaves granted by proper authority, upon the basis specified in section two of this act, and all payments made to such acting assistant surgeons for commutation of quarters, where government quarters were not furnished in kind, since the aforesaid date, at the rate of twenty-four dollars per month, and for such travel pay and allowances as are provided for by law and by section five of this act, where such payments were or shall be properly vouched, shall receive due credit and allowance in the settlement of accounts of disbursing officers of the army.

Sec. 5. That acting assistant surgeons of the Army of the United States appointed since May first, eighteen hundred and ninety-eight, shall be allowed and paid the travel pay and allowances of commissioned officers established by law, army regulations, and orders, between the respective places at which contracts were tendered them and the respective places at which contracts as such acting assistant surgeons were made with them by the United States, if the travel between these points was undertaken pursuant to instructions of competent authority, precisely as if said contracts had been signed at the respective places of abode at which said contracts were tendered them, and that all payments heretofore made by disbursing officers of the United States for such travel pay and allowances, duly vouched, shall be credited and allowed the latter in the settlement of their accounts. The making or approval of said contracts by the Surgeon-General and the affidavits of the acting assistant surgeons shall be accepted as sufficient evidence of such competent authority.

Sec. 6. That all acting assistant surgeons appointed since the first day of May, eighteen hundred and ninety-eight, who served in the military service honorably and faithfully, and who have been honorably discharged from said service by the annulment of their contracts, through no fault or misconduct, before the passage of this act, or who, being still in the service of the United States as such acting assistant surgeons at the time of the passage of this act, shall be hereafter honorably discharged by the annulment of their contracts, through no fault or misconduct of their own, before the expiration of one year's service in such capacity, shall be commissioned by the President of the United States as assistant surgeons of United States Volunteers with the rank of first lieutenant, mounted, said commission to take effect and to expire on the respective days of the termination or annulment of their contracts.

Sec. 7. That the acting assistant surgeons who shall have rendered faithful and satisfactory service with the army of the United States for a period of one year, and who shall have passed a satisfactory examination as to their physical qualifications, shall be commissioned by the President of the United States as assistant surgeons of volunteers with the rank of first lieutenant, mounted, from the date of the expiration of such year's service, subject to honorable discharge from the service whenever their services are no longer required: *provided,* that all acting assistant surgeons now or hereafter in the army of the United States who have not completed a year's service, as above provided, shall serve said year or uncompleted portion thereof, under the provisions of their respective contracts, except as the same are modified or controlled by this act, unless their contracts shall be previously annulled by competent authority.

Sec. 8. That at the end of two years' service as first lieutenants said assistant surgeons of volunteers, as provided for in the foregoing section, who have rendered faithful and satisfactory services, shall be commissioned by the President of the United States as assistant surgeons of volunteers with the rank of captain, subject to honorable discharge from the service when their services are no longer required: *provided,* that every such assistant surgeon, whether of the rank of first lieutenant or captain, shall be given, in addition to any leave to which he may be otherwise entitled at such time as his services are no longer requisite, leave of absence for thirty days, with the pay and allowances of his rank, said honorable discharge to take effect at the expiration of such leave, except as circumstances occurring before said expiration may require his further retention in the service.

Sec. 9. That all acting assistant surgeons appointed since the first day of May, eighteen hundred and ninety-eight, and those appointed after the passage of this act, shall have preference for appointment in the Medical Corps of the Army, Navy, and Marine-Hospital Service of the United States over such applicants as have not had equivalent experience in the medical service of the United States, all other things being equal.

Sec. 10. That all acting assistant surgeons appointed since the first day of May, eighteen hundred and ninety-eight, who have served honestly and faithfully in Puerto Rico, Cuba, or the Philippine Islands shall upon their final settlements be paid two months' extra pay, and all who have served honestly and faithfully within the limits of the United States in actual field, hospital, or transport duty shall be paid one month's extra pay, from any moneys in the Treasury of the United States not otherwise appropriated, and that said payment shall be allowed by the accounting officers of the Treasury upon the filing of satisfactory proof of such service.

Sec. 11. That acting assistant surgeons are and shall hereafter be entitled to admission to and to the privileges of other inmates of the National Home for Disabled Volunteer Soldiers, in any of its branches, in like manner and upon the same conditions as all other inmates of said home.

The International Medical Congress and the Paris Exposition.—We learn from Dr. Henry Barton Jacobs, of Baltimore, the secretary of the American National Committee, that word has just come from Paris that during the week of the International Medical Congress, August 2d to 9th, free admission to the Paris Exposition will be granted to members of the congress. To secure this, members will receive a special card by applying to the office of the congress, 21 rue de l'École-de-Médecine.

The New Library Building of the Medical Society of the County of Kings was dedicated on Saturday afternoon, May 19th. The president of the society, Dr. Lewis S. Pilcher, occupied the chair. Addresses were made by Dr. George M. Gould, of Philadelphia, Dr. James R. Chadwick, of Boston, and Dr. Abraham Jacobi, of New York. The building was formally transferred to the board of trustees by the chairman of the building committee, Dr. William Maddren, and speeches of acceptance were made by the chairman of the board of trustees, Dr. Frank E. West, and the president. Subsequently there was a ladies' reception.

The Commencement Exercises of the Medical College of Virginia.—These exercises were held on May 10th, Dr. C. A. L. Reed being the orator of the occasion. According to the *Richmond Dispatch* for May 11th, the address was, as those who know Dr. Reed would expect, decidedly original and fanciful. To illustrate the great mass of scientific knowledge which is in the hands of the medical profession, Dr. Reed assumed the character of a professor of medicine in a day when medical knowledge was next to nothing, and proceeded to give a lecture on the cause, prevention, and cure of diseases. This method supplied him with opportunity to recite many of the superstitious remedies used in olden times; of which he had collected an immense number; and their innate ridiculousness, as well as his humorous manner of reciting them, caused much entertainment. Dr. Reed next scored the still prevalent superstitions of popular medical belief, and traced the development of medical science through the centuries.

Mr. W. B. Saunders, the Philadelphia Publisher of Medical Books, announces that he has associated with himself in business Mr. F. L. Hopkins, the manager of his subscription department, and Mr. T. F. Dagney, the manager of his publication department, under the firm name of W. B. Saunders & Co.

The Relation of Seminal Vesiculitis to Impotence.—We have received a manuscript thus entitled, but without mention of the author's name, though a footnote states that it was read recently before the Genito-urinary Section of the New York Academy of Medicine. The author is requested to give us his name.

The Vermont State Board of Health's School of Instruction for Health Officers.—The second annual course was held in Burlington on May 22d, 23d, and 24th. It included an address by the president of the board, demonstrations in the laboratory of hygiene, and the reading of papers on topics pertinent to instruction in public hygiene.

The American Proctological Society.—At the recent meeting in Washington officers for the ensuing year were elected as follows: President, Dr. James P. Tuttle, of New York; vice-president, Dr. Thomas Charles Martin, of Cleveland; secretary, Dr. William M. Beach, of Pittsburgh; members of the executive council, Dr. S. T. Earle, Jr., of Baltimore, Dr. A. B. Cooke, of Nashville, and Dr. J. S. Pennington, of Chicago.

The Medical Society of City Hospital Alumni, St. Louis.—At the meeting of Thursday evening, May 17th, the programme included a postponed discussion of Dr. T. C. Witherspoon's paper on Drainage and Closure in Abdominal Surgery and the reading of the following papers: Report of a Case of Chorioidal Sarcoma in a Syphilitic, with Demonstration of Specimens, by Dr. M. H. Post, and Some Medical and Other Gleanings from Old-time Chronicles and Records, by Dr. George Homan.

Original Communications.

MICROBES—WHAT ARE THEY?

By HENRY G. GRAHAM, M.D.,
CHICAGO.

This paper is intended to be supplementary to an article which appeared in the *New York Medical Journal* for September 30 and October 7, 1899.

1. *Detection of Protozoa in the Body.*—The presence of the protozoa in the fluids of the body is readily ascertained by the sight alone, their form being characteristic. This is true not only of the adult, but of the elementary forms as well. Certain embryonic forms, however, so nearly resemble blood and lymph corpuscles that it may become necessary to resort to some means to distinguish one kind of corpuscle from the others.

By elementary protozoa is meant the microscopic spherules, often so minute that they approach the limits of visibility, from which spring, upon the conjugation of the adult organisms, the embryonic forms.

Two agents that may be employed to distinguish blood corpuscle, lymph corpuscle, and embryonic protozoon from each other are a saturated solution of caustic potash and pure acetic acid.

If the first is brought in contact with a blood corpuscle, the latter is at once destroyed, and the nuclei, if any are present, quickly disappear.

A lymph corpuscle will gradually and evenly expand, expel its granular contents, and again contract, the stroma remaining intact.

In case of an embryonic protozoon, the corpuscle disappears only after a time and the nuclei persist indefinitely.

When the adult protozoon has become encysted, contact with caustic potash does not destroy such form, even after many days.

Application of acetic acid to blood corpuscles shows the presence of one or more nuclei, while upon embryonic protozoa no effect is produced.

From embryonic protozoa contained in the various fluids of the body mature organisms may be developed in proper culture media. Elementary protozoa on solid culture media produce other elementary protozoa.

Mature and immature protozoa may sometimes be distinguished by the coloring matter they develop. This is usually blue, bluish green, or brown.

When found in the urine, embryonic protozoa closely resemble the pus corpuscles derived from the blood. They are distinguished by the means given above and by the use of nitric acid. The latter will show the presence of albumin if the pus corpuscles are blood corpuscles. If the pus corpuscles are elementary protozoa, the presence of albumin will not be shown.

As seen in the fluids of the body, the higher forms of the protozoa often exhibit a very slight rotary motion imparted by a filament usually carried beneath the organism.

The corpuscles derived from the blood are almost uniform; those derived from the protozoa are more variable in size.

In fluids the protozoa retain their form for many months—in fact, indefinitely—while blood corpuscles, under the same conditions, speedily disappear. In urine, actively motile protozoa have been found nine months after it had been drawn with a catheter, and been kept free from contamination.

2. *The Bacteria, Elementary Forms of Higher Organisms.*—After a protozoon has disintegrated in a fluid, upon its former site are found:

A. Minute microscopic spherules—cocci.

B. Bacilli or spirilla, or both.

C. Embryonic protozoa.

That the first are elementary forms of the protozoon, and not foreign bodies, may be shown as follows:

In case of the *Monas fluida* and of some other infusoria, the protoplasm contained within the ectosarc has floating in it one or more large nuclei. Within these bodies are other and smaller nuclei, and these last contain the minute microscopic spherules or cocci which are the ultimate forms that can be discerned when the organism disintegrates.

If caustic potash is brought in contact with *Monas fluida* the ectosarc bursts, and the protoplasm, with the large nuclei floating in it, is set free. Presently these nuclei burst, when other nuclei are set free. Finally, when these last nuclei are broken up by the continued action of the solution, great numbers of the microscopic spherules escape and are seen to be very actively motile. That this is not a mere Brownian movement is shown by the fact that when similar bodies and foreign bodies are found just within the ectosarc of a protozoon, the first exhibit this same movement while the second do not. We shall endeavor to show that these minute spherules are the familiar *Staphylococcus pyogenes albus.*

It will be observed that this body, the fourth within three concentric circles, was shielded by three successive barriers against the approaching caustic solution. This is worth remembering when we come to consider the manner in which this microscopic spherule is protected from the action of the juices of the alimentary canal. It should also be remembered that this spherule continues actively motile for a considerable period even in a saturated solution of caustic potash. Is it not possible that while in this condition it may enter a villus of the intestine unaided by any save its own motile powers?

If it were a foreign body, we should expect to find it within the outer instead of within the inner zone of the protozoon. The spherules are of uniform size and appearance and are always present. This is not true of foreign bodies.

These microscopic spherules, whether within the central nucleus or just within the ectosarc, reproduce themselves by fission. In an unfavorable environment, the nuclei of the protozoon disappear, the outer capsule persisting. This is usually in the form of a circle or oval, and incloses a teeming mass of microscopic spherules.

Such bodies are always to be found in the saliva of persons who drink water containing living protozoa. They must not be confounded with epithelial cells, some of which they closely resemble.

The following is offered as proof that the bacilli, spirilla, and beggiatoa are derived from the protozoa. The forms called cladothrix, streptothrix, leptothrix, and myconostoc may be seen to be derived from the same source.

A small quantity of filtered solution of Mellin's food is added to pure water in a vessel. *Monas fluida* is now transferred to this culture medium. This is best selected from a colony in which most of the organisms have become encysted. After twelve hours, by means of a cover slip, the surface growth is removed to a slide. Here and there some specimens of the monad will be found that had risen to the top of the fluid. The ectosarc is spread out on its surface where it will be seen to have become transformed into a mass of bacilli. These masses increase in size at the periphery until in from twenty-four to forty-eight hours they coalesce and form a pellicle on the surface of the water.

There are certain protozoa that remain immersed in the fluid in which they grow, and simply throw out diverticula, just as *Amœba princeps* extends its pseudopods. These diverticula are often quite long and sinuous. They soon become fixed, and after a time the protoplasm is transformed into a mass consisting for the most part of bacilli. A hyaline substance first intervenes, but after a time this disappears, setting the bacilli free.

In old colonies protozoa may be found teeming with a mass of bacilli and spirilla. Here, the conditions being unfavorable to the development of the embryonic protozoon, that body is transformed into a lustrous, slightly motile bacillus or spirillum, or the protoplasm of the outer zone disappears, the nucleus alone continuing under these lower forms. In one infusorian the nucleus and its modified forms may be distinguished from the rest of the body with the use of a stain. Carbol-fuchsine and methylene blue stain the spherule rod or spiral red, the surrounding protoplasm blue.

A spherule rod or spiral is always to be seen within an embryonic protozoon. If the spiral is the form present, every protozoon contains one. This would not be true if its presence were accidental.

The bacteria seen within a resting protozoon are usually all spherules, all rods, or all spirals, and they may lie dormant or be very actively motile. Such a resting form, filled with a mass of actively motile spirals, if seen in the tissues of the body, would appear as a formidable pathogenic agent. After the ectosarc has broken down and has disappeared these spherules, rods, and spirals remain in clumps and continue to multiply. This is the origin of the clusters of bacteria usually found in urine in diseased conditions. Sometimes the ectosarc still incloses them. In a few instances, the adult protozoon is found in urine just as it appears in water, except that it is non-motile.

Old colonies of *Monas fluida* will show to good advantage the microscopic spherules; *Coleps hirtus*, the lustrous rods and undulating mass of spirals.

To study the long, delicate, serpentine filaments often seen floating in water, *Paramecium aurelium* is selected.

The organism is placed between a slide and cover slip and the excess of water removed by means of bibulous paper. Evaporation is allowed to continue for some time after the infusorian has become quiescent. While under focus the cover slip is slightly displaced. If enough time was allowed for the organism to become slightly adherent to the surface of the slide and of the cover slip, the mass of its body will now be seen to be in one place, and the long, slender, delicate, almost invisible filaments, in a compact mass and lying parallel to each other, will be seen on the former site of the protozoon. These afterward develop into very long, delicate, slightly motile, serpentine filaments. These are probably identical with *Leptothrix buccalis.*

The third form, or elementary protozoon, is always found on the site where an adult organism has disintegrated.

The protozoa propagate themselves in three principal ways:

A. By division of the adult organism.

B. By bud formation and extension.

C. By development and division of their contained nuclei.

What appears as a fourth mode is only a modification of this last. Two adult protozoa move upon each other like two revolving cylinders, their surfaces in contact with each other. This rasping results in an extrusion of a portion of the contents of each protozoon, and this consists in embryonic protozoa floating in a jellylike mass of protoplasm, the whole resembling the spawn of fishes. These embryonic protozoa are bacilli. Each bacillus contains either one or two nuclei, and these are imbedded in protoplasm, the whole being surrounded by a capsule. These bacilli are all of uniform size, and are often very numerous. They are quite lustrous and present the appearance of newly formed protoplasm. In size and form they resemble the colon bacillus, the bacillus of typhoid fever, the *Bacillus lanceolatus*, etc., according to the kind of protozoon and the conditions under which it is grown.

Two organisms will come together and may be seen by the hour moving upon each other, the surface of one gliding upon the surface of the other, the jellylike mass described above collecting round the circle within which the organisms move. After the newly formed ring of protoplasm, with its contained embryos, has been greatly augmented in this manner, one protozoon escapes from the inner ring, the other usually continuing to move round and round within the now constantly narrowing circle. Finally, the other protozoon escapes, and the site it occupied is speedily obliterated. If the culture medium continues favorable, the young embryos develop into adult protozoa, but if placed upon solid culture media they propagate themselves, producing other bacilli. These in the first few generations retain the capsule, but in later cultures the capsule disappears.

When a protozoon disintegrates, the bacilli derived from the ectosarc do not form spores, while those derived from the endosarc are spore-forming bacilli. Both kinds propagate themselves indefinitely.

In some of the protozoa the spore-forming bacilli develop into long, delicate hyphæ, having two parallel walls inclosing a lumen filled with spores. If the conditions are unfavorable, these spores bud into hyphæ, otherwise they form other protozoa.

The streptococcus derived from various protozoa may be regarded as a diminutive hypha in which the spores are large and prominent and its walls rudimentary.

A hypha may contain terminal or intercalated heterocysts, or both. Within these and within the walls of the hypha the protozoa develop. If the conditions are less favorable, from the nuclei within the heterocysts other hyphæ are developed. The walls of a hypha may be regarded as a very much elongated ectosarc, its lumen as an attenuated endosarc. Such a protozoa may be looked upon as a dual organism—at one time more closely approaching the animal, at another time the vegetable kingdom. Such an organism would correspond to the protista of Haeckel. It is possible it was upon the study of some such forms that Zoph established his theory of the pleomorphism of bacteria.

We have now seen that where an adult protozoon has disintegrated we may find microscopic spherules, bacilli, leptothrix, and elementary protozoa. This very much simplifies the study of bacteriology, and, when we remove from the crypt of an enlarged tonsil all these forms, we know that the inflammation depends not necessarily on the presence of a variety of organisms, but of only one kind of organism that of its own inherent motile powers had entered the crypt from which it was subsequently removed.

3. *Resistance of the Protozoa to Destructive Agents.*—A saturated solution of potassium hydrate and pure sulphuric acid will reduce the protozoa to more elementary forms, but will not destroy the vitality of these forms except after prolonged contact.

When a fluid in which a protozoon exists evaporates, the protoplasm forming its body mass escapes through a rent in the ectosarc in the form of minute droplets. These were probably the "minute drops of oil" of Linnæus and of Dutrochet, from which they produced living protozoa by simply passing a current of electricity through the fluid containing them. These minute bodies are frequently found in the urine of persons suffering from disease. They may be found in the fæces, in the pus from suppurating cavities, in the blood, in the saliva, and in the secretions from the pituitary membrane and bronchial tubes.

Boiled in a hermetically sealed flask twenty minutes each day, for three successive days, after two months, the flask having remained hermetically sealed, great numbers of the elementary and embryonic forms of *Monas fluida* will be found actively motile. Most of them will be free, but a few will still be seen within the resting forms, the ectosarc of the latter in a few instances having remained intact. This experiment shows the *Monas fluida* to be a facultative anaerobe.

The same organism sealed up in a glass tube will survive for eighty-three days, and probably indefinitely, possibly for years.

After remaining for two weeks at room temperature—about 70° F.—In a dry state, not only will the spores retain their vitality, but the ectosarc in a few instances will remain intact.

On April 5, 1899, a woman died whose urine, which was drawn with a catheter, contained great numbers of elementary and embryonic protozoa. At this writing (March 10, 1900) many actively motile but small protozoa are present in the urine, which all these months has been kept free from contamination. So long as they continue in this medium they will remain very small and stunted, for, like the northern pine, the more unfavorable the conditions under which they grow, the more they are dwarfed.

In general it may be said of the protozoa that the higher the temperature of the medium in which they exist—up to a certain point—and the more dwarfed their size, the greater is their activity. This is true as well of their elementary and embryonic forms.

In normal urine, at room temperature, under a bell jar, certain of the protozoa will develop typical chains of the streptococcus as well as pus corpuscles. After a time the urine becomes strongly alkaline, the corpuscles break down, forming a viscid mass which pours like pus to which an alkali has been added. These chains are the same in appearance and stain the same as the *Streptococcus pyogenes.*

From such a culture adult protozoa may be grown by transplantation to proper culture media.

If certain mineral substances are added to a culture of protozoa, the latter will become encysted and will be transformed into siliceous-like bodies that form rosettes of crystalline needles. They impart the same sensation as of sand pressed between a slide and cover slip. It is possible this will explain the cause of some forms of inflammatory rheumatism.

4. *Virulency.*—Virulency is simply an adaptation of the infecting organism to a new environment. If the new environment is similar to the old, virulency was probably acquired in some previous host. To this class of infecting organisms belong all those that produce disease by direct transmission, as in blood poisoning following the infection of an external wound, or the experimental infectious diseases of laboratory animals where the infection is conveyed by means of a hypodermic syringe. Even here the infecting organism is probably often an elementary protozoon that has been transmitted from host to host, just as the protozoa in their most elementary form may be transplanted many times and propagated on solid culture media for many generations.

If the new environment is unlike the old, virulency is acquired in the immediate host. In other words, the infecting organism must adapt itself to new conditions before it can propagate itself and so produce disease. To this class of organisms probably belong those that produce the various acute infectious diseases. Herein lies the difference between the infectious diseases found in Nature and those experimental diseases produced in laboratory animals by the use of the hypodermic syringe. The former, or at least most of them, can not be produced by the methods in vogue in the bacteriological laboratory, while the latter are atypical, and their counterpart is not found in Nature.

The contagium, for the most part, finds its way to the blood current through the natural channels, and it is a mistake to imagine that insects—*e. g.*, the mosquito in malaria—are common carriers of disease. The common carriers of the natural infectious diseases are the various protozoa, and the form in which these exist in the body is that known as the bacteria. Eosinophiles and their congeners are the protozoa in their embryonic form. In normoblasts and in megaloblasts the protozoon is imbedded in a red blood corpuscle. Normoblasts, megaloblasts, giant cells, and elastic fibres, such as are seen in tuberculosis, may be found in old colonies of the protozoa.

That the protozoa are for the most part non-virulent is evidenced by the fact that their presence does not give rise, as a rule, to any disturbance of the vital processes of the host. That they may become virulent, however, is further evidenced by the fact that exceptionally living protozoa are found in the tissues of dead or dying water organisms. These had escaped into the tissues from the alimentary canal of the host and had adapted themselves to their new environment. Their presence in large numbers is incompatible with the continued integrity of the host. In the human being the presence of large numbers of protozoa in a tissue results in inflammation and subsequent sloughing of the part affected, for under the most favorable conditions certain of the protozoa are great pus producers.

When a protozoon enters the alimentary tract of its host, whether it will become virulent or not will depend upon two things:

1. Whether it will by its own motile powers penetrate the walls of the alimentary tract, and so reach tissue beyond.

2. Whether it will adapt itself to a new and ever-changing environment that gradually becomes more and more toxic for the host.

The development of a non-pathogenic into a pathogenic organism is well illustrated by the presence in the tissues of the body of a protozoon that eventually produces malarial infection. Its first appearance gives rise, perhaps, to no new symptoms that would arouse suspicion that an infecting organism is present in the blood or lymph. The probability is that it can be eliminated before it can give rise to any marked symptoms of infection. If, however, it is not thrown off, the protozoon will adapt itself to its new environment, and its continued presence will eventually bring on a pronounced chill. This is probably caused by the bursting of the ectosarc of the protozoa and the setting free in the blood current of the nuclear bodies, together with the fluid in which they float. It is probably at this time that the most elementary bodies of the protozoon most vigorously attack the red blood corpuscles and by means of their own motile powers penetrate to their interior.

Even now the protozoon is usually thrown off and the malarial poison successfully combated by the administration of quinine, iron, and arsenic, but it is doubtful if the most elementary form of the organism is ever completely eliminated. These latter are liable to accumulate in various tissues, especially the mucous membranes of the respiratory and genito-urinary tracts, and, as a lower temperature than that of the body is more favorable to their development, it is readily seen why catching cold gives such an impetus to their growth. These low forms of not only the malarial parasite, but those of other protozoa, collect in the same tissues and for the same reason—viz., that of lowered temperature—and they continue to thrive here despite the most persistent efforts on the part of the rhinologist or gynæcologist to dislodge them. Thus we can see why a chronic amœbic dysentery can not be cured and is so difficult to control, and why most operators remove the appendix vermiformis to prevent a recurrence of the trouble. It is probably for the same reason that cancer and tuberculosis are so difficult to eradicate.

If in malaria the organism grows more and more virulent, a simple malarial infection becomes malignant, and symptoms of a general septicæmia may be followed by death.

This most elementary form of the protozoon, which is an exceedingly active little body, and which invades the red blood corpuscles in such great numbers, is probably identical with the *Staphylococcus pyogenes albus.* If grown upon solid artificial culture media it exactly resembles that body in appearance and staining properties.

Such a body injected into a laboratory animal will produce death in less than twenty-four hours. The dead animal will present the appearance of having died of a general septicæmia, and the organism can be recovered from its tissues (post mortem) and grown upon solid artificial culture media.

I am indebted to Dr. Rare, of the Columbus Memorial Laboratory, for the information that this little elementary protozoon is commonly regarded as a pigment granule.

5. *The Protozoa as Morbific Agents.*—Elementary forms of protozoa are probably always to be found in small numbers in the blood, lymph, and urine in health. Their presence in great numbers, however, is always indicative of a diseased condition, either general or local. Embryonic and higher forms are not found in the urine in health. These are found, however, in the following diseases: Measles, mumps, scarlet fever, diphtheria, pneumonia, typhoid fever, cerebro-spinal meningitis, purpura hæmorrhagica, malaria, ascites, especially of children, general dropsies, chronic nasal catarrh, follicular tonsillitis, bronchitis, cancer, tuberculosis, etc. They are found in metastatic abscesses arising from these acute infectious diseases, and in suppurating foci everywhere of "spontaneous" origin, for some of these "innocent" protozoa, under the most favorable conditions, are great pus producers.

We may expect to find these higher forms in any acute infectious disease in which bacteria are present, except where such disease is the result of direct inoculation, or where the disease is experimental, as in laboratory animals, where the infection is conveyed by means of a hypodermic syringe. These higher forms may be found in the discharge from a diseased endometrium, in the secundines after an abortion, in pus pockets everywhere, as in pyosalpinx, and they are especially abundant in tuberculous abscesses.

Of all the varieties of protozoa—and this is meant to include the monera, rhizopoda, infusoria, and sporozoa—collected in the course of two years from hydrant water and grown artificially, only one has been found that possesses the peculiar staining properties of the tubercle bacillus. This organism does not stain at all with the use of the ordinary aniline dyes; but, if stained by the Ziehl-Neelsen method, the protozoon stains red and the field blue. This is probably the form in which the tubercle bacillus exists in the outside world. Even this organism does not possess this peculiar staining property throughout its entire life cycle. The bacilli derived from it do not always stain red, and in some cases of pneumonia there appear to be transitional forms that possess this staining property only to a slight degree. It is the embryonic form of this organism that is best fitted to show that a certain bacillus is really a product of the organism itself and not a foreign body. This bacillus stains red and the rest of the body stains blue. In an unfavorable culture medium that portion of the embryonic protozoon that stains blue disappears, leaving the red bacillus free. This is probably the process of infection of the lungs in the majority of cases of pulmonary tuberculosis. It may explain the manner of origin of miliary tuberculosis and why certain cases of pneumonia, measles, and pertussis result in tuberculous infection. The infecting organism does not need to be inhaled from the outside world, but is already present.

The pneumococcus of Fränkel is an elementary protozoon in which the capsule represents the ectosarc, the nuclear body or bodies with the surrounding protoplasm the endosarc of the mature organism. On a solid culture medium this capsule will after a time disappear, leaving only the nuclear bodies to propagate themselves. These represent the most elementary form of the protozoon.

Among the protozoa, the adult organisms propagate themselves by division of the body mass. The same is true of all the forms derived from them—the bacilli, spirilla, and the minute spherical bodies that constitute their most elementary form. The multiplication of each form continues so long as the culture medium remains unchanged.

In general, it may be said of the bacteria that the spiral is the product of an earlier form, the bacillus and leptothrix, the later products of a more mature form of the protozoon.

The bacteria, then, are low forms of life derived from the protozoa.

264 South Halsted Street.

"ÆSTIVO-AUTUMNAL FEVER" IN NEW ORLEANS, SUMMER AND AUTUMN, 1899.

By H. A. VEAZIE, M. D.,
NEW ORLEANS.

(*Continued from page 769.*)

Treatment.—Quinine in some form is the "sheet anchor." It must be absorbed. I have given medicine in capsules and pills and have seen them pass through the system undissolved; sometimes the vital forces are so low that it is not absorbed in any way. If the quinine does not get into the blood it does no good. Intravenous injection has been used in Italy, and Thayer, of Baltimore, says he has employed it with good effect. Hypodermically used, it is not quite so heroic, and has given excellent results; cases of æstivo-autumnal fever, complicated with coma, black vomit, and suppression of urine, getting well most wonderfully from a good hypodermic of a soluble salt of quinine in this city this year (Dr. G. S. Bel's cases). Otherwise the patients must be treated according to general principles, especially being careful that the diet is not irritating. It is well if they have no, or very little, food for several hours, and that liquid, and patients must be kept in bed for several days until they are positively convalescent. Various complications must be met with appropriate remedies. Outside of quinine, the treatment should be expectant and patients closely watched. During an epidemic, or rather while the disease is prevalent, small doses of quinine every day would help to prevent persons getting the disease, and those liable to malaria should avoid the night air, keep their systems in order, get a proper amount of sleep, drink wholesome water, and sleep under a good mosquito bar.

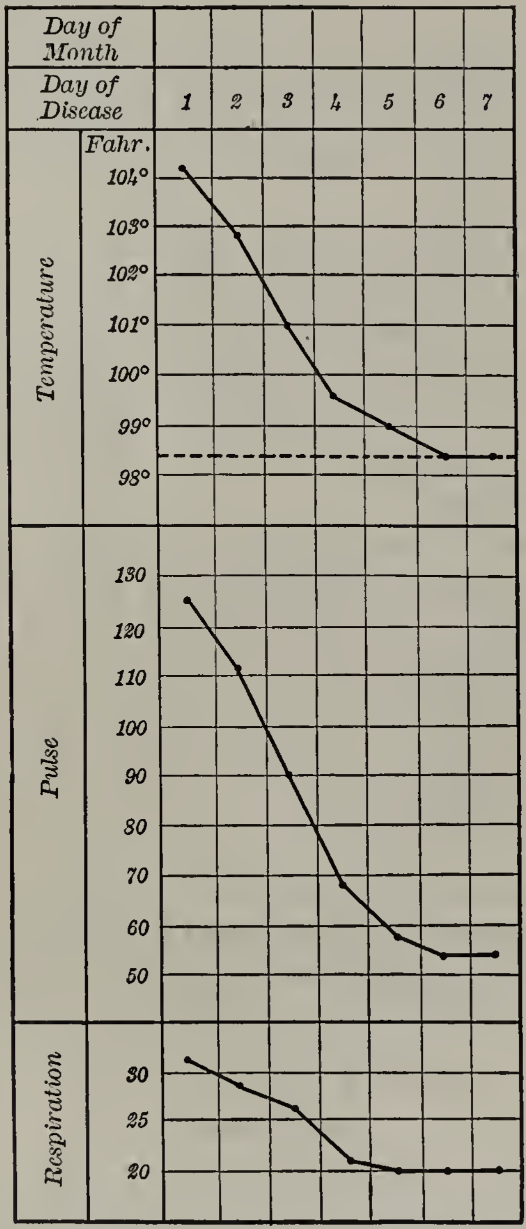

CHART A.—Composite chart of nine cases of recovery from æstivo-autumnal fever. (Treated with quinine.)

I have now gone over the subject, I hope impartially; *not as completely as I should like*, but sufficiently to have quite a decided influence on our opinions confirmatory of the nature of this fever. My reasons for thinking and asserting that this fever is malarial are the following:

The blood, after careful examination, shows the æstivo-autumnal parasite. In nearly every instance on first examination, even when quinine has been given, often after quinine, the corpuscles containing parasites are shrunken, crenated, and brassy, as observed in several cases. Possibly due to death of the parasite (?).

If not found at first, it can be detected on repeated examinations. It has been found in a very large number of cases in the Charity Hospital and outside; in fact, I can say, in every case where it has been looked for that I know of. After death it has been found in the blood and various organs of the body. There has been no true culture of the *Bacillus icteroides* made as yet. It has been tried, but so far none have been proved. All the post-mortems I know of are not distinctive of yellow fever; so far as I can learn, they are indicative of malaria and other diseases.

The blood of healthy persons has been examined—a hundred and thirteen in number—and found free of parasites in every instance except eleven, where it was found, on tracing the history of the individuals, that six had an indisposition and five took sick afterward with fever, showing that it is not peculiar to our citizens to have malarial parasites in their blood all the time. The highest authorities all over the world assert that this parasite is the cause of a fever similar to the one we now have in this city—men who have made malaria a life study; such men as Laveran, Grassi, and Feletti, in Sicily; Antolisei, Canalis, Bastinanelli, Bignamini, Patella, Marchiafava, Celli, Terni, and Giardina, in Italy; Mannaberg, in Austria; Kamen, in Germany; Sakharov, Titov, Romanovsky, Korolko, and Gotye, in Russia; Romenchamps, of Holland; Jancsó and Rosenberger, of Hungary; Osler, Dock, Koplik, Hewitson, and Thayer, of the United States.*

To find the parasite in the blood is conclusive evidence of malaria. After finding it in the blood, and in hundreds of other cases, quinine has been given, and the patients have rapidly recovered. Cases complicated with black vomit, suppression of urine, coma, and convulsions have been rapidly cured with hypodermic injections of quinine, which would not likely have occurred if they had been yellow fever. The reverse would probably have been the case.

Persons who have had yellow fever in former great epidemics get this fever. Persons have several attacks, and if quinine is suspended too soon a relapse occurs if convalescence is not perfect. After recovery, the patient's blood shows great destruction of blood-corpuscles; not so in yellow fever.

The spread of the disease is not like that of yellow fever. This year the fever began among our own residents, people born here; yellow fever is always imported (see *United States Marine-Hospital Reports*).

In this disease (malaria) one or, in rare cases, two persons are taken sick at the same time in the same house. I know of no instance where five or six are all taken at once; usually one after another at intervals of days or weeks. In yellow-fever epidemics (1878 and 1897) you would find whole families down, from the cook to the father, mother, and children. In 1878, here and in Grenada, Mississippi, and other places, I saw yellow fever invade a household, and in a few hours nearly all non-immunes would be ill, and in a few days there would be perhaps none left of what was but a few days before a happy home circle. A few cases of yellow fever occur in a town, and in a short while nearly all non-immunes are sick, and they cry out for help, as there are so many sick they can not be attended to by the few that are well, as in Grenada, Mississippi, in 1878.

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* W. S. Thayer's *Lectures on Malarial Fever*, p. 15.

This disease (autumnal fever) is a pseudo-epidemic fever—that is, it does not prevail as a true epidemic. It seems to spare many, whereas yellow fever attacks nearly all non-immunes.

This disease seems to prefer persons who are not exactly well, and can not resist or destroy the parasite. Yellow fever attacks the strong and healthy, and especially foreigners. From a clinical, microscopical, bacteriological, and common-sense view, I must believe this disease this year to be æstivo-autumnal fever.

The following records are from Dr. G. S. Bel's cases:

M. G., a boy, sixteen years old, born in Bayou La Fourche, Louisiana. Family history very good; previous history good. Patient came to New Orleans about two weeks before taking sick, but had been feeling badly while in La Fourche, complaining of pains throughout the body, chilly sensations, impaired appetite, tired feelings, etc. On Wednesday, October 18th, he was taken sick with high fever, headache, *no chills*, vomiting, pains all over the body. The same symptoms continued the next day (Thursday, October 19, 1899).

I was called to see the patient for the first time on Friday evening and found the following condition: The patient was very nervous, restless, and suffering with intense headache; eyes slightly jaundiced; stasis, but not very marked; gums slightly soft. He had a profuse diarrhœa. It was stated that the patient had twenty actions from the bowels; they were watery, but of natural color. Temperature, 104° F.; pulse, 120; respiration, 40. It was thought by the nurse and a medical student who was present that the patient had pneumonia.

I made a careful examination and found the following condition: Heart normal, lungs normal, liver slightly enlarged, spleen distinctly enlarged and tender on palpation. On examination of the blood I found plasmodium. Urine contained two per cent. albumin, hyaline casts, bile, no granular casts.

Ordered five grains of bisulphate of quinine in wafers every three hours.

On Saturday, October 21st (fourth day of illness) vomiting had ceased. Temperature, 102.4° F.; pulse, 112; respiration, 32. Other symptoms were about the same. Plasmodium was still found in the blood. Urine contained two per cent. of albumin, hyaline casts, bile.

Treatment.—Five grains of bisulphate of quinine was continued every three hours. No other treatment.

On Sunday, October 22d (fifth day of illness), temperature came down to 101° F.; pulse, 112; respiration, 28. The patient was vomiting *black*. He had black vomit three times while I was at his bedside. The blood still contained a few plasmodia. When I saw that his stomach was so irritable and that he was vomiting black, I stopped the quinine by the mouth and immediately gave the bisulphate of quinine in five-grain doses hypodermically every three hours, and stopped all nourishment. I saw the patient twelve hours afterward and his stomach was less irritable; he had ceased vomiting. He felt much better.

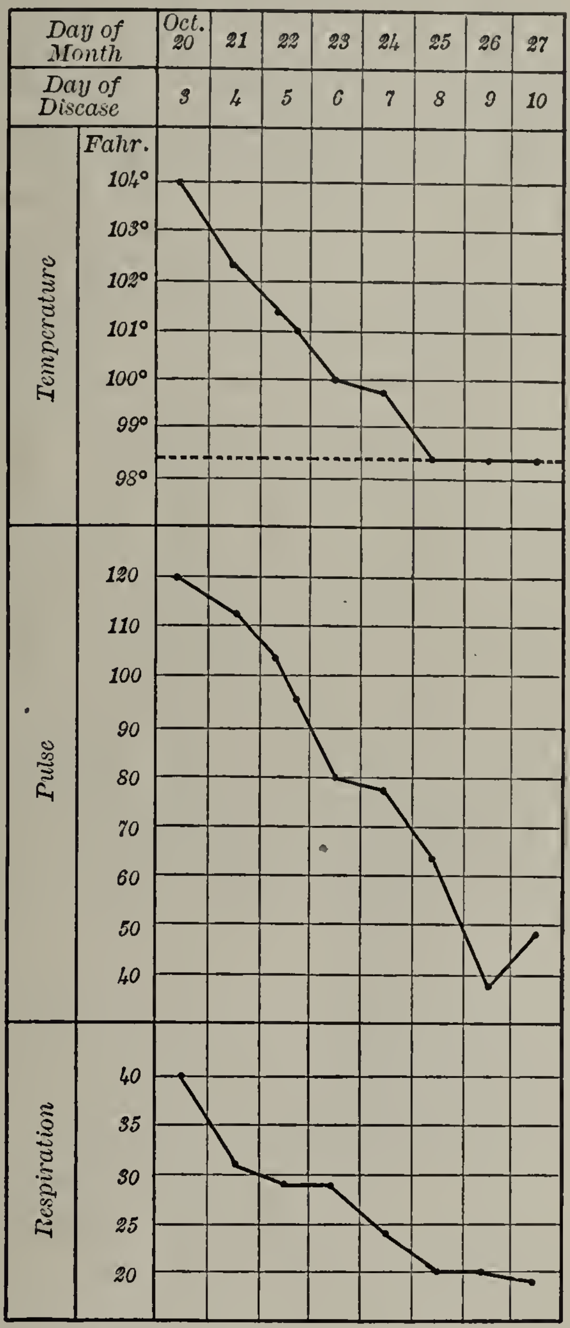

Chart B.—M. G. Malarial fever in boy sixteen years old. Black vomit occurred on the fifth day of the disease, October 22d. Recovery. (Dr. G. S. Bel.)

On Monday, October 23d (sixth day of illness), the patient was much better. Temperature, 100° F.; pulse, 80; respiration, 28. Stomach was in good condition. The patient retained five grains of bisulphate of quinine every three hours; also retained small quantities of milk. Jaundice did not increase.

On Tuesday, October 24th (seventh day of illness), the patient was much better, the stomach in good condition. Temperature, 100° F.; pulse, 78; respiration, 24.

On Wednesday, October 25th (eighth day of illness) the temperature was normal, 98.4° F.; pulse, 60; respiration, 20.

On Thursday, October 26th (ninth day of illness), temperature, 98.4° F.; pulse, 48; respiration, 20.

On October 27th (tenth day of illness), temperature, 98.4° F.; pulse, 48; respiration, 18. Urine normal.

S. A., a woman, forty-four years old; born in Ohio. Family history very good; previous history good.

On September 13th she was taken sick with a violent headache, chilly sensations, but no fever. Pulse, 52.

On September 14th (second day of illness) she had several mild chills; severe headache; constant vomiting. Temperature, 99° F.; pulse, 52; respiration, 20. Blood contained plasmodium. Urine normal. Heart normal. Lungs normal. Marked tenderness over stomach, and especially over the region of the spleen.

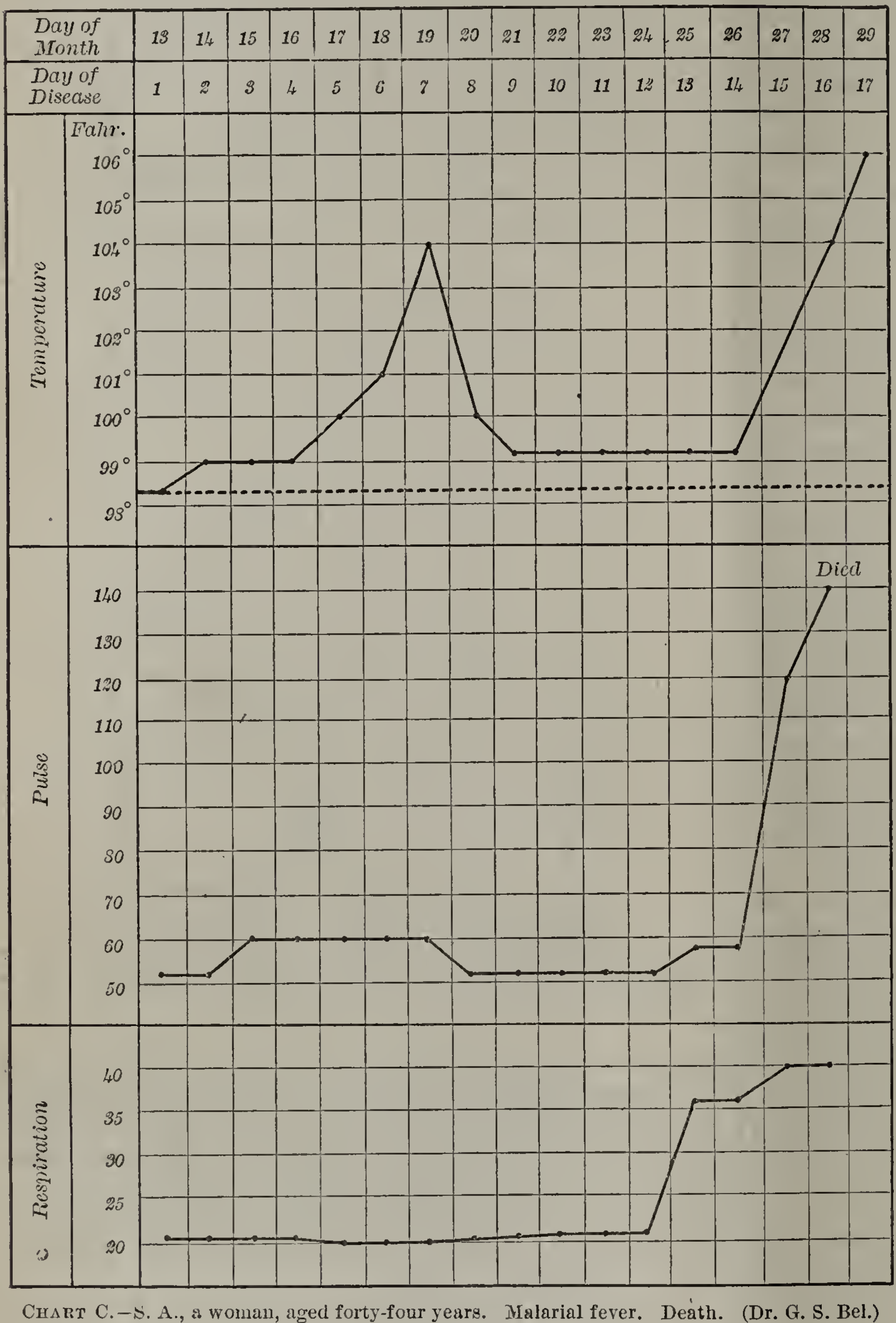

Chart C.—S. A., a woman, aged forty-four years. Malarial fever. Death. (Dr. G. S. Bel.)

On September 15th (third day of illness), a violent headache, backache, nausea, but no vomiting; skin clear, eyes bright and clear. No stasis; gums hard and firm.

Blood contained plasmodium. Urine normal, but highly acid. Temperature, 99° F.; pulse, 60; respiration, 20.

Ordered three grains of sulphate of quinine every three hours.

On September 16th (fourth day of illness) the headache became worse; the pain was intense. Persistent vomiting. Bowels open without purgative. Blood contained plasmodium. Urine normal.

On September 17th (fifth day of illness) marked vomiting. Headache. Pain over entire abdomen, especially over the stomach and spleen. The patient presented the most intense symptoms of profound internal congestion. Temperature, 100° F.; pulse, 60; respiration, 20. Blood contained large quantities of malarial plasmodium. Urine normal, highly acid.

Ordered twenty grains of bisulphate of quinine by enema every four hours.

On September 18th (sixth day of illness) same condition as the day before. Temperature, 101° F.; pulse, 60; respiration, 20.

Ordered twenty grains of bisulphate of quinine by enema every four hours.

On September 19th (seventh day of illness) the patient was a great deal worse. Temperature, 104° F.; pulse, 60; respiration, 20. No stasis. Hard gums. Urine contained twelve per cent. of albumin, hyaline casts, granular and finely granular casts, bile, etc. The casts were bile-stained. Marked congestion of the stomach, spleen, and liver. The spleen was distinctly enlarged and very tender.

Ordered five grains of bisulphate of quinine hypodermically every three hours. Blood still contained the plasmodium.

On September 20th (eighth day of illness) the same symptoms. Plasmodium in the blood. Urine the same. Temperature, 100° F.; pulse, 52; respiration, 20.

On September 21st (ninth day of illness) no vomiting. Pains all gone except tenderness over the abdomen, especially stomach and spleen. Skin and eyes perfectly clear. No jaundice. Hard and firm gums. Blood still contained the plasmodium and urine the same. Temperature, 99.4° F.; pulse, 52; respiration, 20.

On September 22d (tenth day of illness) the same condition as the day previous. Same treatment.

On September 23d (eleventh day of illness) same symptoms.

On September 24th (twelfth day of illness) the patient went into a comatose condition and remained so for three hours. Hot applications were used and free sweating was produced. Hypodermic of digitalin was given. The patient regained consciousness and was perfectly sensible. I continued the hypodermic of bisulphate of quinine every three hours. Plasmodium was still present in the blood.

On September 25th (thirteenth day of illness) the same symptoms. Temperature, 99.4° F.; pulse, 56; respiration, 36. Lungs and heart normal. Same symptoms continued until the patient died.

On September 28, 1899, the patient was comatose forty-eight hours before death. Plasmodium was found in the blood up to death. There never was any jaundice or capillary stasis. Gums hard.

J. R., a man, thirty-three years old; born in New Orleans; occupation, clerk. Family history good. Previous history good. Patient had yellow fever in 1878.

On Friday, September 22, 1899, he was taken suddenly sick with a violent chill, followed by high fever, headache, backache, pains all over the body, marked vomiting. Temperature, 105° F.; pulse, 120; respiration, 38. The temperature was taken every two hours and continued at 105° all day. He complained of marked burning of the eyes.

Ordered five grains of sulphate of quinine every three hours.

On September 23d (second day of illness) same symptoms as the day previous, headache, backache, etc. Vomiting not so marked. I saw the patient at 10 A. M. Temperature was 105° F.; pulse, 120; respirations, 38. He was somewhat delirious. Gums soft. Capillary stasis. Heart was normal. Lungs normal. Tenderness over liver and spleen; spleen enlarged. Blood contained large quantities of plasmodium. Urine was normal. Eyes slightly yellow. About an hour and a half after leaving my patient I was telephoned for to come immediately, as he was worse and was vomiting blood. Arriving at the house, I found the patient very much worried and vomiting blood; it was bright red in color.

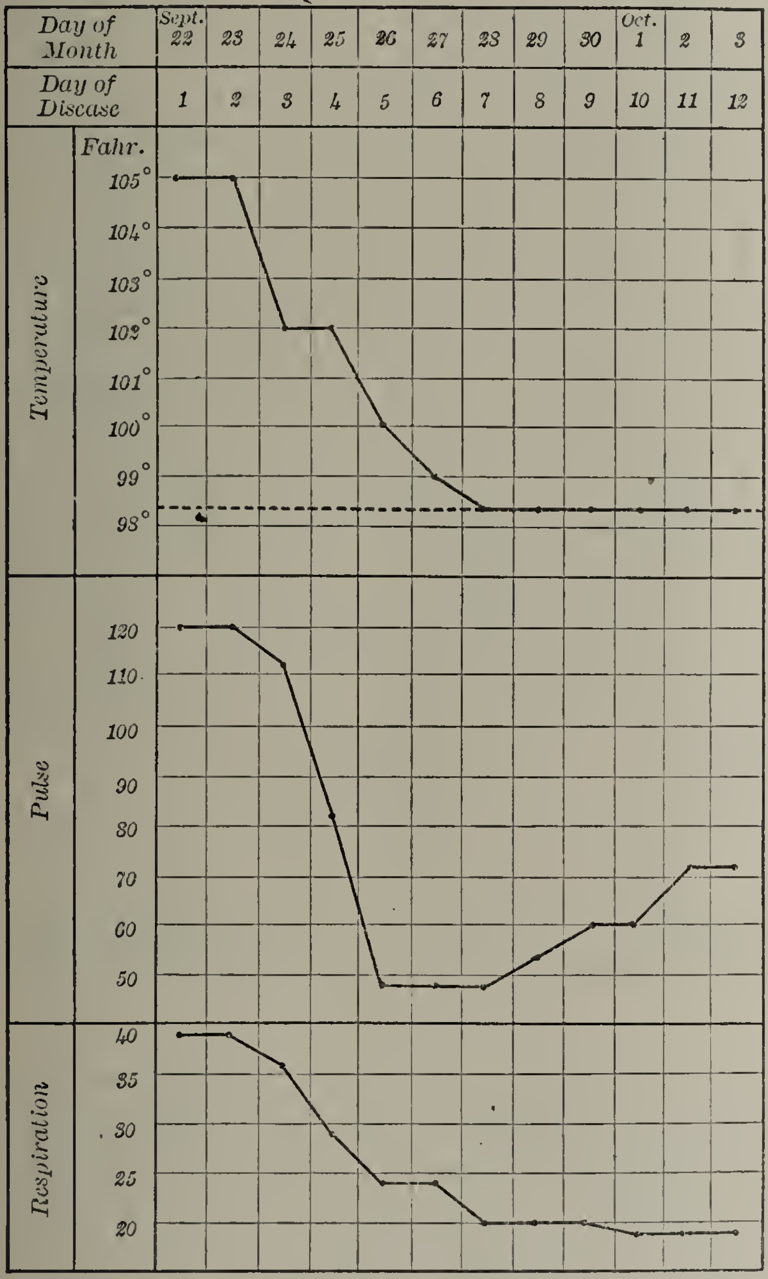

CHART D.—J. R., a man, thirty-three years of age. Recovery. (Dr. G. A. Bel.)

I gave the bisulphate of quinine in five-grain doses hypodermically every three hours.

On September 24th (third day of illness) the patient was much better. Pains disappeared; no vomiting; gums soft, but no bleeding. Capillary stasis; eyes very bloodshot. Temperature, 102° F.; pulse, 112; respiration, 36. Skin clear; no jaundice.

On September 25th (fourth day of illness) no pains; gums soft; stasis, etc. Temperature, 102° F.; pulse, 82; respiration, 28. Blood still contained a few plasmodia. Urine contained eight per cent. of albumin, hyaline casts, granular and finely granular casts, bile, and the casts were bile-stained. The patient felt much better.

Ordered five grains of quinine every three hours.

On September 26th (fifth day of illness) the patient was much better, free from all pain except tenderness over the enlarged spleen. Temperature, 100° F.; pulse, 48; respiration, 24.

On September 27th (sixth day of illness) patient still improving. Temperature, 99° F.; pulse, 48; respiration, 24. No plasmodia in the blood.

On September 28th (seventh day of illness), temperature, 98° F.; pulse, 48; respiration, 28. No plasmodia.

On September 29th (eighth day of illness), temperature, 98° F.; pulse, 54; respiration, 20. Stopped giving quinine.

On September 30th (ninth day of illness), temperature, 98° F.; pulse, 60; respiration, 20.

A man, thirty-seven years old; born in New Orleans; occupation, laborer. Family history good; previous history good. Had yellow fever in 1878. The patient stated he had mild chills, followed by light fever for several days. He would feel well one day, and then the next day he would have chills, followed by fever. The bowels would become loose on the days he had fever and chills.

On September 26th he was taken with a violent chill, which lasted some time, followed by fever, headache, backache, loose bowels, and vomiting. Temperature, 105.2° F.; pulse, 140; respiration, 38. Face congested; eyes injected. Blood contained plasmodium. Heart was normal. Lungs normal. Liver enlarged. *Spleen very large and tender.*

Ordered five grains of quinine every three hours.

On September 27th (second day of illness) symptoms about the same as the day before, except that the eyeballs were very yellow and skin much jaundiced. Blood still contained plasmodium. Urine contained bile; seven per cent. albumin; hyaline casts; granular and finely granular casts. The casts were bile-stained. Temperature, 104° F.; pulse, 120; respiration, 36.

On September 28, 1899 (third day of illness), the patient was much better. Temperature, 99.8° F.; pulse, 60; respiration, 20. Could easily feel the spleen, which was very painful.

On September 29th (fourth day of illness), temperature, normal; pulse, 48; respiration, 18. Jaundice still very pronounced.

This case continued to improve until discharged perfectly well.

Treatment: Five grains of sulphate of quinine every three hours.

G. M., a lad, eighteen years old, born in New Orleans. Family history good; previous history good; had dysentery six months ago. He is a schoolboy.

Taken sick Tuesday, September 12th, with a chill, followed by high fever, headache, backache, burning sensation about the eyes, vomiting, stasis. Temperature, 104° F.; pulse, 120; respiration, 28.

Physical Examination.—Heart normal. Lungs normal. Liver normal. Tenderness over the region of the

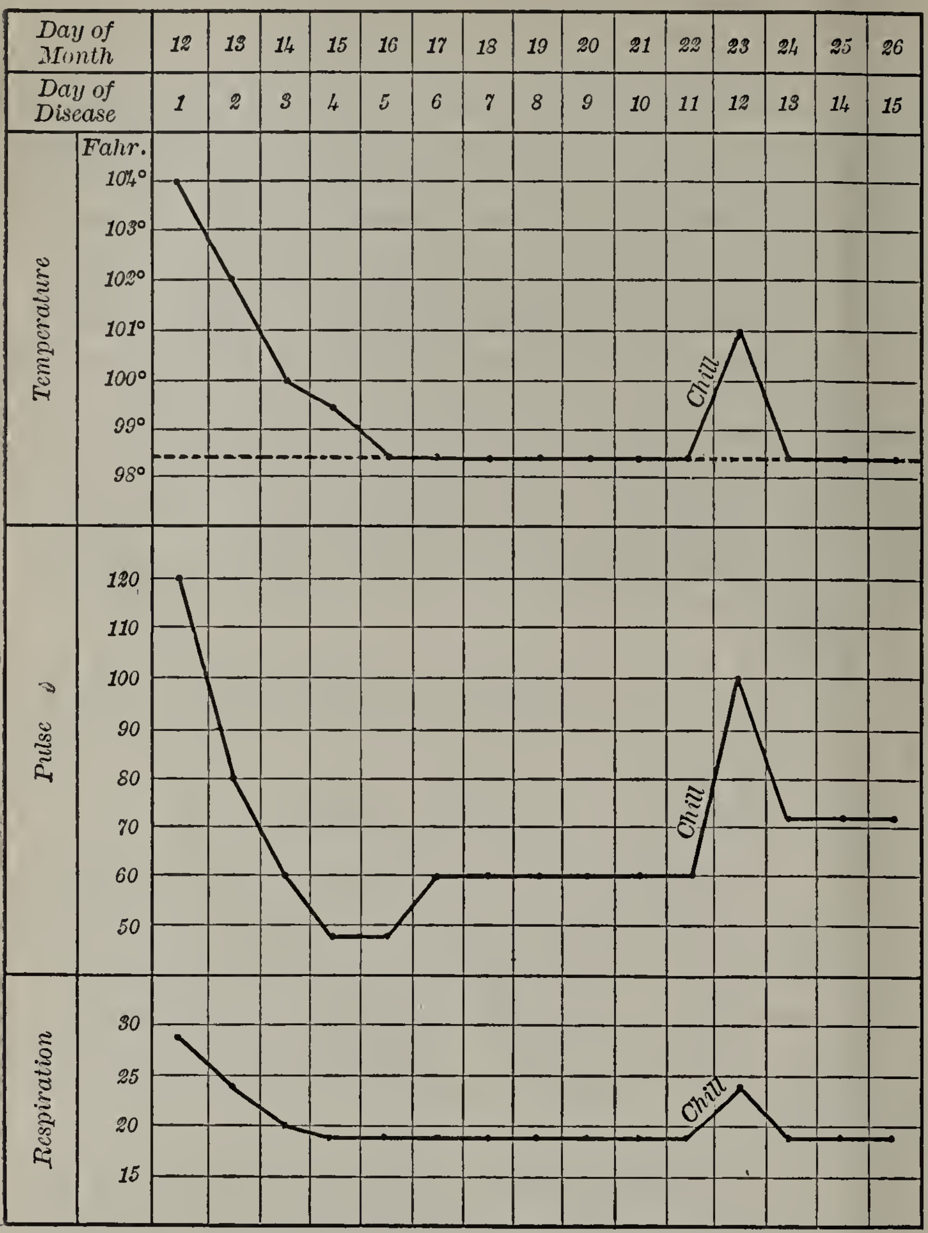

CHART E.—G. M., a schoolboy, eighteen years old. The chart shows recurrence of the paroxysm on the twelfth day. (Dr. G. S. Bel.)

spleen. Plasmodium found in the blood. Urine normal.

Ordered five grains of sulphate of quinine every three hours.

On September 13th (second day of illness) same symptoms as day previous, but not so marked, the headache especially being very much better. Eyeballs slightly yellow. Temperature, 102° F.; pulse, 80; respiration, 24. Urine normal, except that it contained bile. Plasmodium in the blood. Tenderness over liver and spleen.

On September 14th (third day of illness) all the pains were gone except marked tenderness over the enlarged spleen and slight tenderness over the liver. Gums a little soft. Temperature, 100° F.; pulse, 60; respiration, 20. Plasmodia were diminished, but still in the blood.

Five grains of sulphate of quinine were continued every three hours.

On September 15th (fourth day of illness) the patient was much better. Temperature, 99.5° F.; pulse, 49; respiration, 18. Gums soft; stasis; no pains; urine contained bile, but no albumin and no casts. No plasmodium in the blood.

Ordered five grains of sulphate of quinine every three hours.

On September 16th (fifth day of illness), temperature, 98; pulse, 48; respiration, 18. Gums soft; stasis; no pains; quinine, five grains every three hours, continued.

On September 17th (sixth day of illness) temperature normal; pulse, 60; respiration, 18. Gums still soft. Stopped quinine.

On September 18th (seventh day of illness) temperature normal; pulse, 60; respiration, 18. Discharged cured.

The fourth day after discharging the patient I was again called to see him, because he had a slight chill, followed by fever. Temperature, 102° F.; pulse, 100; respiration, 24. Gave him five grains of sulphate of quinine every three hours. Next day he was well.

Recapitulation.—Dr. G. S. Bel's cases. Total number of cases, fifty-five; total number of cases which were very seriously ill and in danger of death (four black vomit), nineteen. Total number of cases which were very ill, but *not in danger* of death, twenty-one. Total number of recoveries, fifty-four. Total number of mild cases, fifteen. Total number of deaths, one. All treated with quinine. Of the fifty-five cases, fifty-three were natives of New Orleans, and lived in New Orleans up to the time of illness. One was born in New Orleans, but lived in La Fourche for ten years. Of the fifty-five cases, forty-eight cases occurred in forty-eight different houses; the remaining seven cases occurred as follows: Two cases in one house, two cases in another, and three cases in another. Some cases occurred in families of eight to ten people, and not a single one contracted the fever. No family I visited consisted of less than five people. Seven of my patients had had yellow fever. Sex: Males, thirty-five; females, twenty. Color: White, fifty; colored, five.

(*To be continued.*)

ON A LITTLE-KNOWN METHOD OF TREATMENT OF FURUNCULOSIS.

By GUSTAV LANGMANN, M. D.

THE appearance of a furuncle is usually considered an occurrence of little importance. It runs its course in a week or two, and, though often accompanied by one or a number of satellites, it is seldom followed by serious consequences. Yet those who have felt its piercing pain, who have been incapacitated for work for a length of time through its ceaseless annoyance, will concur in the opinion that, on account of its frequent occurrence and recurrence, its treatment ought to command the earnest attention of the practitioner. Furthermore, the gravity of this ailment is readily conceded when we have to deal, not with the plain furuncle, but with its fuller developed type, the carbuncle, a disease which is essentially the same, differing only in the extent of its symptoms.

The exciting cause of few diseases is so firmly established as that of furuncle and carbuncle. The invasion of the *Staphylococcus pyogenes aureus* into a hair follicle, a sebaceous gland, or a sweat gland instigates a reaction which causes primarily the necrosis of these structures and their immediate surroundings, forming a necrotic central core. A reactive inflammation of the adjacent tissue sets in, which results in the formation of pus and the final loosening and extrusion of the necrotic centre. The little abscess collapses and is soon closed by granulation and scar tissue. This process appears to be extremely plain, but after critical examination the question naturally arises: Why do the staphylococci settle or develop just in these particular hair follicles? Some authors consider the staphylococci as the permanent, inert inhabitants of all follicles; ordinarily the normal skin has sufficient power of resistance to defend itself against these dangerous invaders, and only when certain influences impair the inherent resisting power do the microbes make a successful inroad upon the epidermis. It is not likely that the staphylococci are regular commensals in the epidermic glands, for it has been experimentally proved that by forcibly rubbing staphylococci—*e. g.*, of an osteomyelitic abscess (Garré)—into the skin typical furuncles are produced. The extraordinary virulence and the large number of germs, as in the experiment quoted, may alone be conducive to the growth of furuncles; in other instances the repeated exposure to contagion may lead to the same result. On the other hand, bruises, accumulations of dead matter in the tissue, are well known as foci favorable to the culture of any micro-organism.

Another favorable condition is claimed to be found in the extraordinary size of the portal of entrance. Thus the mouths of the sudoriparous glands may be of extraordinary size in Europeans who are becoming acclimatized to the tropical sun, or in workingmen exposed to the radiant heat of a blast furnace; for we know that these classes of people are often victims of the disease in question.

The conditions named may be able to engender a local susceptibility; a general predisposition, however, must be conceded to exist in many cases—*e. g.*, during convalescence from wasting diseases. That this should be so is not at all surprising, since we know from experience that any debilitating influence, like fatigue, starvation, an unsuitable diet, or exposure to heat, cold, and moisture, reduces the resisting power of certain animals to infectious diseases. Any disease which by universal exhaustion diminishes also the physiological resistance of the external integument may be supposed to convert the latter into a productive field for the development of microbes, and consequently also for furuncles. General furunculosis often terminates a long protracted convalescence from typhoid fever, etc.

In a similar manner a faulty method of living—*e. g.*, the excessive use of albuminous food, or of alcoholics or fats—is claimed to prepare a suitable soil for the growth of boils. Whether we approve of such an opinion or not, it is fairly established in one disease only that the pathological composition of the juices of the body or of the blood is favorable to the development of furuncles, and more so of carbuncles—*i. e.*, in diabetes. The presence of sugar in the solids and fluids of a body apparently prepares an excellent culture medium for the *Staphylococcus aureus.* Bujwid's experiments have demonstrated that a culture of staphylococcus grows exceedingly well when it has been rubbed into the skin together with grape-sugar.

Still, granting all these conditions enumerated as contributory causes of furuncles, there is one more element which seems to aid the development of staphylococci—*i. e.*, the growth of a boil, or a series of boils—at a certain definite area. An incident, experienced on my own body, convinced me that nervous influence, a trophoneurosis, must be considered as the primary cause of many cases of furuncles. In the spring of 1881, after a laborious and fatiguing winter, a furuncle appeared on the posterior surface of my left forearm, about two inches above the wrist; it developed slowly, and a few days later a second furuncle showed itself on the same surface just below the head of the radius. During the subsequent two weeks quite a number of them, about a dozen (there are still ten distinct scars to be counted on my arm), sprang up here and there on the posterior surface between the two localities indicated. It was plainly to be seen that all these boils arose along the course of one and the same nerve—viz., the external cutaneous. Supposing some nervous disorder to be the cause of so large a crop of furuncles, I applied the galvanic current to the nerve. The boils discharged, dried up, and no new ones appeared, whether through the action of galvanism or from exhaustion of the fertile soil must be left undecided. About a week later one more furuncle developed on my right shoulder in the supraspinous fossa. The galvanic current was applied at once, the furuncle aborted, and no others were seen thereafter.

For my own part, I confess to having come to the conclusion that the growth of the boils on my forearm was due to trophoneurotic disturbance. The existence of separate trophic nerves is a question unsolved to the present day; there are, however, so many pathological phenomena pointing with a certainty to their existence that most authorities take the latter for granted. They are considered by most to run together with the sensory nerves; those nerves which in mammals penetrate into the tentacula or surround the openings of sebaceous glands, and which in men terminate in the dermic coat of the hair follicle and the outer root sheath, are probable mostly sensory. A network of fine, medullated fibres also surrounds the sacculi of the sebaceous glands. From this it is fair to assume that trophic nerves are also encountered in these situations. Nowhere in the literature pertaining to this subject have I been able to find an intimation that a neurotic disturbance might be the cause of furuncles. Eulenburg, who devotes a comparatively large space to trophoneuroses of the skin, does not count furuncles among them. The only suggestion of such a possibility is to be found in an article by Isola. To neurotic influence points also the occurrence of numerous furuncles on the left side of the face and neck after left-sided hemiplegia, described by Mattignon, who relates at the same time the observation of a case of acne limited to the paralyzed side of a hemiplegic man.

It is, of course, not permissible to draw from a single observation the general inference that all furuncles are of trophoneurotic origin; but that this may be so in a measure is not at all unlikely. The nape of the neck, for instance, is a locality for which boils show a decided preference; the rubbing of a stiff shirt collar is considered the probable cause. But why, then, should we ever live without furuncles? It will be remembered that just in these places they are wont to grow not singly, but several in succession, in a horizontal direction, like that of the cutaneous branches of the cervical nerves. General furunculosis, following an exhausting disease and attributed to a universally lowered vitality, may find a better explanation in a general trophoneurotic disturbance.

But I prefer not to go astray in theories. It is impossible to positively demonstrate a trophoneurosis. It might not be amiss, however, to draw a corroborating conclusion from the treatment, *ex juvantibus*.

It can not be my object to go through the endless number of remedies recommended and used for the abortion and treatment of furunculosis. May it suffice to cite in this respect the words of a French surgeon (Faure): "I shall be careful not to repeat all those remedies, and shall pass in silence that numerous series of topics and ointments and of drugs which for a goodly time, with cataplasms and chemical caustics, have constituted the most approved therapeutic method. Of these remedies, most of them luckily forgotten to-day, some are absurd, others are barbaric, useless, often even injurious." What method of treatment, then, is acknowledged and accepted by the best surgical and dermatological authorities to-day? The so-called abortive treatment is abandoned; the injection of a few drops of carbolic solution beneath the furuncle (Bidder, Crocker), the drilling in of carbolic-acid crystals with a pointed stick (Fox, Collins Warren), and the implantation of a fine galvano-cautery needle into the focus (Löwenberg, Tuholske) are no longer recommended, as being very painful and doubtful in their results. The actual treatment is purely preventive after the appearance of the first boil; it attempts to hinder the propagation of the staphylococci to the adjacent follicles, first by covering the surrounding surface with a dressing to prevent fresh injuries by scratching or friction (Watson Cheyne, Gould and Pyle), or by occluding the openings of the hair follicles with an antiseptic varnish (Crésantignes); secondly, by treating the whole epidermis of the neighborhood by antiseptic emollients, soaps, or ointments, with or without internal medication (Veiel, Unna, Phillipson, Bulkley, etc.).

The means of last resort, however, always remains an incision, plain or crucial. Most surgeons recommend it to relieve the insufferable tension. Whether the duration of a furuncle is thus shortened is very doubtful; on the contrary, some surgeons strenuously advise against an incision on account of the addition of needless pain and the prolongation of ultimate healing. As to carbuncles, they all agree in the desirability of early free incisions, followed by antiseptic dressing; some even urge the complete excision of a carbuncle, which procedure they declare as reasonable as the excision of tuberculous glands (Parker).

My experience has led me to discard all these remedies. I have had to deal with a great number of furuncles since 1881, and I have never made any more incisions. The galvanic current simply was applied, and I am convinced now that not only were my patients spared a good deal of pain, but also that their furuncles healed in a much shorter time than under any other treatment. My method is as follows: The cathode, exhibiting more intense reaction upon the tissue, is placed upon the furuncle, the anode somewhere in the neighborhood, and a current of about two to five milliampères is applied for from five to ten minutes. As a rule, one sitting daily is sufficient. The intensity of the current ought to vary both with the stage of development of the boil (the earlier stages being more sensitive) and with individual sensitiveness. Whoever has no galvanometer on his battery may regulate the current according to the sensations of the patient; the feeling of a lively sting, entering, as it were, the centre of the boil, just enough to be tolerated, indicates about the proper strength of the current.

It is an impossibility to prove by figures that the natural duration of a boil is shortened under this treatment. All furuncles differ in their course: some abort of themselves after a few days; others, left untouched, have a run of about ten days, which is considered the average for an ordinary furuncle; others, verging into carbuncles, terminate after weeks, etc. I can not speak but of a general impression as to the effect of galvanism, but, after having subjected to it during these nineteen years more than a hundred different cases of furunculosis, including all stages and types from a slight boil to an almost well-developed carbuncle, I feel entitled to say that almost all furuncles, when treated in their incipiency, dry up (abort). When a yellow pustule has formed around the central hair, this little mass of pus is extruded, but no suppuration follows. Even when fluctuation is present, the core is soon thrust out, pus escapes through the central hole, but the suppuration is insignificant, and the whole swelling quickly disappears, with or without antiseptic dressing. Whenever there is extensive suppuration, I place a flat pledget of cotton soaked in 1-to-1,000 sublimate solution between the sponge and the skin. Whether this powerful antiseptic has a beneficial effect by cataphoric action or not I leave undecided; those who have great confidence in cataphoresis may use it on all boils.[*] Under such treatment some boils disappear after one or two applications; others require as many as eight; on the average, four or five sittings terminate their existence. I did not have the chance during these years to encounter a regular malignant carbuncle, but I would not hesitate to treat it in the same way. Large furuncles with five or six pustules have yielded to the treatment as well as smaller ones.

A well-known effect of the cathode is evident directly after its application—viz., the anæsthetization. Patients, without being questioned, volunteer the assertion that they feel much easier around their boil, and this effect seems not to be transient; it lasts for a long time, perhaps a whole day. Whether faradization may bring on the same or a similar result as the galvanic current I am unable to say. The electrolytic action of the induced current is decidedly weaker; its extended application, however, may have the same effect as that of galvanism. The minor satellites of the principal boil were either covered with the same electrode or left to themselves. They always aborted, and I have never seen a relapse within the following months.

As already stated, the general result of the treatment may serve to prove the trophoneurotic origin of furunculosis. It is undoubtedly so in some cases, while in others electricity may simply exhibit the same beneficial influence which it has shown in the healing of ulcers, abscesses, etc. I purposely abstain from all theorizing in regard to the action of the galvanic current upon the development of boils; whether it has a direct deleterious action upon the bacterial colonies or only stimulates tissue and leucocyte reaction will have to be established by experiment.

Before concluding, I shall not omit to state whatever references or recommendations I have found in literature regarding electrical treatment of furunculosis. When I first used my method, prompted by the experience on myself, I was not aware of any recommendation. It was but lately, after investigating the subject, that I found the following items:

The first edition of Beard and Rockwell [†] has the following passage: "Carbuncles and furuncles might be treated by electrolyzation. Dr. Sass informs us that a number of years since he used this treatment in two instances with good effect." Through the editions of 1881 and 1886 it has crystallized in the edition of 1888 into the following statement, which is repeated in Rockwell: [*] "We demonstrated long ago that faradization was capable of hastening suppuration, and we have practically utilized this fact in the treatment not only of carbuncles and furuncles, but of various other forms of abscesses. Dr. Sass informs us that he has used this treatment with great effect."

Althaus [†] testifies to the good effect faradization has upon granulations and ulcers, especially according to Spencer Wells, who has used it quite extensively.

Bartholow [‡] recommends galvanism for acne.

Bigelow: [#] "Galvanic electricity has been successfully used to abort and cure carbuncles, boils, and other suppurative diseases of the skin and subcutaneous cellular tissue. To be of avail in these cases the disease must be taken in its incipiency. If the disease has reached a stage that it is impossible to abort it, then galvano-cautery is recommended." Page 26: "Furuncle. If the case is in its incipiency, it is possible to abort it by the continuous application of the galvanic current. Dr. Tuholske recommends the introduction of the electrolytic needle as being sufficient in aborting boils."

Lewis Jones: [||] "Electrical application to chronic ulcers of the skin will improve their condition and promote healthy cicatrization."

Rockwell: [^] "Ulcers of different nature have been treated with the faradaic and galvanic currents. The nutrition of the parts was so improved that healing commenced at once." Page 99: "There is no question that the electric currents do have a slight benumbing effect on the skin. Knorr, of Munich, has availed himself of the anæsthetic effect of electrization for opening felons and buboes."

Monell [◊] refers only to static electricity as being capable of dispersing a blind boil within a few days.

The foregoing quotations contain all I have been able to find. There are doubtless other references in special treatises on electricity; they would, however, be quoted somewhere if they had attracted the attention of the profession. It will be seen from the above citations that the electrical treatment of cutaneous ulcers is repeatedly recommended,[‡] but, to my knowledge, has not found much favor. With the only exception of Bigelow's book, the treatment of boils is advocated but in a vague way. These short references escape the eye of the practitioner, or arouse his suspicion so much more when they are given in books and treatises which recommend electricity for every ailment that flesh is heir to. I am not aware that a prolonged trial has been given anywhere to the electrical treatment of furunculosis.

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[*] After concluding my paper I found the following item: Meissner (*Archiv f. Physiol.*, 1899, p. 11), after asserting that cataphoresis arises only at the positive pole, says: "I merely suggest that the introduction of antiseptic fluids promises the best results in all septic and parasitic conditions of the skin."

[†] *The Medical and Surgical Uses of Electricity*, 1871.

[*] *The Medical and Surgical Uses of Electricity*, 1896, p. 578.

[†] *Medical Electricity*, 1873.

[‡] *Ibid.*, 1887.

[#] *Internat. System of Electrotherapeutics*, Philadelphia, 1893, p. 20.

[||] *Medical Electricity*, 1895.

[^] *The Medical and Surgical Uses of Electricity*, 1896, p. 577.

[◊] *The Treatment of Diseases by Electric Currents*, 1897.

[‡] Regarding the galvanic treatment of superficial suppuration I may make a report at a later date.

Horace's advice, "*nonum prematur in annum,*" to allow an idea nine years to mature, has been heeded for more than double that time; and, while now recommending my method to the profession for trial and for criticism, I hope that the following conclusions may be confirmed:

The galvanic treatment of furunculosis is a harmless and almost painless method.

It very often aborts a furuncle, or at least shortens its course considerably.

It also accelerates the healing of a boil which is in a state of suppuration.

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THE DISEASES OF THE BLOOD IN THEIR RELATION TO SURGERY, AND THEIR TREATMENT.

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As surgeons, we have to consider altered conditions of the blood from a twofold standpoint. We see them either as disturbances affecting the general health of our patients, and bearing a more or less complicated character, or as a direct result of actual hæmorrhage due to pathological, accidental, or operative processes. In other words, we deal with anæmias due to imperfect or insufficient formation of the elements constituting the blood, and with anæmias due to prolonged or sudden copious bleeding. The study of these conditions, from the surgical point of view, is extremely interesting, by reason both of their great frequency and of the fact that most of them are so distinctly relieved by appropriate treatment. As a matter of fact, we are better informed as to the therapeutics of anæmic troubles than in regard to the pathological states which give rise to them, and our knowledge of their ætiology is limited to the simple understanding that the blood, not being an independent tissue, can be modified only by changes affecting primarily other elements of the animal economy, except in the case of the direct introduction of toxic substances within the blood current.

The histological and chemical changes to which the blood is subject have in the last few years been studied so persistently and accurately that the diagnosis of blood diseases is as subservient to laboratory investigation as that of certain infectious diseases is to bacteriological research. But, while paying the strictest attention to blood count, to the estimation of hæmoglobin, and to the microscopical appearance of the globules, we must acknowledge that even these means of investigation sometimes prove somewhat insufficient, and that we occasionally are unwillingly compelled to remain in the dark. We know, for instance, that among cases of so-called pseudo-anæmia some of the patients have what we might call a natural normal pallor, which is sometimes very pronounced, although the examination of the blood reveals the fact that, so far as we can find out, nothing is amiss with it. In these cases the administration of chalybeates may be followed by no changes whatever in the blood count or the percentage of hæmoglobin, and by no modification of the pallid appearance. Again, in other instances, while the blood seems normal, iron certainly diminishes the outward anæmic appearance, without changing the composition of the blood in any appreciable manner. And these patients, while possessing what to us appears to be normal blood, often present many of the symptoms of distinct anæmia. A possible source of error lies in the fact that the blood count may be greatly changed at decidedly short intervals by a greater or lesser dilution of the blood, due to rapid increase or decrease in the amount of body fluids; but we can nearly always make due allowance for such a state of affairs. The class of patients in which the diminution of hæmoglobin is proportionately greater or smaller than that of the corpuscles furnishes some rather obscure cases. In general, however, careful examination gives us very certain and very useful data.

The forms of anæmia which appear to be due to the immediate effects of infectious conditions are also of the greatest interest to us as surgeons. In these forms we know that there often occurs a true anæmia, but we are also aware that this is complicated by the addition, within the blood mass, of toxic products which commonly increase to no small extent the globulicidal action of the serum.

In our investigation of the blood for diagnostic and therapeutic purposes we may deem it sufficient to obtain an accurate blood count, to estimate the percentage of hæmoglobin, to count the leucocytes when they appear to be in unusual numbers, and to pay some attention to the appearance of the red globules. In the latter case we notice whether there is a tendency to microcytosis, which is apt to indicate an effort at blood regeneration, such as occurs after copious hæmorrhages, or whether the globules are enlarged (macrocytosis), as in some severe forms of anæmia. The presence of poikilocytosis (irregular formation of red corpuscles) is also noted as giving evidence of decided degeneration, such as occurs in advanced forms of anæmia.

Simple Anœmia.—This condition is one that very frequently complicates the march of surgical diseases. It is not commonly attended by an actual insufficiency in the volume of the blood, but by a diminution in the number of red blood cells and the amount of hæmoglobin. It commonly appears to be due to insufficient or improper nutrition and to unhealthy surroundings. When it exists to a very marked extent it must be considered as a distinct contraindication to any extensive surgical procedure, except in the presence of emergencies. Mikulicz insists upon the fact that operations must not be performed if the percentage of hæmoglobin is below thirty. In practice we are often able, by appropriate treatment, to improve the composition of the blood before an operation to such an extent as to render our procedures entirely safe. It is important to note the fact that many stout men, of the so-called plethoric type, are in reality distinctly anæmic. Many of these are found among beer drinkers who, by excessive action of the kidneys and of the skin, combined with hard manual labor, unduly tax their hearts, while their digestion is impaired.

Symptomatic Anœmia.—In the former group we more or less arbitrarily include those cases in which the ordinary form of anæmia is, at least from the clinical standpoint, the primary pathological condition. In symptomatic anæmia, on the other hand, we see a condition which seems to be derived secondarily through the agency of some distinct antecedent disease. We find it complicating all manner of disturbances of the gastro-intestinal tract, of the circulatory and excretory apparatus, and following the exhausting fevers, or any of the diseases which distinctly affect nutrition. From the surgical standpoint it is of less importance than the simple form, since the causative conditions are usually easily recognized, and we must judge of the advisability of surgical interference according to the nature of the primary disease. The mere presence of anæmia, therefore, suggests the possibility of other trouble, and emphasizes the ever-present need of examining all our patients at least as searchingly as do life-insurance examiners before undertaking an important operation.

Chlorosis.—As this is a disease that affects nearly though not quite exclusively girls at the period of puberty, surgeons do not very often see it as complicating gynæcological cases. Its existence in a certain number of instances of menstrual disturbances for which operative interference has frequently, but seldom very wisely, been advocated, gives it some interest from the practical surgical standpoint. Its fairly frequent association with hysterical manifestation should lead the surgeon to investigate in what manner, if any, the latter is a factor in producing or exaggerating the symptoms complained of. Chlorosis, like other forms of anæmia, is, when at all severe, a contraindication to the performance of surgical operations. In this disease the frequent lack of development of the cardio-vascular system must militate against the processes of repair, and the tendency to thrombosis sometimes shown in chlorosis might also cause us some hesitancy, as would also the liability to hæmorrhage presented by some chlorotic girls.

Malignant Anœmias.—Progressive pernicious anæmia and leucæmia are of no practical interest from the purely surgical standpoint, inasmuch as no surgical interference would ever be thought of in any case in which the presence of either of these diseases is a complicating element. Hodgkin's disease, however, merits some consideration on our part, if only for the reason that the diagnosis between it and some other processes characterized by glandular enlargements is still often a matter of some difficulty, to say the least. In the first place, many more or less atypical forms arise, and the impression is somewhat prevalent that many varieties of glandular enlargement and multiplication have at various times been included in its description. In practice we are at times compelled to establish a differential diagnosis between pseudo-leucæmia and syphilitic, tuberculous, and ordinary inflammatory affections of the glands, besides the presence of the ordinary local malignant processes. If all these conditions can be eliminated, a problem not always easily solved, surgical interest still remains in the fact that in the presence of some form of Hodgkin's disease operative treatment at an early date may prove of some benefit. The following case may prove of interest in connection with this subject:

B. N., aged twenty-nine, was admitted to the French Hospital in November, 1894. He presented an enormous glandular enlargement involving the left side of his neck and extending from the mastoid process down to and beyond the clavicle. The axillary glands did not appear to be involved. The man denied syphilis, presented none of the cutaneous or other symptoms of this disease, and had been for some weeks taking antisyphilitic treatment without benefit. He had never presented any signs of malaria, was not rhachitic, and had never had any strumous enlargements as a child. There was moderate enlargement of the spleen. His general appearance was distinctly anæmic. No blood count was made, and under the microscope there seemed to be no distinct leucocytosis. The temperature, while the patient was under observation, varied at irregular intervals from normal to 100° F.

The man insisted upon an operation, as he complained that his appearance prevented his getting any work. He was most willing to submit to what was told him would be a mere chance of permanent relief. The operation was done on November 18th, and was so extensive that the patient remained under ether for four hours and a half. The glands removed more than filled a pint measure. They were not soft, nor did any of them present any evidence of tuberculous degeneration. Union took place by first intention, and the patient was discharged three weeks after the operation. He was then lost sight of, but returned in December, 1895, presenting a glandular enlargement about the middle of the posterior edge of the sterno-mastoid on the left side. Seven glands were removed the day after. This patient was seen in February of the present year, and has had no recurrence of the trouble.

This case was not studied from the standpoint of blood examination with the care that would have been taken at the present day, and the exact diagnosis must remain uncertain. Yet it shows that occasionally we meet with doubtful cases in which a thorough operation offers chances of recovery. Surgical treatment will, of course, remain limited to the cases in which the glandular enlargement is local and offers a good prospect of complete removal.

Leucocytosis as a Symptom of Pus Formation.—Pus formation is practically always attended by a distinct increase in the number of leucocytes to be found in the blood. If these are counted immediately before the first meal, in order to eliminate the digestive leucocytosis that invariably accompanies the process of digestion, we shall obtain a reliable method of diagnosis in cases in which the presence of pus is suspected but not certain. A recent article by H. Stuart Maclean, in the *Medical News*, constitutes a valuable contribution to this subject, as showing the distinct advantage of a routine use of blood count in doubtful cases of purulent collections. It is of the utmost utility in the diagnosis of deep-seated visceral abscess, of appendicitis attended with pus formation, of pyosalpinx as distinguished from other ovarian and tubal troubles, and of osteomyelitis. In cold or tuberculous abscess there is no increased leucocytosis, unless there is added an infection due to the ordinary pyogenic germs. Finally, in the presence of shock we may diagnosticate hæmorrhage from concussion or compression by the increase of leucocytes and the diminution of red globules which occurs in the first.

Treatment.—As the surgeon's first concern is always to place his patient in such a condition that he will easily bear any intended interference and promptly recover from it, complicating blood disturbances always call for treatment at his hands. The matter is simple enough, for we practically rely upon iron, but the choice is more difficult, as we meet with much contradiction of opinion. The merits of organic and inorganic preparations are still under contest. Of late there has been some reaction in favor of the latter, but we hardly feel that it is well justified. There is no doubt that none of the inorganic preparations are directly absorbed into the blood, but, while it has lately been stated that there is no convincing proof that this occurs with the organic forms, the researches of Quincke and others show that this is more than probable in the case of some of the organic preparations. The value of inorganic preparations must be admitted, but the question is one of superiority. We know that it is not true that iron acts only by combining with the sulphureted hydrogen of intestinal putrefaction, thus allowing the ferruginous nucleo-albumins to be absorbed, since the sulphide of iron may be given with good results, and since other substances which readily combine with sulphur do not produce good results. The theory that iron has but a local action in the intestines is disproved by the fact that the livers of animals that are given iron are richer in this substance than the livers of those to which no iron is administered. Stengel, in his fine essay on the diseases of the blood in the *Twentieth Century Practice of Medicine*, agrees with von Noorden in believing that iron acts as a direct stimulant to the hæmatopoietic organs. Clinical observation has certainly shown that the organic preparations are better tolerated and may be taken for a longer time than the inorganic ones. No one contests the value of Blaud's pills; yet, in many cases, they have to be given in apparently excessive doses to obtain good results, and in such instances they usually constipate and cause gastric disturbances. The pills of the carbonate often cause gastralgia, and a certain proportion of patients can not take them. The liquid preparations, such as the tincture of the chloride and the syrup of the iodide, are of distinct value, yet they possess some disadvantages. If we admit that the inorganic preparations sometimes give fairly prompt and favorable results, we must also admit that their administration has to be limited to the cases which show no harmful results from their use. Besides this, we may be disappointed by old and unreliable preparations.

The value of chalybeate medication is something that may be tested accurately by blood count and estimation of hæmoglobin. Repeated investigations of this character have certainly shown the value of some of the organic preparations from this standpoint. In many instances they have shown a distinct superiority over the inorganic ones, and their greater palatability, together with the fact that they hardly ever disagree with the stomach, and that in their best forms they do not cause constipation, and may usually be administered for any length of time, are distinct points in favor of their use.

For several years past the writer has made use of the liquor ferri peptomanganatis of Gude in all instances of anæmia complicating cases in his surgical practice, with exceedingly good results, some of which will be detailed further on. Examination of the blood was made in the majority of these cases.

Dr. von Ramdohr, of this city, read before the Academy of Medicine on May 27, 1897, a paper, subsequently printed in the *New York Medical Journal* for June 26, 1897, in which he gave the results he obtained after gynæcological operations by the administration of the peptomangan. His observations, being controlled by blood count and estimation of hæmoglobin, are of distinct scientific value. In eleven patients this remedy was administered during a period averaging a trifle over twenty-two days. The blood count in all these patients averaged 3,367,727 red blood corpuscles before the administration, and had risen to an average of 4,272,363 at the end of the period mentioned.

Dr. Emory Lanphear, in a similar investigation in three surgical cases, found a blood count averaging 3,286,666 before treatment, a number corresponding very closely with that found by Dr. von Ramdohr. He kept his patients under treatment for a period averaging a little over thirty-seven days, however, and then his blood count showed an average of 4,735,000.

In the following cases treated by the writer the blood examinations were made either by himself or under his supervision by Dr. Brandeis, Dr. Overton, and Dr. Lynch, all of the house staff of the French Hospital:

Mrs. O. F., aged forty, sent for me December 22, 1898, to be treated for a Colles's fracture on the right side, which had taken place on the morning of the same day. Extreme anæmia being noticed, the patient stated that she had vomited blood occasionally for the last three months. Further inquiry and examination led to the diagnosis of ulcer of the stomach. Blood count, 2,179,000; hæmoglobin, forty-two per cent. She was placed on peptomangan, in half-ounce doses four times a day, which she bore exceedingly well. She had previously used the tincture of the chloride of iron and Blaud's pills without good results. On January 31, 1899, her blood count showed 3,874,000 red globules and hæmoglobin fifty-eight per cent. Her symptoms had all greatly improved.

A. J., a French woman, aged twenty-nine, was admitted to the French Hospital on January 13, 1899, suffering from metrorrhagia due to retained products of conception. She had been bleeding at frequent intervals for three months past. She was curetted and given peptomangan. Blood count before treatment, 3,100,000; hæmoglobin, thirty-nine per cent. After the lapse of three weeks she showed 4,435,000 red corpuscles and hæmoglobin sixty-two per cent.

A similar experience was obtained, during the course of last year, in a large number of cases in which curetting was done for various reasons.

Mrs. McG., Irish, aged fifty-seven, was admitted to the French Hospital on May 22d suffering from uterine cancer, with some involvement of the vaginal wall posteriorly. This case was a rather bad one for operation, and hopeless as to entire cure. As operation offered some chance of prolongation of life, by stopping the bleeding and checking for some time the growth of the neoplasm, I did a vaginal hysterectomy on May 26th, and removed a considerable portion of the posterior vaginal wall. She was given peptomangan. Blood count before treatment, 1,924,000; hæmoglobin, thirty-three per cent. After the lapse of three weeks the blood count was 3,894,000 and the hæmoglobin forty-nine per cent. I saw her last November, and she then presented signs of a recurrence. She had, however, enjoyed in the meanwhile some months of very fair health.

A. F., a French woman, aged forty-four, was admitted to the hospital on June 3, 1899, for a very tight stricture of the rectum, of syphilitic origin, and dating ten years back. In the last few years the stricture had on several occasions been stretched and forcibly dilated. She had used rectal bougies herself for a long time. The only prospect of relief seemed to lie in a left inguinal colotomy, which was done some time after her admission. She was exceedingly anæmic, and antisyphilitic treatment did not appear to lessen the anæmia. Peptomangan, administered during four weeks, increased the red blood cells from 2,945,000 to 3,600,000, while the hæmoglobin rose from forty-one to fifty-five per cent. This improvement, however, was rather temporary, and was not maintained very long.

J. U., a French sailor, aged twenty-nine, was sent to the hospital from his ship on June 4th suffering from a mastoid abscess. His condition was so bad that he was operated on within a few minutes after his arrival. He stood the operation well. As he suffered from profound sepsis, and his blood count was 4,320,000, he was given peptomangan. In two weeks his blood count had reached 5,520,000. The hæmoglobin, through an oversight, was not estimated.

J. R., a French woman, aged twenty-nine, was admitted on June 9th suffering from a large pelvic abscess. The temperature was 104° F. on admission. The abscess was evacuated by anterior vaginal section. Blood count, 2,640,000; hæmoglobin, thirty-five per cent. Peptomangan was given for three weeks, after which the blood count was 3,740,000 and the hæmoglobin sixty-eight per cent.

Mrs. A. P., a French woman, aged forty-two, was seen at her house on April 20, 1899. I was called in consultation by Dr. Monory, visiting physician at the French Hospital, who had himself been summoned by a midwife who had been in charge of the case. The woman was in labor, and shortly after the pains began she had a severe hæmorrhage. The injudicious use of ergot by the midwife had only served to render the bleeding more violent. Dr. Monory and myself administered chloroform immediately, and, tearing through a placenta prævia centralis, did a podalic version and rapidly delivered a dead child. The uterus was packed with aseptic gauze. The woman appeared to be practically exsanguinated, for the hæmorrhage was the most severe I have ever witnessed. As the midwife manifested her desire, and protested her ability to take charge of the after-treatment, we left the patient, after giving full directions for the removal of the gauze on the next day, and enjoining great cleanliness. This patient was admitted to the French Hospital on May 3d, not having been seen by a physician in the interval. Upon admission, during the afternoon, she had violent chills, and her temperature was 106° F., rising to 107.2° F. an hour later. The gauze had been removed only after the lapse of a number of days. The patient was of a waxy pallor and the pulse nearly imperceptible. A profuse fœtid discharge issued from the vagina. Intrauterine lavage was done at once with saline solution, many gallons of which were used. An intravenous injection was also practised. The blood count was 1,760,000; hæmoglobin, twenty-eight per cent.; leucocytes, 32,000. Strychnine and nitroglycerin had to be frequently administered. During the course of the next three days the patient seemed to manage to just keep alive, and we were momentarily expecting her death. On May 6th she was given antistreptococcus serum hypodermically, and this was repeated twice on subsequent days. The temperature then gradually fell on the 8th to 100° F., the lowest degree yet reached, and in the course of the next four days came down to normal. From the first she had been fed with milk and whisky in frequent small doses, with drachm doses of peptomangan three times a day. This was soon increased to half-ounce doses. Four weeks after admission her blood count was 3,840,000; hæmoglobin, sixty per cent. She was discharged at this time in good general health.

A. K., a Greek, was admitted on the same day as the previous patient, suffering from a severe infected stab wound on the external aspect of the left thigh. His temperature was 106° F. on admission, and rose higher during the night. The original wound affected the lower end of the vastus externus a few inches above the knee joint. The knee itself was much swollen, and the whole external aspect of the thigh was fluctuating. The original wound was enlarged, and a counter opening was made three inches below the trochanter. A large rubber drainage tube was introduced, the ends protruding through the two wounds. There was an enormous discharge of stinking sanious pus, and the wound and drainage tube had to be washed out several times a day. Notwithstanding these procedures, extremely high temperatures persisted, and he was given antistreptococcus serum. His temperature then gradually began to abate, and he was able to leave the hospital six weeks after admission. His blood count was 2,954,000 and hæmoglobin thirty-two per cent. the day after he was admitted. He was given peptomangan during the whole of his stay, and, upon leaving, his blood count had risen to 4,210,000 and hæmoglobin sixty-two per cent.

These last two cases represent forms of the most violent sepsis, and are the most pronounced among quite a large number which the writer has had an opportunity to treat during the last year. In all such cases the administration of iron in a form which does not unfavorably affect the stomach is certainly of the greatest value, and appears to decidedly shorten the course of the septic condition.

In the surgical diseases of childhood the use of peptomangan has proved exceedingly beneficial in my hands.

B. F., a boy, aged eleven, bearing marks of old sores due to tuberculous cervical adenitis and presenting a very anæmic and ill-nourished appearance, was brought to me on February 29, 1899, for a suppurating sinus upon the outer aspect of the right arm. A sequestrotomy was done, and a large sequestrum was removed from the humerus; the wound was curetted and healed nicely under gauze packing. The boy had taken codliver oil and Fowler's solution for a long time, but was not much benefited. When I first saw him he had 3,100,000 red corpuscles and hæmoglobin thirty-three per cent. He was given peptomangan in two-drachm doses, and in three weeks had 4,254,000 red blood globules and hæmoglobin sixty-eight per cent.

In two cases of facial erysipelas in girls, seen at St. Vincent de Paul Asylum, and in a number of instances of cervical adenitis, the blood count and estimation of hæmoglobin were rapidly improved under the use of peptomangan. In rhachitic children it has given me much satisfaction. During the course of treatment of a boy upon whom I did a double osteotomy for bowlegs, the blood count increased from 2,844,000 to 3,842,000 in four weeks during which this preparation was given before the operation. The following case is of some interest:

B. L., aged eight, an inmate of the asylum, was taken on January 26, 1900, with what appeared to be a severe attack of acute rheumatism, the right shoulder and the head of the left tibia being red and swollen. Salicylates showed no improvement on the next day, and acute osteomyelitis was diagnosticated. The child's mother could not then be found, in order to consent to an operation, and on the 28th, as the tissues over the left upper half of the tibia were red and exquisitely painful, with slight fluctuation, one small incision was made down to the bone, giving issue to some sanious pus, with much bleeding. I did not feel justified in proceeding further without the mother's consent. Pressure stopped the bleeding, which, however, recurred furiously during the night. No vessel could be found to be at fault, and strong pressure, with an elevated position of the limb, had to be relied on. It was only then remembered that the child had, two years previously, nearly bled to death after the extraction of a tooth. It was evident that the child had hæmophilia. The state of affairs, with repeated refusals on the part of the mother, prevented any further operative interference to reach the medullary canal. The child was placed on the use of peptomangan, which, notwithstanding the septic process still going on, raised the estimation of hæmoglobin from thirty-two per cent. the day after the hæmorrhage to forty-five per cent. the next week. The wound has since continued to suppurate, showing continuous slight rises of temperature, and the medullary cavity has opened spontaneously and is draining through the wound. The child seems to do much better than might have been expected during the course of such a prolonged sepsis, and continues the use of peptomangan.

The writer has altogether made, or caused to be made for him, blood counts and estimations of hæmoglobin in fifty surgical cases in which peptomangan was used. In his experience of the last few years he can recall only one patient, a nervous and capricious young woman, with whom it failed to agree. A statistical examination of the results obtained show that on an average the first three weeks of treatment give an increase of about 40,000 red blood globules a day, this proportion diminishing later on as the blood becomes restored to its natural composition. The cases cited by von Ramdohr and Emory Lanphear, as well as those I have observed, show that we have in such preparations as peptomangan a means of obtaining good results with a certainty that is almost mathematical, and without any of the distressing symptoms so frequently following the use of the inorganic preparations.

23 WEST THIRTY-SEVENTH STREET.

SOME DESULTORY REMARKS CONCERNING DIPHTHERIA.

By J. WILKINSON JERVEY, M.D.,
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Diphtheria is a disease more commonly seen by the general practitioner than by the throat specialist, yet I believe it is true that to its clinical throat manifestations and their distinction from other throat affections the laryngologist pays closer and more strict attention than does the family physician. This is but natural, since the former's daily work throws him into more intimate contact with the throat and its adjoining tissues, with their multifarious evidences of disease, from diphtheriform to the simple "itis"es. His many times daily minute examination of throats, healthy and otherwise, would seem most logically to fit him for the task of close and thorough scrutiny, with accurate observation, and the least fallible deductions therefrom, of the signs presented as symptoms of local or general disturbance of the hygienic equilibrium.

The sore throats of measles, scarlatina, and smallpox are generally supposed to be secondary to the systemic infection of the disease producing them—though I question most seriously this view, so far as scarlet fever is concerned; but of this more at some future time—but the throat symptoms of diphtheria are first and foremost in the ætiology, pathology, semeiology, and treatment of this, one of the most fearful of human heritages.

I do not intend to bore you here with a description of the classical picture of the disease. We all know more or less what the common type looks like: its prodromes; its initial symptoms; its rapid and often fearful development; its too frequently terrible results. But all of us do not know—or, I will rather say, none of us know well enough—how to recognize invariably the many atypical forms of this scourge that has by fell destruction wrecked whole families, and in its protean ravages demoralized whole communities. It is to these atypical forms that I wish to draw your attention. They are not so rare as to justify our dismissing them with casual notice. Indeed, they are not at all infrequent, but much more common than most of us conceive of. Furthermore, I have little hesitation in saying that many a diagnosis of "simple sore throat," "acute amygdalitis," "follicular amygdalitis," "spasmodic croup," "acute" or "chronic rhinitis," and "acute" or "chronic exudative pharyngitis" has terminated happily and with no spread of infection, not by our diagnostic, therapeutic, or prophylactic cleverness, but simply and solely by the mercy of God, and out of his great heart. Some of us perhaps have signed a little one's death certificate, wondering deep in our hearts at the severity of a case so simply diagnosticated, and asking ourselves if that could have been the scythe in the Reaper's hands, or was there something else—something that escaped even our most conscientious searchings; something which, if it had been discovered soon enough, could have been successfully combated? It is even so; and these sad cases do not number just one here and one there, but many, many, here and everywhere.

But what are these cases? How are we to recognize them? How are we to manage them?

Koplik has classified the atypical forms of diphtheria, and Osler and others have indorsed his classification as follows:

(*a*) There may be no local manifestation of membrane, but a simple catarrhal angina associated sometimes with a croupy cough. The detection in these cases of the Klebs-Loeffler bacillus can alone determine the diagnosis. Such cases are of great moment, inasmuch as they may communicate the severer disease to other children.

(*b*) There are cases in which the tonsils are covered by a pultaceous exudate, not a consistent membrane.

(*c*) Cases presenting a punctate form of membrane, isolated and usually on the surface of the tonsils.

(*d*) Cases which begin and often run their entire course with the local picture of a typical lacunar amygdalitis. They may be mild, and the local exudate may not extend, but in other cases there are rapid development of membrane, and extension of the disease to the pharynx and the nose, with severe septic and constitutional symptoms.

(*e*) Under the term "latent diphtheria" Heubner has described cases, usually secondary, occurring chiefly in hospital practice, in young persons the subjects of wasting affections, such as rickets and tuberculosis. There are fever, nasopharyngeal catarrh, and gastro-intestinal disturbances. Diphtheria may not be suspected until severe laryngeal complications develop, or the condition may not be determined until post mortem.

To these forms I wish to suggest, in addition, the occurrence of a mild chronic type of diphtheria, with or without accompanying membrane; and when with membrane, this probably exists more frequently in the nose and nasopharynx. The condition may be present for weeks, perhaps even months, with occasional exacerbations, which may develop into a more or less typical attack of the disease. These cases are quite capable of spreading a severe type of infection.

I have had the good fortune to see two of these cases of chronic diphtheria, and one case, which is of particular interest, I shall briefly outline.

In February, 1898, a negro woman, about thirty-five years of age, was referred to my clinic by one of the city dispensary physicians. For some months she had been suffering discomfort in the nose and upper part of throat. She had difficulty in breathing, vague pains through and over nose, anorexia, some discomfort on swallowing, a general feeling of malaise, and marked loss of flesh. For over three weeks she had been on vigorous antisyphilitic treatment with no improvement, and was feeling worse at this time.

Examination showed right nostril almost completely occluded by a brownish and yellowish-gray mass situated apparently from the middle third of the naris backward, filling the posterior naris (a small amount only was adhering to the walls of the left posterior naris) and extending like a false membrane down the posterior surface of the soft palate. No false membrane was visible on simple direct examination of mouth and oropharynx. The whole pharynx, however, presented an aspect of subacute congestion. Removal of portions of the membranous mass revealed "raw-beef" surfaces and slight oozing of blood. The temperature was 103° F. and pulse 108. I immediately made a culture in one of the tubes furnished by the city, and sent it to the city bacteriologist, who pronounced the case diphtheria. I made a diagnosis of chronic diphtheria, and returned the patient to the dispensary physician who had referred her to me, recommending a twenty-five-hundred-unit antitoxine injection, to be repeated if necessary. The one injection was sufficient, however, for within eighteen hours the membrane was peeling off nicely, and the patient made an uneventful recovery.

I regard this simply as a case where the Klebs-Loeffler bacillus gained a foothold suited for active operation, but for some unexplained reason its activity was limited to a very small area. Whether the infection occurred with an attenuated form of the bacillus; whether the original infection was by a very small number of active bacilli; whether local conditions were, in some unknown particular, if such a nature as to prevent the spread of the false membrane; or whether the phagocytotic "battle royal" was being continually waged with the successful effect of at least checking the onward march of the forces of disease, I am quite unable to say.

At the time of making this diagnosis I had never heard of such a thing as chronic diphtheria; yet I could reconcile the signs and symptoms in no other satisfactory way. The generally accepted definition of diphtheria begins, as we all know, "an acute, specific, infectious disease." The diagnosis was discouraged by one or two of my professional brethren to whom I mentioned the case. They said diphtheria was an essentially acute process, and any suggestion of chronicity in its behavior was unheard of. Nevertheless, the April (or May), 1898, issue of the *Journal of Laryngology, Rhinology, and Otology* (the reference has unfortunately been mislaid and I am not sure of the exact date) contains a report of a similar case presented by Mr. Cresswell Baber, of London, with the same diagnosis. Since then several cases have been reported from time to time in the current literature.

These forms, excepting the last, which I think was never before suggested in this connection, are mentioned and conceded by authors of all the latest text-books, but, curiously enough, often in most abbreviated fashion, and with never a warning or suggestive comment. I say "curiously," because it is an accepted fact that while infection from a mild type of the disease usually gives rise to a mild case, the severer forms being infections contracted from malignant types, this is by no means an invariable rule. Out of several hundred bacteriological examinations made by the New York Health Department the most virulent form of the bacillus was that from the throat of a boy with a very mild tonsillar type of diphtheria (W. H. Park, cited by Holt, *Diseases of Infancy and Childhood*).

And, while speaking of bacteriological matters, it occurs to me to remark that, like everything else mundane, the science of bacteria itself is not infallible; so, then, how can its exponents be? Yet the plaudits of the whole world can not be too much for the work these gentlemen have accomplished, and are even now accomplishing, and the blessings they have bestowed upon mankind. In the light, then (or the darkness), of this particular infallibility, it may well be asked, How, therefore, can we make an absolute diagnosis in these atypical varieties of diphtheria? Unfortunately, this we can not always do, since, on the one hand, bacteriological examination sometimes fails to isolate the Klebs-Loeffler bacillus when diphtheria is unquestionably present; and, on the other, there stands the indubitable fact that the bacillus is often to be found in the noses and throats of apparently absolutely healthy subjects.

A condition that we should ever be on the watch for is the addition of the diphtheria infection to the throat lesion of some other infectious disease. This most frequently occurs, according to Holt, with measles and scarlet fever. Under these circumstances the malady is more than ever apt to lead to a fatal termination. In spite of what many of our text-books assert, the superimposing of a diphtheritic upon a scarlatinal infection is by no means a rarity. W. J. Jacques * says, in speaking of the associate infections of scarlet fever, that diphtheria is the most dangerous one. Perhaps we all know that already, but perhaps we are not so well aware of the comparative frequency of the dread combination. Aaser,† Ranke,‡ Holt,# Goodall,‖ Sverensen,^ Beggs,◊ and others have looked into the frequency of the presence of the diphtheria bacillus in scarlet fever. The results of their investigations show it to be present in percentages varying from two and a half to over fifty. A general average of twenty-five per cent. would not, I think, be unreasonable, though even twenty per cent. is probably more than most of us would admit *ex tem-*

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* *Journal of the American Medical Association*, December 16, 1899.

† *Deutsche med. Woch.*, No. 22, 1895.

‡ *Versamml. der Gesellsch. deutscher Naturforscher und Aerzte*, 1896.

# *Diseases of Infancy and Childhood.*

‖ *Epidem. Soc. Trans.*, 1896.

^ *Zeitschrift für Hyg. und Infectionskrankheiten*, 1898.

◊ Met. Asylum Board's Report, 1895.

pore, so startling are these figures. Perhaps we are not as quick nor as sure as we might be in recognizing the complication.

And of the diphtheritic sequents, I dare remark that we see many such without recognizing their nature. This state of affairs is easy of comprehension when we remember that post-diphtheritic lesions often follow —and complications often appear in—many of these mild or atypical cases which have not been diagnosticated, and even those of such apparent inconsiderableness that no physician was consulted. How, then, in this latter case, we may ask, can we recognize the complication? I can offer no suggestion for these circumstances, save that the elicitation, after close questioning, of the shortly previous occurrence of any throat or nasal affection should always be seriously weighed under suspicion of having perhaps been diphtheritic in character.

Recently there have been several reports (by Emil *Mayer, Journal of American Medical Association*, December 9, 1899, and others) published in the medical press, setting forth the concurrent existence of amygdalitis and endocarditis. These reports argue that endocarditis is an exceedingly common accompaniment of rheumatism, and by this means they claim presumptive evidence of the close relationship of rheumatism and amygdalitis.

It is true that endocarditis is generally believed to be rare in diphtheria; but the reported cases above referred to must be comparatively rare, otherwise they would not have been reported; and it would seem that positive evidence showing the undoubted exclusion of diphtheria should be adduced in these cases before weight can be attached to them. Myocarditis and myocardial changes, on the other hand, are accepted common accompaniments of diphtheritic toxæmia, and while obviously it is not for me to challenge the diagnoses of the gentlemen above referred to, still I believe that antemortem diagnosis of myocarditis and endocarditis is notoriously difficult and uncertain by even the most skillful clinicians. I only mention these things to illustrate the possibility of overlooking the matters under discussion, and to suggest the elusiveness (if you will not charge me with frivolity) of that impious and powerful (an only too frequent combination) little bacillus of diphtheria.

It has seemed to me, during some of my moments of cogitation—perhaps you will say "of delirium"—that it is not without the pale of possibility that some day there will be shown a heretofore, I believe, unsuggested relation between rheumatism and diphtheria. This is at first blush, perhaps, a startling proposition. I confess that. It must be added, too, that I have as yet had no opportunity for investigating the plausibility of the theory. I do not argue its probability, but I do insist upon its possibility. The suggestion in my mind is simply this:

Diphtheria is a specific infectious disease giving rise to serious local disturbances by the formation of fibrinous exudates, and showing marked systemic toxæmia, all of which is most commonly seen in children from one to fifteen years of age. Rheumatism is a specific disease due to some yet unrecognized infective agent, causing marked toxæmic symptoms, with an excessive amount of fibrin in the blood and fibrin flakes in the synovial fluid of joints attacked with inflammation. It is seen most commonly in persons from fifteen to forty years of age.

Mark how the ages most commonly attacked by the diseases fit in with each other, diphtheria being most frequently seen from the first to the fifteenth year of age, rheumatism from the fifteenth to the fortieth. Might it not be reasonable to suppose that physiological changes, obscure, and probably never to be elucidated, taking place at the age of puberty, cause a changing susceptibility to the same infection, giving rise perhaps to immunity, or perhaps only to different manifestations of the same specific intoxication? Certainly the deposition of the infective agent of diphtheria occurs just as frequently upon the mucous membranes of the adult as upon those of the child. And in this connection it will not be inappropriate to refer to Reinhard,* who is strongly of the opinion that rheumatism is an infectious disease, secondary to some injury to the mucous membranes. Therefore the prophylactic treatment consists in careful cleansing of the mouth at frequent intervals. Is not this suggestive?

That the same virus can give rise to diseases widely differing both in subjective and objective manifestations, I have but to mention in illustration the conditions: acute miliary tuberculosis, Pott's disease, morbus coxarius, and phthisis pulmonalis. I might also mention Fraenkel's *Diplococcus pneumoniæ*, the pneumonic infection, and supposed also, at times, to be the ætiological secret of meningitis, and of some cases of acute purulent otitis media. So many and varied are the signs and symptoms of syphilis that William Osler was inspired to an epigram in words that will live for generations: "Know syphilis in all its manifestations, and what remains to be learned will not stretch the pia mater of a megalocephalic senior student." These are only a few examples.

It is well known, further, that there are many diseases common to infancy and childhood which are infrequent in adult life, and *vice versa*. Why, therefore, I repeat, may not the inexplicable changes of puberty so modify and change the human economy as to alter, subjectively and objectively, the signs and symptoms of a given specific infection? And I do not regard it as an altogether maudlin and wool-gathering suggestion to advance the possibility of close relationship in the causation of now apparently widely differing diseases attacking the adult and the child. Is this not just as reasonable a theory as that which accepts the adult as immune from certain of childhood's diseases, and the child as immune from certain adult affections?

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* *Münch. med. Woch.*, September 13, 1898.

But, returning to our atypical forms of diphtheria, how are we to recognize them?

Our dependence in suspicious cases must naturally be put upon bacteriological examinations, always bearing in mind, however, that these are not infallible, and confirmatory examinations should be made in doubtful cases. Hard-and-fast rules it is obviously impossible to formulate, and here, as in many another mundane crisis, careful judgment and a wise discretion, always to err (if err we must) on the side of safety and precaution, are necessities for a good physician. Vierordt * has said: "It is better that diphtheria should be diagnosticated too often than that true diphtheria should be overlooked." Osler † says: "Where a bacteriological examination can not be made, the practitioner must regard as suspicious all forms of throat affections in children, and carry out measures of isolation and disinfection."

It is easier to designate, in a way fairly clear, what is to be regarded as a suspicious case. Any case presenting constitutional symptoms, however slight, of fever, with accompanying sore throat and difficulty in swallowing, should be regarded with suspicion, whether any membranous appearance is present or not—more so, if there are present enlarged and very painful submaxillary glands, and albumin in the urine. If no membrane is visible by direct inspection, rhinoscopic and laryngoscopic examinations should be made, and the mucous folds of the throat and crypts of the tonsils should be conscientiously searched for the usual membranous manifestation of the diphtheritic toxines. This search being unavailing, and the physician failing to account, beyond every reasonable doubt, for the existing symptoms, the case must still be held suspicious and treated as such. Especially must it be so regarded if suspicious sore throat or proved diphtheria is prevalent in the community. Edwin Klebs, one of the immortal discoverers of the Klebs-Loeffler bacillus, in a paper presented to the Section in State Medicine at the fiftieth annual meeting of the American Medical Association, June, 1899, said: "Even when membranes are not present, or are invisible because situated in the posterior parts of the nares, or when they are not characteristic enough, resembling follicular tonsillitis, true diphtheria may exist. In most cases the appearance and spreading of membranous exudation is certainly sufficient for a diagnosis when associated with general symptoms." Again, at the same place and time, he speaks of "true diphtheria in which toxic symptoms were absent."

It has been said that the Klebs-Loeffler bacillus is often found in the mouths of healthy individuals. This is true, but it is a misleading statement. Obviously the bacillus can only be found in those who have been exposed to infection. Richardière and Tollemer * have demonstrated the presence of the bacillus in the dust floating in the air in apartments where diphtheria patients have been confined. It is but natural, then, that the bacilli should find lodgment on the mucous membranes of many of the individuals who inspire that air. But how long do those bacilli live there on those membranes and maintain a toxic potentiality? And in cases where they do remain alive and virile, how many develop diphtheria? These questions must be answered satisfactorily, and beyond all cavil, before the argument of the "bacillus in the healthy throat" can be seriously entertained. Incidentally, it may be mentioned, Kober † has found that the Klebs-Loeffler bacillus is present in the mouths of only eight per cent. of persons who have been in contact with diphtheria, and not in eighteen to twenty per cent., as has been asserted.

In regard to treatment, the management of these cases is embodied in the usual treatment of diphtheria. I can, of course, offer no rational addition to the modern measures we are all familiar with, but I shall urge for consideration a few points, especially in prophylaxis. There are other and equally imperative measures in addition to the usual disinfection, isolation, and scrupulous cleanliness of the attending physician and nurses. Among these additional precautions Aust ‡ mentions the following:

Compulsory notification by physicians and attendants; exclusion from school, not only of the children in the infected family, but neighboring children as well; special regulation for the burial of the dead; and extensive employment of antitoxine as both a curative and prophylactic agent.

In this country compulsory notification is happily the rule, and official quarantine upon the family is a routine practice. Aust's suggestion to extend the scope of the quarantine to immediately neighboring families is a wise one. The regulation for the burial of the dead is not so general, though I believe it does obtain in some communities in the United States. Think of the dangers in the practice, which is frequent, of indiscriminate kissing of the corpse by friends and relatives! Even the unguarded proximity of so highly infected a body is a menace to the health of those in its presence. As Dr. Daniel Strock said: # "Public funerals must be prevented."

G. Gabritschewski || urges that bacteriological in-

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* *Berliner klin. Woch.*, February 22, 1897.

† *Practice of Medicine.*

* *Gazette des mal. infan.*, No. 10, 1899.

† *Zeitschrift für Hyg. und Infectionskrankh.*, No. 3, 1899.

‡ *Deut. Viertel. f. öffentl. Gesundh.*, zweites Heft, 1899.

# President's address, New Jersey Sanitary Association, December 8, 1899.

|| *Wiener klinische Rundschau*, November 16, 1899.

vestigation should be made in all persons who have come into contact with a diphtheria patient, and if bacteria are found the subjects should be isolated and disinfected, just as though they were sick. He further urges that in establishments, boarding schools, and families where there are many children, the mouth, throat, and nose should be thoroughly examined once a year.

All this may seem radical when the hour of danger is to the casual observer not yet nigh. But ponder, and consider what these measures might prevent, and then, if so be you can, deny their reason. Remember well, and bear it ever in mind, the far-reaching and forceful truth that healthy mucous membranes are an undoubted safeguard against the inroads of diphtheria. Enlarged tonsils, adenoids in the nasopharynx, errors from the normal nasal breathing function of whatever cause, and any upper respiratory tract affection, all conduce toward making the child a most hospitable receptaculum for the virus of infectious disease.

Further prophylaxis should invariably be practised by the injection of two hundred to three hundred units of antitoxine into every person who has come into contact with a known case of diphtheria. The efficacy of this procedure is, I think, thoroughly established. Herman M. Biggs * and J. S. Billings, Jr.,† have written interestingly on this subject. This point is emphasized because few practitioners practise the method; yet none can properly deny the resulting immunization, and therefore, most indisputably, the benefits. Not a few physicians, no doubt, fear harmful sequelæ from the injections—skin eruptions, joint symptoms, elevation of temperature, and the like, and worse—but, beyond refute, these fears are groundless, since it has been shown that while some preparations of sera are harmful, the trouble lies in the fact that they are not carefully prepared, and perhaps are carelessly administered. Thoroughly sterile sera, carefully injected, give no unfavorable results. Some little harmless and ephemeral erythema; perhaps even a little urticaria, with slight pains in the joints—usually ankle, knee, wrist, or hand—may appear; nothing more. Immunization by this means is routine practice by the health boards of New York, Chicago, Paris, Berlin, and, I believe, other large cities. Professor Biggs has given the world a most admirable presentation of this matter. Consequently, reliable statistics, easy of access, are to be had on this point; and it will pay the unbelievers especially, and all others generally, to look into and ponder these figures.

Then, too, the inviolable rule should be laid down, that every case suspected to be diphtheritic—that is, every case which presents even the slightest probability of being diphtheria—should receive the antitoxine injection in proper amount; and the dose should be liberal and given without loss of time. Northrup and Bovaird * come to the following conclusion, which should be well heeded: "Coupling the danger of delay with the harmless nature of the antitoxine, it is quite plain that the antitoxine should be given in every case where the diagnosis of diphtheria is probable. . . . No harm is done if the case is not diphtheria, and, if it is, a great advantage is gained." Klebs † says: "Serum injections should be made in every case in which a diagnosis of diphtheria can be made even with probability, but should not be registered as diphtheria until the diagnosis is made sure by microscopic or bacteriological examination."

So far as the treatment of the positively diagnosticated cases is concerned, but little need be said here and at this time. I should like, however, to quote a remark of Edwin Rosenthal's: ‡ "Whatever has been the source, the result in the study of the statistics in the antitoxine treatment of diphtheria has been the same, and whether it be from hospital practice, private practice, or the collective investigation of different medical bodies, the surprising diminution in the death-rate has been so unanimous that this truth remains unquestioned."

One thought more. While realizing its immense value, we must not rely wholly on antitoxine, independent of all other measures. Complications, of course, are to be watched for, and treated as they arise; but there is great unanimity of opinion among the best clinicians that the local application of reliable antiseptic solutions—and a 1-to-500 or 1-to-1,000 corrosive-sublimate solution in equal parts of glycerin and water is among the best—is of great value as a routine practice in checking the rapid spread of the membrane.

To do all these things that I have, in a sadly desultory fashion, outlined and suggested, is by no means easy. Their conscientious observance means work and worry, toil and trouble; the expenditure of brain and brawn, of thought and thew. More often than right, the physician's profession is, in this world, but a means of grace, with but the unsubstantial hope of glory as a reward for his labors. But we work for results, and, despite all that can be said, it is a grand truth that pecuniary gain is not the only goal toward which we, as a profession, strive. This can be easily brought home to you.

Who among us has not felt the thrill of satisfaction, the poignant joy of power possessed, when vanishes disease, a vanquished foe, before the healing hand of hard-earned knowledge? No thought of worldly gain; no lust of money, gets entrance at this psychological moment, when the true inwardness, the real and human

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* *Medical News*, July 22 and 29, 1899.

† *New York Medical Journal*, February 17, 1900.

* Sajous's *Annual*, 1899.

† *Journal of the American Medical Association*, December 16, 1899.

‡ Paper presented at the fiftieth annual meeting of the American Medical Association, 1899.

soul of the physician reacts to the testimony of his own skill.

And when disease, with evil eye and devilish persistency, lurks among us, and effects, at each succeeding step the baffling of our every move, advancing on and trampling our but too meagre forces, pilots the way, now swift, now slow, now wavering, now sure, for Death, the great implacable, the merciless and final foe; when, I say, disease to us and our efforts proves irresistible, who among us has not felt the sting of defeat, the weakness of our sometimes vaunted strength? And perhaps there are those among us to whom the lash of conscience has been sharp, unsparing, and severe, forcing upon our unwilling selves the recollection that not every stone, perhaps, was turned in time to tell against the forces of the mortal enemy. And in these moments no thought of pelf, no assurance of monetary gain, can be a balm to the natural and psychological period of depression.

And so it is made plain that the pecuniary emolument is not alone the resultant for which we strive; and it is obviously well that it is so. Let us, therefore, with a will, and a consciousness of no omissions which might threaten the welfare of the strong as well as the weak and ill, bend our efforts toward the annihilation of the forces which attack humanity.

And of the reward?—What is success?

A CASE OF MEDIASTINAL GROWTH
WITH
SUBSEQUENT TUBERCULOUS DISORGANIZATION MISTAKEN FOR ANEURYSM OF THE ARCH OF THE AORTA.

By FREDERIC GRIFFITH, M. D.

It would seem that a mechanical disease, or a study in hydraulics, which aneurysm is, could scarcely give rise to a question in diagnosis; yet we pile up symptom upon symptom and weave a tissue of evidence which at times proves merely circumstantial. When, however, the final judgment is given from the bench of post-mortem examination, even though we have drawn the wrong conclusions, from the thought that something new has been learned we experience a sense of satisfaction. The evidence was not wrong, but the deductions therefrom were.

The history of a case which I have watched until the end, to find my opinion, based upon the array of physical signs, erroneous, may be of interest:

Sarah ——, aged seventy years, has always been very active and strong, with great powers of endurance. The present has been her only sickness. Is of Irish parentage; family history negative; has one sister living, aged eighty-nine years. As a starting point the only history the patient can give is that she had been in the habit of carrying an invalid lady, and thinks that she strained her chest some fifteen years ago. In June, 1898, the sickness first began with a dull pain, or rather a sense of weight, in the left chest under the upper end of the sternum.

Physical Examination.—Inspection shows, considering age, a well-nourished and well-formed chest, normally expansive on each side. Palpation, negative. Percussion: Chest sounds of normal resonance. Auscultation: Heart sounds clear, also respiratory murmur. Radial pulses equal. Temperature, 98.3° F. The urine contains no sugar, albumin, or casts. Bowels generally constipated. Sleeps well, appetite good.

July.—Pain still continues, slight at times, then again sharp. No other changes noted.

September.—She was taken with vomiting and passed through an attack of gastric indigestion lasting five days. Pain in chest, of a burning and boring character, at times sharp and lancinating, continues.

November.—First development of general symptoms of aneurysm of the arch of the aorta.

Physical Condition.—Body well nourished, color good, eyes bright, pupils equal, some loss of strength. A prominence is now visible in the left chest, formed by the bulging of the manubrium, the inner third of the clavicle, and the second and third ribs, which are spread; the tissues covering this whole area are œdematous. There is an expansile heaving pulsation, both seen and felt. A systolic thrill can be felt at times. The percussion note over the whole area is dull and circumscribed, running into the heart dullness below. The right lung is resonant; the left also, save for an area in the superior lobe toward the middle line which is dull. The respiratory sounds are normal. There is no murmur or bruit. The heart sounds are clear and sharp. From this period until the following June her condition showed little change. Examination of the urine at intervals showed no renal involvement.

June, 1899.—Prominence enlarged; skin tense, glossy, and red, with dilatation of superficial veins. Radial pulses unequal. Pain marked, sharp, and lancinating. Great weakness with loss of power. No fever. Dyspnœa, dysphagia, sharp cough, whispering voice; unilateral symptoms of sweating and œdema of left side of face and left arm increasing at first, then almost entirely subsiding; left pupil contracted. No night sweats excepting on the head at times. The course of the temperature in the case has been noteworthy. At no time has the temperature reached 100° F. save during the attack of gastric indigestion in September, 1898. The temperature has ranged between 97.4° and 99° F., and has never led me to suspect a hectic condition or a pus infection. Paralysis of left vocal cord. Tracheal tugging. A radiograph taken at this time gives a negative result, nothing definite being made out from the developed plate.

During the course of the next six weeks, at the beginning of which period I was looking for rupture externally of the aneurysm at any moment, the symptoms of pressure commenced to be relieved anteriorly, but developed rapidly posteriorly over the vertebræ in the upper dorsal region to the left of the middle line and the upper portion of the scapula. The patient found most relief from dyspnœa, pain, and pressure by sitting with the arms braced on the knees, the head hanging between her hunched shoulders. She would at times complain of a ball rising up in her throat and would subsequently become very dyspnoic. The whispering voice passed away to a degree, though her voice was now weak in consequence of her exhausted general condition. The dyspnœa became more marked as the patient became too weak to sit up, and on the 6th of September she died.

The treatment carried out consisted, briefly, of periods of enforced rest in bed, regulation of diet, and potassium iodide, after the symptoms became well marked. Later, thinking it useless, I stopped it. Morphine to control the pain. The bowels were kept open with enemas. At one time I considered the advisability of gelatin injections, also of the introduction of pins or wire, to cause coagulation; but it seemed likely that if I did this at that time, since rupture seemed inevitable, I should but hurry the end and my efforts would but determine the location of the exit. Then almost under my hands the anterior pressure symptoms disappeared markedly, giving place to posterior ones. The heart sounds became fainter and softer, owing to the recession.

On the evening of the 6th I made a partial post-mortem examination. Laying open the thorax and turning out the sternum, I found its upper third bound down with adhesions; the right lung normal and deeply pigmented; the upper half of the left lung collapsed, some breathing areas toward the outer perimeter alone remaining, the rest being a big tuberculous cavity with the ends of blood-vessels opening into it, containing about three ounces of fluid and masses of cheesy necrotic tissue the color and consistence of pea soup. The pericardium was not in sight, its place being taken up by a mass of mediastinal glands the size of my two fists, in which were imbedded the arch, the œsophagus, the bronchi, and the lower trachea. The heart was pushed far back and to the right of the middle line; it had atrophied to about two thirds its normal size, having undergone a brown degeneration, but there was no other lesion of this organ. The aorta was twisted somewhat on itself, owing to the displacement. The arch was surrounded by similar glandular masses, but of more solid consistence, which when torn off revealed the artery intact, its external coat standing out white and glistening. Through the mass were beginning necrotic areas with curdy masses and fluid.

If at any time during the preceding six months I had persisted in a radical measure I must have determined the true nature of the mass and fluid contained, and with a fine needle no harm could possibly have been done.

The emaciation and weakness during the first twelve months I do not consider sufficient for a tuberculous process. I would rather consider that after causing the tumor in front to press the sternum and ribs out, as noted, the growth was secondarily infected from a focus in the left lung, its forward march was stayed, and it became the necrotic, disorganized mass found at the post-mortem, while the posterior portion was hardly more than softened and its bulk but little disturbed; yet the tuberculous process seemed to be thoroughly infiltrated throughout. The small quantity of blood expectorated, which was readily accounted for by the pressure on the trachea and œsophagus, led me to think that quantities of it must have been swallowed.

Dr. Flint says that aneurysm may be suspected as a consequence of the following symptoms of pressure: 1. Venous congestion, causing œdema of the left face, head, and arm. 2. Feebleness of respiratory murmur over the trachea and left primary bronchi, and especially flatness on the left upper chest. 3. Pressure on the left recurrent laryngeal nerve (paralysis of left vocal cord). 4. Voice whispering (somewhat better at the last). Pressure on the œsophagus, causing obstruction, the primary symptoms being vomiting and pyrosis. Pressure on the thoracic duct, causing emaciation. Pressure on the sympathetic, causing contraction of the pupil. Implication of vertebræ, causing erosion.

In Thoracic Aneurysm.—Inspection: Abnormal prominence and pulsation in the upper sternal region; dilatation of superficial veins also noted, and, in advanced cases, the skin over the prominence red and glossy. Palpation often detects an expansile heaving pulsation and a systolic thrill. A tracheal tugging, felt by grasping the cricoid cartilage. Radial pulses unequal, the left radial pulse delayed and diminished. Percussion: Increased dullness and increased resistance. Auscultation: No bruit or murmur. Pain is a prominent symptom—pressure pain forward against the sternum and backward against the vertebræ and back of the scapula. Weakened vision without interference with the contracting powers of the pupil.

Da Costa states that no thrill is necessary. The impulse may be accompanied by a distinct thrill, yet this is not always present, and when present not constant. It is thus a serious mistake to regard the thrill as the requisite sign of an aneurysmal enlargement, and yet there is no mistake more common, excepting, perhaps one to consider that the motion of the blood in the sac must necessarily engender a murmur.

Finally, Dr. Ashhurst says that a symptom which is often present, though frequently absent, is a sound at each pulsation.

As a consequence of the pressure, bones are absorbed (usually without suppuration); nerves flattened and thinned, with functional derangement, motor and sensory, according to the nerve implicated, the trachea and bronchi are closed, and the vessels occluded.

A percussion outline of the solid mass should be made to see if it corresponds with any viscus.

19 West Thirty-fifth Street.

Therapeutical Notes.

Wafers for Amenorrhœa.—The *Gazette hebdomadaire de médecine et de chirurgie* for April 1st attributes the following formula to H. C. Bloom:

℞ Strychnine sulphate	2 grains;
Oxalic acid	9 "
Iron peptonate, Manganese lactate, } each	2 drachms;
Compound extract of colocynth	30 grains.

M. Divide into sixty wafers.

S. One to be taken an hour after each of the principal meals.

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EXTERNAL CEPHALOMETRY OF THE FŒTUS.

In the April number of *Obstetrics* there appears a translation of the substance of an important article by Dr. M. Perret, published in *l'Obstétrique* for November, 1899. It is well known to obstetricians that in cases of pelvic contraction that are not excessive it is quite practicable as a rule to preserve the lives of both mother and child by bringing on labor at a time when the fœtus is sufficiently advanced in development to be viable and yet not too much developed to pass the superior strait of the pelvis. But it is well known also that, in order to attain the best results, this particular point of time must be very nicely chosen. Dr. Perret points out that, as everybody will admit, it is very unsatisfactory to depend upon the length of time that has elapsed since the cessation of the last menstruation, and he gives a striking illustration of this fact. The woman, according to her menstruation record, ought to have been at term at the end of October, but it was not until the 20th of November that external cephalometry showed that the induction of labor was necessary.

The diameter of the fœtal head which must bear the requisite relation to the obstetrical conjugate is the biparietal, and to ascertain this diameter early enough in gestation to interfere successfully has been the object of many painstaking investigations. It is rarely that the biparietal diameter can be measured directly, except in primiparæ in whom the head has already engaged, but Dr. Perret has arrived at a means of deducing it by its proportion to the occipitofrontal, which can readily be measured by means of his cephalometry compasses applied to the abdominal wall. From the measurement registered by the index double the thickness of the abdominal wall—that is, the thickness of a fold of it pinched up—is to be deducted to ascertain the actual occipitofrontal diameter, and from this there must further be subtracted about twenty-five millimetres, that being the average difference between the two diameters as established by a great number of careful observations. This is the difference at term, but Dr. Perret is satisfied that in the eighth month it is not so great, not more than about twenty millimetres.

Dr. Perret's system of estimating the biparietal diameter has been more or less in use, in his hands and those of several other French obstetricians, since 1894, and the results thus far published appear to be as near precision as we can hope to get. The continued employment of it, we should think, must result in a notable saving of fœtal life, but it can not be denied that great carefulness and no little skill, to be acquired only by experience, are necessary in carrying it out.

THE PUBLIC CARE OF CHRONICALLY DISEASED CHILDREN IN THE STATE OF NEW YORK.

In our issue for March 31st we referred editorially to what was being done in the Old World, and especially in Russia, toward the public care of chronically diseased children, and we dwelt upon the duty of that work from a humane point of view, and its absolute value to the community as a means of transferring many future adults from the liability to the asset columns of the national balance sheet. We subsequently learned with considerable satisfaction that a step in this direction had already been taken in our own country by the State of Minnesota, and expressed our satisfaction in a leading article in our issue for April 14th, which leading article concluded with the following words: "We do not think that any further words are necessary to enforce upon the profession and the authorities in all parts of the Union the desirability of the practical application of the principle of the public care of chronically diseased children."

About the time that editorial was being penned—viz., on April 11th—our own State came into line with this admirable march of progress by the passage of an Act to Establish the New York State Hospital for the Care of Crippled and Deformed Children. The author of the bill, which now ranks as an act upon the statute book, Dr. Newton M. Shaffer, is to be congratulated equally with Dr. A. I. Gillette, of St. Paul, Minnesota, on the success of their efforts for the initiation of this sound economic policy.

When we said, however, that no further words were necessary to enforce the desirability of the practical application of the principle of the public care of chronically diseased children we were not aware that in a communication to the New York *Tribune* for April 2d, entitled Aid for Crippled Children, the following objections to the establishment of such an institution had been raised—viz.: 1. That the number of crippled and deformed children did not warrant it. 2. That such an institution would tend to pauperize both the parents and the children.

Now, as regards the first objection, there are no accurate statistics available concerning the number of crippled and deformed children in either this city or State; but we are informed that, omitting the hernia department, there were 4,695 crippled and deformed patients treated at the Hospital for the Ruptured and Crippled during the year 1899. During the same year the Orthopædic Hospital treated 3,237, making a total of 7,932 for these two institutions alone, not to mention the many hundreds treated in the outdoor departments of the Bellevue, New York, St. Luke's, and the Roosevelt Hospitals, the Vanderbilt Clinic, the Post-graduate Medical School, the New York Polyclinic, and other dispensaries and hospitals. In the two first-named institutions the patients were mostly children, and probably in the others also. It is probable that there are many hundreds more in Greater New York receiving no treatment at all, as well as a goodly number inevitably prematurely discharged from hospitals to remain hopelessly deformed for life unless aid is forthcoming. And what about the rest of the State outside the city of New York? It was argued in the *Tribune* that there had been no trouble to find room at the hospitals for surgical cases of this kind; but it must be recollected that cases requiring operation, as well as acute cases, usually find a ready entrance to hospitals, not merely because they are operative, but because their stay in hospital is likely to be relatively brief. It is not, however, so easy to secure admission for a case of chronic or progressive deformity which does not require operation, but which nevertheless demands just as assiduous hospital care as though it did.

On the contrary, it is to be feared that beds have only too frequently to be emptied of occupants with deformities unsuited to operative treatment on the principle of the greatest good of the greatest number in the time and by the means at disposal, in order to make way for other cases less needy, perhaps, but more susceptible of speedy cure.

Nearly all the patients who will come under the provisions of the act—for it is only for the poor—require hospital care for the simple reason that adequate care at home is only exceptionally possible in such cases.

No system of voluntary dispensary attendance or home visitation can supply the almost continuous care demanded. Many patients can not even afford the necessary car fare to make regular visits, while the pecuniary loss of a day's work by a parent to make even a single visit must be taken into account; and how much can an occasional visit, or even periodical visits, to the homes of patients by a trained nurse or a dispensary surgeon accomplish under the circumstances of tenement-house life, surroundings, and discipline? In the treatment of tuberculous disease of the spine and joints, especially, we can not half cure the condition. The facts that deformity has been overcome in hip-joint disease, or its further progress checked for a time in Pott's disease, and that pain is no longer present, are not, unfortunately, positive evidence that the morbid process itself has been arrested. While the patients with knock-knees, bowlegs, clubfoot, etc., will require a much shorter time for recovery, prolonged hospital care is necessary for the recovery of tuberculous joint and spinal diseases and must be given to accomplish successful results.

As to the question of pauperism, there is the vast class of "cripples," as distinguished from the "deformed," to be cared for and rendered as self-supporting and serviceable to the community as circumstances allow. What is done elsewhere can be done here. The Society for Cripples and Invalids of Copenhagen, for instance, in 1895 treated 373 patients, including paralytics, those lacking a hand or some portion thereof, a leg or an arm, all of whom, being supplied with artificial members, were taught industries compatible with their respective physical deficiencies, such as cabinet-making, brush making, hand weaving, plain needlework, dressmaking, etc. The Industrial School for Crippled and Deformed Children in Boston affords another example, and such a department is to be established in the new hospital created under this act. It is hard to see where the pauperism to the patient lies in making many otherwise useless members of the community self-supporting; while, as regards the parents, surely the removal of the incessant strain, not only pecuniary but also of anxiety and responsibility, from the hard-worked seamstress, the plodding mechanic, or the widow who earns a mere pittance by washing or scrubbing, will enable them to far more effectually face the daily round of toil in support of their families when they know that their afflicted one is well cared for in some hospital.

But if this much can be said for those who live in the city, what shall we not say of the benefits of the institution to those who live in the State outside? They are usually ineligible for relief by city institutions to begin with, at any rate except on impracticable terms. The distance and expense of railway travel preclude their becoming dispensary patients. At home they are debarred from the ordinary occupations of childhood, from proper schooling, from either adequate attention for, or the use of apparatus subsidiary to, their treatment. Are they to be neglected? Can they, ought they to be provided for by private charity?

So much for the *raison d'être* of the institution. Now for the institution itself. It is governed by a board of managers consisting of five citizens of the State appointed by the governor with the consent of the senate, and the initial appointments must, we think, be deemed eminently satisfactory. They are: President, the Right Reverend Henry C. Potter, D. D.; secretary and treasurer, George Blagden, Jr.; surgeon in chief, Dr. Newton M. Shaffer; J. Hampden Robb and J. Adriance Bush. A safeguard against abuse is found in section eight of the act, which provides that "no patient shall be received except upon satisfactory proof made to the surgeon in chief by the next of kin, guardian, or a State, town, or county officer . . . showing that the patient is unable to pay for treatment." The legislature has appropriated the sum of fifteen thousand dollars toward the maintenance of the institution, and donations and subscriptions may be received and used by the board, some five thousand dollars having already been raised. Section 5 provides that "all surgical and medical officers of the hospital, except the surgeon in chief, shall render their services gratuitously.".

The exception as regards the surgeon in chief has, however, in the present instance been disinterestedly waived by the first incumbent of the office, Dr. Shaffer, who has declined to accept any remuneration.

It seems to us that there can be little doubt about the public need that the new hospital will fill, and we hope that in the near future Dr. Shaffer's disinterested energies as the promoter of the institution will be as abundantly vindicated as have been those of Dr. Knight, the founder of the Ruptured and Crippled Hospital in 1863, and of Dr. Marion Sims, the founder of the Woman's Hospital, both of whom were, equally with Dr. Shaffer, confronted with the stock objection that the number of special sufferers for whom their particular institutions were designed was not sufficient to warrant their establishment.

THE ELECTIVE SYSTEM IN MEDICAL EDUCATION.

The presidential address recently delivered before the Fifth Congress of American Physicians and Surgeons by Dr. H. P. Bowditch, of Boston, must be regarded, we think, as one of the most carefully elaborated essays that have ever been written on medical education or, we might add, on education in general as regards many of the problems which that subject presents. The address is printed in full in the *Boston Medical and Surgical Journal* for May 3d. It is entitled The Medical School of the Future. It deals with the theme so comprehensively that it should be read and studied by all persons who are called upon to take part in forming plans of medical instruction and by all persons about to enter upon the study of medicine.

The limitations of our space do not admit of our considering more than one of the many questions handled by Dr. Bowditch. The one we have selected is that of the elective system in the medical curriculum. Under the present compulsory system, says Dr. Bowditch, many things are taught which are subsequently found to be of use to only a portion of those who receive the instruction. "Thus," he goes on to say, "the surgical anatomy of hernia is taught to men who will subsequently devote themselves to dermatology, future obstetricians are required to master the details of physiological optics, and the microscopical anatomy of muscles forms a part of the instruction of men destined to a career as alienists. Now, no one can doubt the propriety of including instruction on all these subjects in the curriculum of a medical school, but it may be fairly questioned whether every student should be forced to take instruction in them all."

Dr. Bowditch does not ignore the manifest fact that certain things should be taught to every medical student, things of which no practitioner can remain ignorant and still be a safe custodian of his patient's health, but he maintains that there are other things which some physicians need to know more thoroughly than they could be made to know if they had at the same time to master the minutiæ of all the things that all varieties of the medical career might require, although these things may not be at all necessary to the equipment of the great majority of practitioners.

As for the objection that the elective system might lead to the production of a class of physicians who, owing to the early specialization of their work, would be inclined to overrate the importance of their specialty and see in every disease an opportunity for the display of their special skill, Dr. Bowditch properly remarks that such a result would more probably follow imperfect than too early instruction in the work of a specialist, and that, "since the elective system tends to encourage thoroughness in special instruction, the evil may be expected to diminish rather than to increase."

CHANCRE OF THE GROIN.

Among the varieties of extragenital chancre, chancre of the groin is certainly not common. In the *Regular Medical Visitor* for May 15th Dr. Ohmann-Dumesnil reports two cases. In the first case the patient, a laborer, was infected apparently by a prostitute who, while he was with her, turned her back to him and her buttock, upon which she had a pustule, against his groin. The other case was that of a little girl, nine years of age, of excellent character, upon whom an attempt at rape was alleged. Dumesnil suggests that "the brute in human shape who attempted to rape an innocent child in his erotic furor struck the child in the groin with his infected virile member, and in that manner inoculated her." Two noteworthy points are the inoculation through the skin, and the absence of induration of the lymphatic glands. The groin, however, is particularly liable to be the seat of intertrigo; moreover, it is stated that neither patient was sufficiently emaciated for the deeper glands of the abdomen to be made out.

THE SKIPPING ROPE AS A THERAPEUTIC MEASURE.

The *New York Times* for May 25th, citing the *Birmingham Daily Gazette,* states that "a West End physician" in London has prescribed daily exercise with the skipping rope for that condition of the liver and digestive organs consequent upon want of outdoor exercise, late hours, hard work, and impure air. Ludicrous as the idea of portly, middle-aged fathers of families vying with their six-year-old daughters may seem, there is a great deal of practical common sense in the suggestion; and a regular course of skipping practised by those whose lives are spent in the daily round of sedentary pursuits would probably counterbalance the evil effects of confinement in offices and the substitution of trolley cars for "constitutionals."

THE HUXLEY MEMORIAL.

In the honor roll of the closing century few names will stand more clearly out in brilliant characters than that of Thomas Henry Huxley. It was eminently fitting that this closing year of the century should have seen the unveiling in the Natural History Museum, South Kensington, by His Royal Highness the Prince of Wales, in the presence of a goodly concourse of representative scientists, among whom may be noted Professor Ray Lankester, Sir Joseph Hooker, and Professor Sir Michael Foster, of a statue of the great scientist. Even the Church was represented in the person of the Bishop of Winchester, whose predecessor had been one of Huxley's most doughty opponents. Professor Ray Lankester stated that from all parts of the world besides England, from every State of Europe, from India, from the remotest colonies, and from the United States of America had subscriptions, amounting in all to nearly $17,000, been received for the Huxley Memorial.

THE PLAGUE IN SAN FRANCISCO.

The reports from San Francisco at the time of our going to press are somewhat contradictory, but, on the whole, we gather from them that there is at present really no bubonic plague in the city. Nevertheless, "Chinatown" undoubtedly ought to be radically cleansed, and there is good reason to believe that that will be done promptly.

AN AMERICAN AWARD TO PROFESSOR RÖNTGEN.

The *New York Times* for May 27th states that at the commencement exercises of Columbia University this year the award of the Barnard medal will be made to Professor Röntgen, of the University of Würzburg, for the discovery of the x ray. As the medal is, on the bequest of the late President Barnard, of Columbia, to be bestowed every five years on the person who during the preceding interval shall have made "the most important step in physical or astronomical science, or a novel application of science beneficial to the human race," there can be little doubt that Professor Röntgen has earned the distinction.

THE OCCASIONAL ADVANTAGE OF LONG HAIR.

If we may judge from a story recently reprinted in the *New York Times* from the *Anaconda Standard,* there may be a decided advantage on occasions in having long hair. It is that of a drunken Cree Indian who crept in behind the switchboard of an immense electric power house, to sleep off the fumes of his fire water, and for the time being shut off the electrical supply of the city of Butte. He was speedily rescued and found to be uninjured. His escape was attributed to the fact that his long hair, worn in a braid, had been drenched by the rain and, coming alone in contact with the electrical current, had short-circuited it.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported for the two weeks ending May 26, 1900:

DISEASES.	Week ending May 19.		Week ending May 26.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	17	4	17	6
Scarlet fever	154	16	114	10
Cerebro-spinal meningitis	0	4	0	7
Measles	618	23	577	22
Diphtheria	251	45	249	42
Laryngeal diphtheria (croup)	13	9	6	3
Tuberculosis	207	171	211	185
Chicken-pox	12	0	18	0
Small-pox	2	1	4	0

The Omega Upsilon Phi Medical Fraternity.—The Epsilon (or University and Bellevue Hospital Medical College) Chapter held its annual banquet at the Hotel Marlborough on Monday evening, May 28th. The senior master's address was delivered by Dr. Vernon Blythe, and toasts and responses were given as follows: Fraternity, Dr. Henry C. Coe; The Profession, Dr. David Bovaird; Any Old Thing, Dr. William Brooks; and Epsilon, Dr. W. V. Quinn.

The New Minister from Argentina.—*Science* for May 25th states the Dr. Eduardo Wilde, the new minister to the United States from Argentina, was formerly minister of public instruction and is known for his studies in yellow fever.

Change of Address.—Dr. Ernest Frederick Luhrsen, to No. 336 Gates Avenue, Brooklyn.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 19 to May 26, 1900:*

Bailey, Guy G., Acting Assistant Surgeon, United States Army, will report to the commanding general, Fourth District, Department of Northern Luzon, for temporary duty with troops at San Isidro, Province of Nueva Eciia, Luzon.

Carr, L. C., Major and Surgeon, United States Volunteers, will procced to Nuevitas, and, if necessary, to the camp of the Eighth Cavalry and to Puerto Principe, and inspect the health conditions and arrangements made for the protection of the troops against epidemic diseases.

Harris, Henry S. T., Major and Surgeon, will report to the commanding general, Fourth District, Department of Northern Luzon, for temporary duty as district surgeon.

Ives, Frank J., Major and Chief Surgeon, will proceed to Rowell Barracks, Pasa Caballos, Cuba, to make an inspection of that post, and return to Matanzas, Cuba.

Turrill, Henry S., Major and Surgeon, will proceed to the Philippine Islands on the transport *Logan.*

Wetherill, Henry E., First Lieutenant and Assistant Surgeon, United States Army, will report for duty on the transport *Thomas* on the return voyage to San Francisco, where he will report to the commanding general, Department of California, for orders.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending May 26, 1900:*

Braisted, W. C., Passed Assistant Surgeon. Orders to the *Mayflower* revoked. Detached when the *Detroit* is placed out of commission, ordered home, and directed to hold himself in readiness for orders to sea.

Costigan, G. D., Passed Assistant Surgeon. Detached from the Boston Navy Yard and ordered to temporary duty on the *Pensacola,* and then to the Asiatic Station *via* the *Gaelic.*

Davis, E., Assistant Surgeon. Detached from the Naval Hospital, Brooklyn, and ordered to temporary duty on the *Pensacola,* and then to the Asiatic Station *via* the *Gaelic.*

Douglas, S. W., Pharmacist. Detached from the *Wabash* and ordered to the Key West Naval Station, Florida, for such duty as may be assigned, as relief of Hurd, I. N., Pharmacist.

Hurd, I. N., Pharmacist. Upon reporting relief, detached from the Key West Naval Station, Florida, and ordered to the *Wabash.*

Kennedy, J. T., Assistant Surgeon. Detached from the *Independence* and ordered to the Asiatic Station *via* the *Gaelic.*

Lippitt, T. M., Assistant Surgeon. Detached from the *Oregon* and ordered to the *Newark.*

Smith, G. T., Passed Assistant Surgeon. Detached from the Naval Laboratory and Department of Instruction, Brooklyn, and ordered to the *Mayflower.*

Walton, T. C., Medical Director. Detached from duty at the Naval Laboratory, Brooklyn, and from other duty, and ordered home to await orders and retirement.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the United States Marine-Hospital Service for the Seven Days ending May 24, 1900:*

Woodward, R. M., Surgeon. To proceed to Puerto Rico on special temporary duty.

Eager, J. M., Passed Assistant Surgeon. Relieved from duty at Cincinnati and directed to proceed to Norfolk, Virginia, and assume command of the service.

McMullen, John, Assistant Surgeon. Bureau order of April 2, 1900, directing Assistant Surgeon McMullen to assume command of the Tortugas Quarantine, temporarily revoked, and directed to report to the medical officer in command of that station for duty.

Kerr, John W., Assistant Surgeon. Bureau order of May 7, 1900, directing Assistant Surgeon Kerr to proceed to Hongkong, China, for duty, suspended, and directed to report to the medical officer in command, San Francisco Quarantine, for temporary duty.

Schereschewsky, J. W., Assistant Surgeon. Relieved from duty at Havana, Cuba, and directed to proceed to New Orleans and report to the medical officer in command for duty and assignment to quarters.

Amesse, J. W., Assistant Surgeon. Bureau order of May 7, 1900, directing Assistant Surgeon Amesse to proceed to Honolulu, Hawaii, for duty, suspended, and directed to report to the medical officer in command, San Francisco Quarantine, for special temporary duty.

Wilson, R. L., Assistant Surgeon. To report to the medical officer in command, San Francisco Quarantine, for duty.

Berry, T. D., Assistant Surgeon. Upon being relieved from duty at New Orleans, to proceed to Havana, Cuba, and report to Surgeon H. R. Carter for duty.

Earle, B. H., Assistant Surgeon. Relieved from duty at Detroit and directed to proceed to the San Francisco Quarantine and report to the medical officer in command for duty.

Lloyd, B. J., Assistant Surgeon. Relieved from duty at Chicago and directed to proceed to the San Francisco Quarantine and report to the medical officer in command for duty.

Goldsborough, B. W., Acting Assistant Surgeon. Granted leave of absence for two days.

Stevenson, J. W., Acting Assistant Surgeon. To assume temporary charge of the service at Cincinnati, *vice* Passed Assistant Surgeon J. M. Eager, relieved.

Wetmore, W. O., Acting Assistant Surgeon. Relieved from duty at the Immigration Depot, New York, and directed to report to the medical officer in command, Cape Charles Quarantine, Virginia, for duty and assignment to quarters.

Roehrig, A. M., Hospital Steward. To report to the medical officer in command, San Francisco Quarantine, for special temporary duty.

Richardson, S. W., Hospital Steward. To report at Washington for special temporary duty.

Society Meetings for the Coming Week:

Monday, *June 4th:* New York Academy of Sciences (Section in Biology); German Medical Society of the City of New York; Morrisania Medical Society, New York (private); Brooklyn Anatomical and Surgical Society (private); Corning, New York, Academy of Medicine; Utica, New York, Medical Library Association; Boston Society for Medical Observation; St. Albans, Vermont, Medical Association; Providence, Rhode Island, Medical Association; Hartford, Connecticut, Medical Society; Chicago Medical Society.

TUESDAY, *June 5th:* New York Neurological Society; Buffalo Academy of Medicine (Section in Surgery); Elmira, New York, Academy of Medicine; Ogdensburgh, New York, Medical Association; Syracuse, New York, Academy of Medicine; Hudson, New Jersey, County Medical Society (Jersey City); Androscoggin, Maine, County Medical Association (Lewiston); Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

WEDNESDAY, *June 6th:* New York Academy of Medicine (Section in Public Health); Society of Alumni of Bellevue Hospital; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond, New York (New Brighton); Penobscot, Maine, County Medical Society (Bangor); Bridgeport, Connecticut, Medical Association.

THURSDAY, *June 7th:* New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, New York; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington); Medical Society of City Hospital Alumni, St. Louis; Atlanta Society of Medicine.

FRIDAY, *June 8th:* Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties, New York.

SATURDAY, *June 9th:* Obstetrical Society of Boston (private).

Births, Marriages, and Deaths.

Married.

CURRIE—HANSON.—In Webster Groves, Missouri, on Thursday, May 10th, Dr. Donald Herbert Currie, United States Marine-Hospital Service, and Miss Helen Hope Hanson.

HAWKE—KNAPP.—In Red Bank, New Jersey, on Wednesday, May 23d, Dr. Edward S. Hawke, of Trenton, and Miss Adelaide Knapp.

HELFRICH—SWAN.—In Passaic, New Jersey, on Monday, May 21st, Dr. Charles Henry Helfrich, of New York, and Miss Edith Hale Swan.

MORRIS—CLARK.—In New York, on Monday, June 28th, Dr. Lewis Rutherford Morris and Miss Katherine Stauffer Clark.

SAVILLE—WHITTIER.—In Boston, on Tuesday, May 22d, Mr. Huntington Saville and Miss Anne Pierce Whittier, daughter of Dr. Edward N. Whittier.

SCHUMAN—HATCH.—In Boston, on Saturday, May 5th, Dr. A. T. Schuman, of Gardiner, Maine, and Miss E. Frances Hatch.

STONE—SERRATE.—In Matanzas, Cuba, on Thursday, May 10th, Dr. John H. Stone, United States Army, and Miss Maria Dolores Serrate.

Died.

ANDERTON.—In New York, on Wednesday, May 23d, Frances Anderton, daughter of Dr. William B. Anderton.

COLLINS.—In New York, on Sunday, May 20th, Dr. Charles Smith Collins, in the thirty-eighth year of his age.

EMERY.—In Penacook, New Hampshire, on Wednesday, May 23d, Dr. Alfred E. Emery, in the sixtieth year of his age.

OTIS.—In New Orleans, on Thursday, May 24th, Dr Fessenden Nott Otis, of New York, aged seventy-five years.

Obituaries.

FESSENDEN NOTT OTIS, M. D.

AT the time of his death, which occurred in New Orleans on Thursday, May 26th, Dr. Otis was in the seventy-sixth year of his age. He gave up his large special practice in New York several years ago, on account of declining health, and traveled to various parts of the world. He spent last winter in New Orleans. The early years of Dr. Otis's professional life were spent in the medical service of the Panama Railway. Then he entered upon general practice in New York. It was not long before he became a conspicuous figure in the New York profession. He did a large family practice for several years, and then adopted the specialty of genito-urinary surgery. In this field he achieved such distinction as rarely falls to the lot of a man with so little in the way of hospital opportunities as he had enjoyed. His memory will always be associated with his demonstration of the large calibre of the urethra as a whole, compared with the meatus urinarius externus, and with his establishment of the doctrine that urethral stricture, however slight, should be overcome. It was in the face of great difficulties that he accomplished these things, and he is entitled to much credit for them. Had it not been for them, he would still have lived in the history of surgery as the inventor of a most ingenious urethrometer and an equally valuable dilating urethrotome.

In addition to his professional qualifications, Dr. Otis was notable for his taste in matters of art and for his geniality and warmth in social life. Although he had for some years been most of the time absent from the scene of his great achievements, his death will come home to the great body of New York physicians as a personal loss. It is seldom that such ability is associated with such graces as were his. The loss of a man of Dr. Otis's character leaves a void in the profession.

Pith of Current Literature.

Medical Record, May 26, 1900.

Remarks on Some of the Conditions Simulating Appendicitis and Periappendicular Inflammation. By Dr. E. G. Janeway.—The author gives a few instances which sufficiently illustrate the need of careful thought lest we fall into the error of considering every case with pain and tenderness in the right iliac fossa as appendicitis. 1. Neuralgia affecting the lower abdominal nerves on the right side gives rise to a belief that appendicitis exists, but a close scrutiny of the history and a study of existing conditions should lead to a correct diagnosis. 2. Renal colic, especially if associated with fever, and hydronephrosis are frequent causes of incorrect diagnosis. 3. Cholecystitis has been operated upon under the impression that a condition of periappendicular inflammation existed. 4. Intestinal conditions —*e. g.*, perforations of ulcers; gastro-intestinal catarrh with colic; tuberculous ulcers with tuberculous peritonitis about the cæcum; cancer of the cæcum. All these are among the conditions referred to in the title, as also abscess of the ovary, retroperitoneal abscesses, and the general aches and pains connected with follicular amygdalitis.

A Contribution to the Treatment of Rupture of the Parturient Womb. With a Critical Review of the Vaginal Operation. By Dr. A. V. Wendel.—In threatened uterine rupture the woman is to be delivered at once by the method which does not increase the excessive intra-uterine tension. After rupture, delivery *per vias naturales* is permissible only if the uterine injury is not aggravated thereby. Vaginal hysterectomy is the elective procedure in all cases, but should be supplemented by an abdominal section whenever necessary:

Loss of Hair; a Clinical Study founded on Three Hundred Private Cases. By Dr. George Thomas Jackson.

Cellular Specificity and its Bearings on Neoplasms. By Dr. B. H. Buxton.

Notes on the Treatment of Chronic Heart Disease by the Artificial Nauheim Baths. By Dr. Abraham Mayer.—The author believes that the artificial Nauheim baths, like the natural ones, together with the resisting exercises, are the most efficacious and lasting therapeutic remedy yet devised.

The Medical News, May 26, 1900.

Cystitis Papillomatosa. By Dr. Frederic Bierhoff.

Medicinal and Non-medicinal Remedies; with Points on Hydrotherapy, Diet, and Massage, in Certain Diseases attended with High Temperature. By Dr. Charles E. Page.—Starting out with the statement that "it is a glaring, if not a criminal, fault of our medical schools that nothing is done in the way of teaching hydrotherapy or massage," Dr. Page gives some cases that illustrate his text. The evils of overfeeding and of overclothing are also touched upon.

Organo-therapy in Tabes and Other Nervous Diseases. By Dr. Martin A. H. Thelberg.—The author is by no means skeptical as to the therapeutical value of spermin, and finds it difficult to agree with Charcot and Collin as to its inefficacy in ataxia. Two cases, (1) locomotor ataxia, (2) paralysis agitans, are given in which great improvement has followed the use of the orchitic fluid.

New Method for Retroperitoneal Drainage of Pyosalpinx, with a Report of Five Cases. By Dr. Leon F. Garrigues.—That retroperitoneal drainage is a comparatively safe operation, and one whose technique is not very difficult; that it leaves the generative organs *in situ*, while a permanent cure may, as a rule, be predicated, is the opinion of the author. Wherefore, vaginal incision and drainage in all pelvic suppurations in contact with the vagina, and retroperitoneal drainage in all pelvic suppurations not in contact with the vagina, is advocated.

Inaugural Address. By Dr. Edward D. Fisher.—Before the meeting of the American Neurological Association.

The Philadelphia Medical Journal, May 26, 1900.

Rickets. By Dr. John Lovett Morse.—Interestingly treated and illustrated by ten figures, the article can not be summarized through lack of space.

The Hospitals for the Insane and the Study of Mental Diseases. By Dr. Stewart Paton.—A plea for more organized effort in the study of this most piteous and moving calamity that can overtake man.

Intestinal Indigestion and its Consequences. By Dr. William Henry Porter.

The Surgical Treatment of Congenital and Pathologic Disfigurements of the Face. By Dr. John B. Roberts.—"Lupus" should be removed by dissection and covering the space with skin shavings, by scraping the diseased structures away with the curette, or by using strong caustics. The use of tuberculin was supposed to be beneficial. A more prolonged experience with the remedy has, however, not proved its claims to be wholly substantiated.

Syphilis: The Special Pathology and Reclining Rest Treatment in the Constitutional Stage. By Dr. Samuel H. Friend.—Without regard to the system, organ, or tissues affected, and irrespective of the period of syphilitic infection, *all syphilitic lesions begin in the arteries.* The special pathology of syphilis is in a disease of the arterial walls which bears the same relation to syphilis as does the disease of Peyer's glands of the intestine to typhoid. Reclining rest should, therefore, be made a routine treatment during the constitutional stage.

Friedrich's Disease, with the Report of a Fatal Case. By Dr. F. Savary Pearce and Dr. John M. Swan.

Clinical Notes on a Case of Paranoia. By Dr. Albert Warren Ferris.

Boston Medical and Surgical Journal, May 24, 1900.

Some Thoughts on Medical Education. By Dr. Frederick C. Shattuck.

The Ideal Ration for an Army in the Tropics. By Dr. Edward L. Munson.

On Ischæmic Paralysis and Contracture of Muscles. By Dr. Augustus Charles Bernays.

The Journal of the American Medical Association, May 26, 1900.

Carcinoma in Early Life: with Especial Reference to Earlier Methods in Intra-vitam Diagnosis. By Dr. Walter L. Bierring.

Experiments and Observations in Scarlet Fever. By Dr. W. K. Jacques.

Distilled Water as Food. By Dr. Ephraim Cutter.

Chronic Constipation, a Symptom Resulting from a Disordered State of the Nervous System. Its Causes and Cure. By Dr. Charles E. Stewart.—Proper dieting; massage; electricity by means of a rectal electrode in the rectum and a pad electrode placed over the abdomen, and exercises calculated to develop the abdominal muscles, are all mentioned as being of use.

The Pathology of Criminal Abortion. By Dr. Maximilian Herzog.—The trouble in trying to clear up the intrinsic pathology of certain types of criminal abortion lies in the fact that we practically know nothing definite about the primary factors which initiate normal labor at full term.

Complete Occlusion of Bowel. By Dr. Dwight E. Cone.

Quinine Amblyopia. By Dr. M. Coplan.

Report of Unique Case of Appendicitis, with Some Remarks on Treatment. By Dr. James T. Jelks.

Medicine as a Business Proposition. By Dr. G. Frank Lydston.—This article, which is amusing and instructive, may be summed up in the opening words: So live that when thy summons comes to join the innumerable caravan which moves to that mysterious bourne peopled by doctors who have died of innutrition, thou go not like the general practitioner called at night, scourged from his office, but, sustained and soothed by the motto "Never trust," approach the grave like one who wraps his stocks and bonds about him and lies down to pleasant dreams.

The British Medical Journal, May 19, 1900.

Small-bore Rifle Bullet Wounds and the "Humanity" of the Present War. By Dr. C. T. Dent.—After certain general considerations as to the influence of climate, improved hospital service, antiseptic treatment, and shell and shrapnel wounds, the writer discusses the subject of bullet wounds from small-bore rifles. Broadly speaking, the injuries caused in the living subject are less serious than would have been anticipated from experiments. In this respect modern war is more humane than it was thought likely to be. Mauser bullets commonly make a clean hole and practically let in no air. The bullet itself is sterile, but shreds of clothing are likely to be highly septic. In some cases the apertures of entrance and exit are indistinguishable. It may be anticipated that the mortality of injuries following injuries of long bones in the present campaign will be at least twice as low as in the American civil war, where it was sixty-four per cent. The writer has not seen a single death after a knee-joint wound. Hæmarthrosis usually follows the injury. As regards the head cases, trephining can be done with the utmost freedom, and has been performed in many cases; yet Sir Thomas Longmore has stated that it is hardly justifiable in military surgery. In conclusion, the writer points out that we must not lay too much stress upon the "humanity" of the wounds in this war, and that due credit must be given to the lack of overcrowding and to the good hygienic surroundings.

Injuries of the Bladder Occurring in the Course of Gynæcological Operations. By Dr. J. W. Cousins.—The writer reports the case of a woman, aged fifty-eight, in whom ovariotomy was followed by sloughing of the bladder wall and free discharge of urine through the lower angle of the abdominal wound. All attempts to keep the bladder empty were unsuccessful until on the nineteenth day a large slough was found protruding from the urethra. This was removed with forceps and recovery rapidly took place. The writer thinks the perforation was caused by one of the ligatures inclosing a portion of the bladder wall, and inducing softening and necrotic changes in a limited area. In cases of wound of the bladder, the success of immediate treatment depends on the complete disinfection of the seat of injury and upon the accuracy with which the stitches are inserted.

Abstract of the Report of a Committee on the Medico-legal Relations of the X Rays. By Dr. J. William White.—The writer gives a summary of the answers to a circular letter sent to members of the American Surgical Association in 1898. The following are the questions asked in the letter and the answers thereto: 1. Is skiagraphy reliable in the diagnosis of (*a*) fractures attended with much swelling? (*b*) fractures about joints? (*c*) epiphyseal separations? (*d*) fractures of the neck of the femur? (*e*) ununited fractures? The replies to question 1 were uniformly affirmative except as to item (*d*) referring to the neck of the femur. As to that, they were negative. 2. Are there any reliable cases of recognition of (*a*) fracture of the base of the skull? (*b*) fracture of the vertebræ? (*c*) fracture of the sternum, scapula, clavicle, or pelvis? The answers to question 2 were uniformly negative. 3. Are there any cases of supposed foreign bodies in tissues or tumors, gallstones or kidney stones, in which the testimony of the skiagraph has led to mistaken or ineffective operations? This question was answered negatively by twelve and affirmatively by six. The abstract closes with the following conclusions: 1. The use of the x ray in all cases of fracture is not justifiable. 2. Special caution should be observed in basing an important diagnosis upon a skiagraph of the base of the skull, the spine, the pelvis, or the hips. 3. Skiagraphs are useless in cases of deformity, without expert surgical interpretation. 4. In recent fractures skiagraphs can not distinguish between cases in which satisfactory callus has formed and cases which will go on to non-union. 5. X-ray burns are easily and certainly preventable. 6. The skiagraph is of the very greatest value in the recognition of foreign bodies. The strictly legal standpoint and the technicalities of the production of the x rays were not dealt with.

Remarks on the Plague in the Lower Animals. By Dr. F. G. Clemow.—In the continuation of the writer's article he takes up the question of the occurrence of plague in the following animals. The evidence in regard to cats, dogs, and jackals is far from conclusive, but there is no reason to believe that these animals play any great part in spreading plague. The same is true of pigs, sheep, and goats. Horses and cows do not appear to have ever contracted plague under natural conditions, and may be disregarded as active agents in spreading it. Birds are equally immune to the disease, and there is no evidence to show that either birds or reptiles or fishes have ever aided in multiplying and diffusing the infection. Insects, on the other hand, are probably agents of considerable importance in the spread of plague.

A Note on Herpes Progenitalis from a Diagnostic Point of View. By Dr. A. Cooper.—The writer calls attention to the difficulties of diagnosis of single-spot herpes. The inner surface of the prepuce and the glans penis are the most frequent seat of progenital herpes. Here the course of the disease is prolonged and ulceration often takes place. In syphilis the herpetic spots may run together and form an ulcer. On examination of the edges of the ulcer with a lens it is possible to make out its "polycyclic" outline, resulting from the multiple segments of small circles left by the original herpetic spots. This sign is absent in single-spot herpes. The intimate association of herpes with nervous irritation has long been recognized. Single-spot progenital herpes often follows illicit intercourse and is usually taken to be a chancre. In any doubtful case of sore on the genital organs, the chances of irregular herpes should always be considered, the lesion and the inguinal glands should always be closely examined, and in the meantime irritants should not be applied and mercury should not be given.

A Case of Suppuration in the Mastoid with Optic Neuritis on the Same Side; Operation; Recovery. By J. P. Maxwell.—The writer reports the case of a Chinese girl, aged seventeen, in whom middle-ear disease was followed by optic neuritis. This latter sign is indicative of serious intracranial trouble, yet after an operation in which the contents of the middle ear were removed with a small Volkmann's spoon and free drainage instituted, recovery rapidly took place.

The Lancet, May 19, 1900.

Malaria and the Malarial Parasite. By Dr. P. Manson.—In the first of two lectures delivered at the Medical Graduate's College, the writer gives a review of the history of the malarial parasite, paying special attention to the work of Ross in India. He has not the slightest doubt that the mosquito acts the part of transmitting agent as well as definitive host of the malaria parasite. The effective species of mosquito, as regards human malaria, belong to the genus anopheles: it can readily be recognized by the fact that the body of the insect stands out at right angles to the surface on which it is resting. Further, in anopheles the organs known as palpi are almost as long as the proboscis. This can readily be seen with a hand magnifying glass. It is the female anopheles that transmits the disease. Quinine under certain conditions tends to produce hæmoglobinuria, but not so powerfully as the malarial parasite. Therefore, when it comes to a choice of two evils, we choose the lesser, and give quinine.

The Modern Treatment of Diabetes Mellitus. By Dr. R. Saundby.—After reviewing the modern theories of the causation of diabetes, and excluding the transitory cases, the writer classifies all cases as being either of nervous, pancreatic, or hepatic origin. He defines diabetes as a persistent or recurrent glycosuria which sooner or later is accompanied by thirst, polyuria, and failure of nutrition. The first step in the treatment of this disease should be to ascertain the effect of withdrawing all carbohydrate food, in order to determine how much carbohydrate food the patient still retains the power to assimilate. The writer gives the number of heat units (in food) that a man needs during rest and exertion, and also an example of an average non-carbohydrate diet for a patient requiring 2,400 heat units a day. The greatest difficulty arises from the need to deny diabetic patients both bread and potatoes. Six ounces of potatoes are enough for one meal, and would enable the patient to dispense altogether with any bread substitutes. Bread is best given in the form of toast; but as an ounce at a meal is as little as a patient can do with, and as this is equal to 1,000 grains of sugar a day, he is better without it. Alcohol should be given in the form of Scotch whisky or light wines. Where the patient seems to handle small amounts of carbohydrates with safety, certain "extras" may be permitted. Examples of diets containing these extras are given, and cases are reported showing the results of their use. Finally, the writer gives a very useful table showing the carbohydrates or sugar-forming substances contained in various articles of diet which may be used in limited quantities by diabetic patients.

Summer Diarrhœa. By Dr. F. J. Waldo.—In the second of the Milroy lectures, the writer discusses the various predisposing factors. Age has a distinct influence, of course, and there is a slight preponderance of deaths in the male sex from infancy upward. July, August, and September show double the number of deaths compared with those during the remaining nine months. Summer diarrhœa is essentially a disease of towns, and principally among the poorer classes. Narrow streets and many courts are associated with epidemic diarrhœa. But the great predisposing influence in the causation of summer diarrhœa is artificial or hand feeding. This has been noted by many observers. A table is given which brings out this point very forcibly. A review of the work done on the bacteriology of summer diarrhœa is given, and the belief stated that while the disease is of multiple bacterial origin, multiplicity does not disturb the relation of the disease to soil and temperature nor to its general method of entry into the body by means of milk. The possibility of communicability is touched upon and admitted. In this respect the resemblance between this disease and typhoid fever is strong. As regards the source of infection, it is suggested that polluted dust may be the vehicle of distribution. In this connection the writer next considers the bacteriology of horse dung, and confidently states that certain micro-organisms are common to the intestines of the horse and to those of man. But whether such organisms have a definite causal connection with summer diarrhœa in man is as yet undetermined.

A Clinical Study of the Causes of the First Sound of the Heart. By Dr. A. Morrison.—The writer reports at length a case of malignant endocarditis in a woman of twenty-two, together with the autopsy findings. From his clinical observations he draws the conclusion that "the impulse given to the blood by the muscular action of the heart gives rise in it, and in the vibratory structures containing it, to vibrations of a certain quality which result in that tone which is synchronous with cardiac systole and usually called the first sound of the heart, and that the largest share in this result must be attributed to vibrations in the blood itself, to produce which at a normal rate valvular support of the vibrating blood columns is necessary."

The Standardization of Antivenomous Serum. By Dr. W. Myers.—After describing the various methods of standardization hitherto used by Calmette and others, the writer states that by using mice of about fifteen grammes in weight and unheated cobra poison, it is possible to determine the minimal lethal dose to within twenty per cent. Guinea-pigs can not be used. A unit of immunity is that quantity of antitoxine which neutralizes ten times the minimal lethal dose of cobra venom for a mouse weighing fifteen grammes.

Chronic Abscess of the Pericardium. By Dr. D. Hunter.—The writer reports a case of this affection in a man aged thirty-four. He had been a hard drinker. There was progressive cardiac irregularity and feebleness, but no distinctive symptoms. On autopsy a cavity was found over the wall of the left ventricle, containing about four ounces of pus. The walls of the cavity were thickened and lined with a pyogenic membrane. The abscess evidently originated in a pericardial adhesion of long standing.

Some Cases Showing the Use of "Gas and Oxygen" as an Anæsthetic in Certain Ophthalmic Operations. By Dr. W. J. McCardie.—The writer reports eleven cases in which "gas and oxygen" was successfully used as an anæsthetic, and gives the following special advantages of its use in eye work: 1. Almost absolute safety. 2. Rapid induction of anæsthesia. 3. The induction is without incident. 4. Absence of after-effects. 5. The eyeball is fixed, and nothing occurs to cause increased intraocular vascular tension. 6. An upright position can be safely assumed. 7. It is admirably adapted for consulting-room work.

On a Fatty Tumor of the Ascending Colon; Enterectomy; Recovery. By Dr. J. Bland-Sutton.—The writer reports a case of the above-mentioned affection in a man aged forty-four. The tumor was a lobulated lipoma weighing two ounces. Although it burrowed between the mucous and muscular coats of the bowel, it probably arose in the subserous fatty layer. After performing cœliotomy, the tumor was incised and enucleated. The mucous, muscular, and serous coats were then sutured. Recovery was uneventful.

A Case of Incomplete Development of the Third and Fourth Ribs. By Dr. F. B. Jefferiss.—The writer reports the case of a boy, aged twelve, in whom there was marked flattening of the right side of the chest due to absence of the third and fourth ribs from the mid-axillary line forward to the sternum. The ends of the incompletely developed ribs could be plainly felt in the axilla. There was no trace of the pectoralis major on the right side, but the right deltoid was more developed than the left.

L'Indépendence médicale, May 9, 1900.

Clavicotomy.—M. G. Perondi, in describing the technics of clavicotomy when the shoulders can not be born on account of their large size after the head has been delivered naturally or by forceps, prefers to incise the clavicle at the highest point in its convexity, according to Fornari, as by this method one stands in less danger of injuring the subclavian vein than is apt to be the case if the clavicle is cut at its inner extremity. Since the operation is conservative in its purpose, one must not expose the fœtus to death by hæmorrhage, or by atmospheric embolism, as may happen if the subclavian vein is injured.

La Presse médicale, May 9, 1900.

Mitral Dwarfing.—M. A. Gilbert and M. F. Rathery describe two patients under this title. They are dwarfed in size, as though arrested in development. Their appearance corresponds to the infantile type of Lorain and Faneau. The authors choose this name to bring the symptom-complex under one title, dwarfing meaning to them "an anomaly characterized by a diminution in volume of all the parts, and an exceedingly small stature." In these cases the patients do not inherit the statures of their parents, who are usually normally formed persons. The eyebrows are prominent; the nose is sometimes the seat of a deviation of the sæptum, with an absence of the inferior turbinated bones; the sternum is often depressed. The arms and legs are thin and sometimes one shoulder is more developed than the other. Supplementary digits, syndactylism, and congenital amputation of the fingers and toes are not uncommon. The hair is poorly developed and other signs of degeneration can be seen in the eyes and ears. There is a general hypoplasia. The intelligence is much below the normal. The infantile type may dominate the genital organs and sterility is not rare. The urine is frequently albuminous and the gastric troubles of mitral stenosis are present. Sometimes the stenosis gives but few physical signs, or none at all, but the authors believe it is a basic factor in the ætiology of the condition. Frequently, the presystolic murmur, the diastolic roll, and the reduplication of the second sound are present, and other cardiac complications can be detected. Hemiplegic affections are sometimes seen as a result of the heart disease, and, in the female, puberty and pregnancy are apt to be dangerous periods.

Le Progrès médical, May 12, 1900.

A Serious Case of Morphinism and Cocaine Habit.—M. Paul Sollier reports a case in a physician who had a marked albuminuria, absolute anorexia, and obstinate constipation. The skin was pigmented dark-brown and the patient was greatly deformed, with the right arm extended from the body and the entire body leaning to the right. This was due to an infiltration of the abdomen and of the right side by an inflammatory process caused by the hypodermic injections of the drug. There were innumerable abscesses in the skin and two hypodermic needles were found imbedded in the abdominal skin. The patient was cured by the gradual withdrawal of the drug.

Wiener medizinische Blätter, May 10, 1900.

Early Diagnosis of Gastric Cancer.—Dr. Alfred Wagner reviews the various methods of palpation, percussion, and chemical examination of the gastric contents, together with a *résumé* of the important symptoms of cancer of the stomach. He advises that in cases in which there is a gastric affection which does not yield to medical and dietetic treatment, and in which the symptoms point to a possible malignant growth, an exploratory incision be made. If a carcinoma is found, a radical operation may be undertaken with some hope of success, while, if a negative result is the outcome, the patient may be, and often is, benefited by the procedure.

Deutsche Medizinal-Zeitung, May 14, 1900.

Treatment of Diabetes Mellitus. — Dr. Lenné says that the ingestion of Neuenahrer water exercises a decidedly beneficial influence upon the metabolic functions; the thermal water possesses a marked diuretic action and promotes gastric and intestinal activity. The author believes that the spring water increases the alkalinity of the blood, as he has found the acidity of the urine decidedly diminished after its use.

Berliner klinische Wochenschrift, May 7, 1900.

Peroxide of Hydrogen in Infected Wounds.—Dr. von Brems finds this one of the most useful agents in infected or purulent wounds. He attributes its value to its separation into oxygen and water when it comes into contact with organic material rich in cells. He uses it in a one-per-cent. solution in irrigations or in a moist dressing.

Examination of the Acidity of the Stomach. By Dr. S. Talma.

Pathology of Chronic Fibrinous Bronchitis. By Dr. H. Strauss.

Resection of the Rectum.—Dr. William Levy reports two cases of resection of the rectum for carcinoma, in which he resected the sacrum in its lower third after a blunt dissection to reach the bone to avoid hæmorrhage. The growth was then exposed. The peritonæum was closed with a running suture, the deeper part of the wound packed with gauze to prevent infection, and the rectum was then resected. The two ends of the rectum were then carefully sutured. The gauze was not removed for a week and the ends of the sacral bone were not allowed to unite at once. This insured freedom from infection, for the bone, after the withdrawal of the gauze, became firmly united.

Röntgen Pictures of the Bones. By Dr. Julius Wolff.

Riforma medica, April 25 and 26, 1900.

Anomalous Types of Cancer of the Liver. By Dr. G. Rummo.—In these clinical lectures Rummo exhibited several patients who presented unusual clinical forms of cancer of the liver. The first of these, a woman, aged fifty-six, had all the physical signs of cancer of the liver of three months' standing without any disturbances of the hepatic functions. This may have been due to the fact that new liver cells were formed and took the place of those which had been destroyed by the pathological process. The tumor in this case was of the nodular variety; three nodules, each of the size of an orange, could be plainly felt in the epigastric region. The only two conditions from which cancer must be differentiated in this case are syphilis and echinococcus cysts of the liver. In syphilis the liver may attain the enormous dimensions that characterize this case, but, as a rule, the enlargement is much less pronounced. There are no distinct prominent nodules in syphilitic livers, but the surface is irregular, bosselated. The syphilitic process is a slow one, and it would take a long time to reach the dimensions of this liver. Other syphilitic lesions are rarely absent in persons who have luetic livers. As to echinococcus, it is excluded by the absence of fluctuation, by the rapidity of the growth, and by the absence of jaundice and other hepatic symptoms. On puncturing one of the nodules no fluid was obtained. Another remarkable feature about this case was that six weeks after admission comparative measurements showed that the liver had considerably diminished in size, and also that the nodules were far less prominent.

This the author explains by supposing that the sclerotic process of the carcinomatous growth so contracted the organ that its diminution was noticeable. In support of this hypothesis he cites the following case: A man, aged forty-seven, developed carcinoma of the liver with all the physical signs, the cachectic and toxic symptoms, and the hepatic disturbances that constitute the clinical picture of this new growth of the liver. Although his general condition became steadily worse at the hospital, the size of the abdomen began to decrease, and the liver became smaller and harder. On examination of the ascitic fluid in his abdomen, numerous clumps of epithelioid cells resembling those of cancer were found. The patient died of cachexia five months after admission. Hence a diagnosis of cancer may be made in such cases, in spite of the fact that the liver diminishes in size as the disease progresses. A third patient, a woman, aged fifty-four, who had ceased to menstruate at forty-four, developed cancer of the uterus which spread to the peritonæum. There was a considerable quantity of free fluid in the peritoneal cavity, and marked enlargement of the abdomen. On puncture, the fluid showed the presence of cancer cells under the microscope. There was profound cachexia, but no hepatic symptoms. The liver was considerably enlarged, especially its left lobe.

In conclusion, the author emphasizes the polymorphous nature of cancer of the liver, and the difficulty of diagnosis. The treatment in these cases should be directed to an improvement of the digestion, and, in addition, general stimulants, intestinal antiseptics, and symptomatic remedies must be used according to the necessities of the case. The following formula fulfills several indications, as it contains tonics and digestive stimulants:

℞ Fluid extract of cinchona,	āā.... 10.00
Fluid extract of coca,	
Fluid extract of cola,	
Strychnine sulphate	0.05
Glycerophosphate of sodium,	āā. 10.00
Glycerophosphate of calcium,	
Sodium arsenite	0.10
Alcohol	50.00
Marsala, Malaga, or port. .q. s. ad	600.00
Oleosaccharate of peppermint, vanilla, or cinnamon	q. s.

Mix and filter. S.: One or two small glassfuls a day in Seltzer or other alkaline mineral water, half an hour before meals.

For internal antisepsis he uses enemata with creolin or boric acid, and if diarrhœa is present—

℞ Bismuth salicylate,	āā 10.00
Bismuth benzoate,	
Benzonaphthol,	
Calcium phosphate	12.00
Oleosaccharate of peppermint	2.00

M. Divide into forty powders. S.: One four times daily.

If constipation is present he gives—

℞ Magnesium benzoate,	āā 10.00
Magnesium salicylate,	
Benzonaphthol,	
Calcium phosphate	12.00
Oleosaccharate of peppermint....	2.00

M. Divide into forty powders. S.: One four times daily.

Proceedings of Societies.

THE SOCIETY OF THE ALUMNI OF THE CITY (CHARITY) HOSPITAL.

Stated Meeting, February 14, 1900.

The President, Dr. W. L. Baner, in the Chair.

The Dietetic Management of the Convalescent Stage of Typhoid Fever.—Dr. Adolph Rupp read a paper on this subject. (See page 820.)

Dr. George T. Jackson thought that the reader of the paper had left out two very important elements in convalescence, fresh air and sunlight. He regarded these as being quite as important as anything in the way of diet and the other things mentioned.

The President said he had hoped Dr. Rupp would touch more particularly on the management of convalescence from typhoid fever, especially with reference to the kind and amount of food to be taken with due regard to the local condition of the intestine. One often heard of cases of typhoid in which there was a relapse, and the family always attributed it to something the patient had been allowed to eat. It was possible that perforation had occasionally been caused by the too early giving of solid food, but he would like to ask Dr. Rupp if he considered that relapses or recrudescences were actually ever caused by such indiscretions.

Dr. Beverley Robinson had thought, in looking over the card, that possibly Dr. Rupp was going to touch more particularly on the dietetic management of typhoid fever, and said that he was a little in the dark as to precisely how to treat the patient. There were various views as to when to give solid food, whether immediately after the febrile stage or how long a time should elapse. He referred to a case that he sent to St. Luke's Hospital some weeks ago. After the patient had been without fever for a period of at least a week he returned to his home in the city, and within twelve hours of his return the speaker was called in and found marked fever, and the family was disposed to criticise the hospital officials for allowing him to come home and have a relapse. He had apparently eaten very little more after he reached his home than he did at the hospital, and the family brought up this question of the diet. Some practitioners stated that one could give quite a good deal of solid food after the febrile stage, and there would be no danger of relapse on that account. Others allowed a certain period to pass—a week or ten days—before solid food was permitted. They had all read of cases where occasional relapses occurred, and had reasonable doubt as to what caused the relapse. They were apt to attribute it to diet, yet, so far as he was personally concerned, he was thoroughly convinced that the diet was not the cause of the revenant. Some weeks ago this subject came up for discussion, and at that time he referred to this very case, and then alluded to the fact that it seemed to be rather queer that there should be a relapse, and there was some discussion as to gallstones. The question was asked as to whether, by giving meat diet in cases of typhoid fever, if the fever had subsided for some days, it was possible to produce infection of the gall bladder. This was mere theory, except that one would often find micro-organisms in the gall bladder that remained there for weeks and months subsequent to attacks of typhoid fever, and were capable of producing a revenant. He asked those present as to whether they believed that any solid food, especially meat, might produce a perforation in an intestine not already healed. That afternoon he had read that Osler had referred to a case in which death had resulted two weeks subsequent to a brief disappearance of the fever, where he had reason to believe it was owing to eating two chops, which produced a perforation of the intestine. It had left such an impression that he (Osler) would never forget it, and thought the mere taking of flesh in a diet after typhoid fever might be something especially pernicious. That was a problem in the speaker's mind. He was much obliged to Dr. Rupp for a philosophic paper on a very interesting subject—how to guide and direct, not only the eating, but also the alcoholic stimulants. There was great difference of opinion as to the use of alcohol, but, as a practitioner of medicine, he found it necessary to give alcohol at times, and would find it very difficult not to give it. He did not know how to be guided as to the proper amount, and yet he thought most of them would find it hard to be entirely without the use of alcohol in the final stages of typhoid fever.

Dr. F. B. Carpenter said he was rather cautious in giving meat diet in typhoid fever in convalescence, though a great deal depended on the way the patient had been treated up to that point. He was not in the habit of giving much food while the temperature was high and while the patient was in bed, and thought he could stand solid food earlier in convalescence than if food were crowded during the high fever.

Dr. A. Rupp, in closing, said, with reference to the criticisms of Dr. Jackson and the president, that if he had attempted to discuss each and every question his twelve-minute paper must have needed twelve hours in the reading. With reference to the question raised by Dr. Beverley Robinson, that of giving solid food during the early convalescence of typhoid, his experience coincided with Osler's experience, as quoted by Dr. Robinson. Brand told us that the effects of cold-water tubbing on the course of typhoid fever was so remarkably good as to make one of his correspondents feel justified in giving his patients beefsteaks after the fall of temperature. Brand himself did not sanction it or practise so boldly. As to the point raised by Dr. Carpenter, referring to the effect that feeding during the fever would have on the convalescent period, much might be said, but much was a matter of fortune, or good or bad luck. Often during the fever it became a question of how best to get any nourishment into the patient. Concerning diet during the convalescent period, he referred to an English girl who had had no fever for over a week, and was gaining steadily. Without the doctor's permission she ate about a quarter of a pound of cheese; soon after vomiting set in and all the evidences of peritonitis and a temperature of 106.5° F. A bad prognosis was given, but the girl finally recovered, to die three years later of pulmonary tuberculosis. A second case was that of a young man who was recovering from a moderately severe attack of typhoid fever. Toward the end of a week of freedom from fever he exercised overmuch about the house, and ate plentifully of steaks, etc., against medical advice. He collapsed rather suddenly, and died of intestinal hæmorrhage.

Some cases of typhoid fever dragged on a long while, and the reasons therefor could be learned from the works of Kean, Hare, and Hoffman. The food for fever patients, and particularly for typhoid-fever patients, must be smooth and easy to absorb. Finely scraped beef, and eggs beaten up or dissolved in soups might be given during fever as well as during convalescence. Wines, whisky, and brandy variously prepared were excellent adjuvants. But ordinary solid foods should not be given for at least a week or ten days after the cessation of fever.

The Management of the Hair During and After Fever.—Dr. George T. Jackson read a paper on this subject. (See page 686.)

Dr. Joseph B. Bissell said he was glad to hear the paper because it gave him an answer to give to questions asked by patients as to whether or not to have the head shaved.

Dr. Carpenter thought the writer of the paper was right, that neither cutting the hair short nor shaving increased the growth of the hair. The reverse was a common idea among the laity, and it took a great deal of talk to convince them that it was not true.

Dr. Robinson said he frequently had young women, and others not quite so young, but who had a measure of good looks and wished to look young, who wished to know what should be done for the hair. He tried to give them good, sensible advice, but they scarcely believed him, and would get a good deal of information from all their friends and relatives. If they fell into the hands of a prominent and sensible practitioner, they were directed to follow the good advice already given; but often, unfortunately, they were misdirected and misguided. A physician told him only a few nights ago that one of his patients went to some one in Twenty-third Street to treat the skin. She did not want a thorough treatment, which cost five hundred dollars, but took a moderate treatment that involved one hundred dollars at first. She got into his hands and was disfigured more or less permanently. They were indebted to Dr. Jackson for his judicial and judicious paper.

Dr. Jackson said that the object of the paper was simply to bring to the attention of the profession the fallacy of shaving the scalp, as there was a widespread idea among doctors themselves that they should yield to their patients' entreaties to have their heads shaved. He was convinced that they were wrong; that they would get the same results without it. He spoke of a patient of his who had had very good hair. She had had scarlatina in a light form and her doctor advised her to have the scalp shaved. The speaker was consulted, and he told the attending physician that if he would take care of the general condition of the girl he (the speaker) would take care of the hair. Of course, if patients were old, one could not expect to do so much as if they were younger, because the hair was apt to be a little weak, and the fever made it still less able to resist the atrophy of advancing years. He was quite sure the shaving could not help them much. He spoke of one person whose hair did not come out by the roots, but broke off near the scalp. She had had her scalp shaved on her own responsibility and came in after some weeks to show how beautiful her hair looked; but a few weeks later the hair was as bad as before.

Dr. Robinson asked Dr. Jackson whether he believed as firmly in massage treatment as seemingly a good many people did.

Dr. Jackson said there was only one stimulant of the hair, and that was massage. The so-called hair tonics were all useless. If we used cantharides strong enough to really stimulate the hair we were apt to cause a blister. Massage stimulated the hair; it brought the blood down to the part of the scalp where one wanted it.

Dr. Robinson asked as to the use of hot water.

Dr. Jackson said he was still on the fence on that question. He knew a woman who cared for the hair and scalp who was very enthusiastic as to the use of hot cloths. Thus far he had seen no positive effect from their use. He preferred to use massage. There were only a few drugs that they used—sulphur and resorcin, and sometimes salicylic acid.

The Prevention and Treatment of the Eye Sequelæ of the Eruptive Fevers.—Dr. Arthur T. Muzzy read a paper with this title.

He said that he would begin with measles, because that was the most frequent, and because with that we had perhaps one of the most easily recognized conditions that we could come across, and yet many times found it hard to get through safely. With most of the eruptive fevers, especially measles, scarlet fever, and diphtheria, there was a simple conjunctivitis. Probably the very first thing that we noticed was the running eye. That was such a simple condition that he did not think it necessary to waste time in trying to describe it, because it was only a symptom of the general condition, and in no wise dangerous unless it got to the next stage, a condition that we called *phlyctænular conjunctivitis.*

This arose, of course, frequently independent of measles or scarlet fever, but it was especially frequent after these two conditions. It generally came on after the fever had pretty well subsided, and was then due to the depressed general condition. He thought the general idea was that it was due to the depression of the nervous system. He did not think it necessary to describe the appearance of this little bleb, which formed at the junction of the cornea and the conjunctiva, sometimes on the cornea. This was, if properly met, very easily headed off. One treatment that was in almost all cases applicable was with a drop of 0.5-per-cent. solution of atropine. Probably in nine out of ten cases no other treatment was necessary. After a few days, generally two or three, of attention, if begun promptly, these little blisters and the little white elevation, either on the conjunctiva or on the cornea, disappeared.

Taking then another condition that followed measles—optic neuritis—it was quite an unusual one, and yet it was mentioned by a great many writers as being seen once in a while. It accompanied a deranged condition of the general nervous system, and it came in those cases complicated with meningitis in which the disease had run an especially severe course. Dr. Muzzy did not think that so far any direct or local treatment had been found of any effect whatever.

The next of these fevers that he would take up would be scarlet fever. Here, again, he would begin with the form that had the greatest notoriety, although this was not so very frequently met with, and that was neuroretinitis. We had here, after the scarlet fever had gone pretty well into the third or closing stage, and everything seemed to be going very satisfactorily, suddenly some affection of the sight without apparently any relation to the conjunctivitis which had existed, and which had now disappeared, or the conjunctivitis that might be present, and yet there was this dimness of sight. Then the use of the ophthalmoscope came in play, and with it we found the telltale of the swollen disc and the retina cloudy. And if it were of the severer types, we should find the small hæmorrhages, though in this form hæmorrhages were not so frequent as in the other forms of albuminuric retinitis.

Albuminuric retinitis was due to the poisoned condition of the blood. It was under the control of the general condition. Local applications of any sort were of no use further than to keep the circulation of the eye in as good a condition as possible by the alternate use of cold and hot bathing. The simple method of application here was by inverting over the eye a large tumbler filled with water of the right temperature, whether cold or hot, but the temperature should be at one of the extremes. In one of the numbers of the *Archives of Ophthalmology* there were a number of cases mentioned by Dr. Weeks in which this retinitis was followed by detachment, but nowhere else had Dr. Muzzy seen any mention of its forming more than a most rare complication, so that he did not think it was one to be at all in fear of in the recovery from scarlet fever.

The next on the list of diseases would be erysipelas. The most frequent sequela, and also one which we could feel that we could do much to relieve and prevent, was dacryocystitis. It was due to the spread of the virus from the lids and conjunctiva into the lacrymal canal. A thorough cleansing of the duct with the lacrymal syringe would in many cases give gratifying results; keeping disinfected this small canal was of great service.

Another sequela to erysipelas was optic neuritis. It was one of the most sudden forms that we had of this unfortunate condition. The face had been attacked by erysipelas; when the eye was closed the sight was perfect, and there was no trouble at all; yet, when the eye opened within a few days, there was not a ray of sight, the ophthalmoscopic picture being most marked, for there was a perfect blanching of all the tissues. There was not a ray of color, except here and there in small sections. It was, of course, due to the general condition of the system and the presence of the poison in the optic nerve.

The reader would now turn to small-pox. In small-pox we had a much-to-be-dreaded sequela, or rather complication—suppurative keratitis. One of the vesicles of the exanthem was very frequently known to form upon the cornea. If it formed upon the conjunctiva or on the eyelids, it did not seem to amount to much; but when it formed on the cornea the outlook was very dangerous and it had to be promptly taken care of. The one treatment was that of disinfection. This must be very promptly and thoroughly made. But, in spite of that, the records showed that the disease was very frequently fatal to the sight.

In diphtheria we had another condition which was just as decided—one of the marked symptoms of the condition—that was, the paralysis that followed as a sequela. This might be of any one or of all the muscles, but the most frequent was of the abducens. Dr. Muzzy did not know that there was anything whatever to prevent it. There was considerable to be done with it in the hope of recovery; that was, complete rest—abandoning all use of the eyes and avoiding bright light.

He thought he could now make his final statement, and that would be with regard to the heterophorias which followed more or less three of these conditions—namely, measles, scarlet fever, and diphtheria. He did not believe that it was generally understood how frequently this condition of the paralysis, or rather the milder form of paresis, of the muscles of the eye took place after the eruptive fevers. It certainly had been his experience to come across it quite frequently, where muscles were more or less completely out of balance, only to find that at the end of a few months' careful use of prisms and the right glass (it would be found almost always that there was a slight amount of astigmatism also present) the whole condition would disappear. The right way to prevent this was often the care of the eyes while they were convalescent. We might mention to the friends of the patient the importance of not using the eyes while lying down. It was an abnormal position in which they amused themselves in the convalescent stage. The abnormal position strained the muscles, and when they came to their usual vocations on recovery they found that the muscular system was out of balance. Dr. Muzzy thought a great deal could be done here in prevention, but it was also very clear to his mind that almost all the patients recovered unless they had persisted in too long use of the eyes.

Dr. Jarecky thought the paper an exceedingly interesting one and went about as deep as the general practitioner cared into these things. In regard to phlyctænular conjunctivitis, naturally a child would not open its eyes when the vesicle was on the cornea; atropine and cocaine then would usually do the work; but when it was situated on the conjunctiva some mild antiseptic wash might be all that was needed. Sometimes the phlyctænule went on to the formation of a pustule, and then, by touching it with a copper, or perhaps an alum, stick, the condition of the eye was relieved. A correction of the diet was essentially necessary whether the patients were convalescing from measles or the disease was due to other conditions. As regarded the diphtheritic conditions causing different affections of the muscles, these were not only due to the position in which the patient amused himself in convalescing, but to the disease itself, as we often had in children a paralysis of the ciliary muscles. This would cause a paralysis of the accommodative apparatus. As to retinitis in scarlet fever, the few cases that he had seen had not gone on to detachment of the retina, but had subsided under energetic treatment.

In regard to the aural complications which usually occurred in measles and scarlet fever: in measles the otitis media showed itself in the first few days—that was, before the end of the first week—whereas scarlet fever usually showed the disease at the end of the first week. If one had a light case of scarlet fever in which there was a doubt about the diagnosis, and otitis media showed itself, one could be pretty sure that the diagnosis was correct. As to the diagnosis of otitis media, sometimes the pain was slight and there was need of inspecting the drum membranes; at other times the patient would cry with severe pain, the drum membrane would rupture, and the discharge appear. There were two kinds, a catarrhal and a purulent variety, but to distinguish one from the other in the beginning was exceedingly difficult. The purulent variety generally came with the severer forms of scarlet fever. The catarrhal cases might subside without any perforation of the drum. The best treatment for the pain was the application of dry heat externally to the ear, and, if relief should not come, heating some water in a teaspoon and dropping it into the ear, or allowing a gentle stream of warm water at a temperature of 110° F. to flow into the ear from an ordinary fountain syringe, but not to hold it too high, so as to prevent much pressure. In the purulent cases, either the drum membrane must be incised or else perforation would occur and possibly mastoiditis. Frequently we saw a case in which the patient complained of pain in the ear from which pus discharged, inspection showing a small rupture from which there was not a sufficient amount of drainage, which in all cases was necessary to effect the escape of the discharge. He thought when the congestion of the drum was located at the upper part in Shrapnell's membrane, the case would be purulent. He believed in taking the narrow cataract knife and making a good, complete opening wherever the bulging existed, clearing out the contents and then irrigating. Patients should be taught to properly cleanse their noses and throats (as these cases certainly extended from the throat trouble), and so, by thoroughly cleansing the throat and by teaching the patients the proper use of their handkerchiefs, clearing one side of the nostril at a time, gently blowing so as to discharge all the mucus, etc., they could not only ease the severity of many of the cases, but possibly prevent the occurrence of otitis media and its complications.

Dr. McAuliffe said, in regard to the complication of dacryocystitis with erysipelas, that, inasmuch as the inflammation was dermal, it seemed to be owing mostly to the swelling which would occur and make the lacrymal canal a closed cavity, and so the suppuration would be established, as was the rule in closed mucous cavities. He had seen a good many cases of keratitis in scarlet fever, and thought if they looked at the eye cases of decreased or defective vision in which there were irregular corneal astigmatisms, they would often find the cause in scarlet fever in childhood. To digress, some insisted on the influence of light over the rashes (especially in measles) and the febrile processes. Some experiments had been carried on in the use of the red light, having perfect red illumination where the child was sick, and it was found to diminish the severity of measles especially, the rash disappearing rapidly, and on the resumption of the ordinary sunlight the rash reappearing and the symptoms increasing. It was as yet experimental.

He was very sorry that the reader had not touched upon the ear, because it had been his privilege to see in the ear a great many sequelæ of the eruptive diseases, especially measles and scarlet fever, and in these diseases it seemed in the majority of cases that the eruption was present in the mastoid just as it was often found on the roof of the mouth. The mastoid disease had to be treated very stringently and early, just the same as in any infectious mastoid disease, because delays often caused a great deal of harm; more especially so in children, where there was apt to be rapid infection of the brain. As the suture lines of the temporal bone were barely ossified, and hiatuses often existed in the bone, especially in the tegmen, the infection went readily through it, and brain abscess and meningitis were apt to occur. He had seen a number of cases of brain abscess and meningitis due to infection from suppurative otitis media after infective diseases, and thought it was hard for the general practitioner to discover tympanic and mastoid disease where the child was more or less somnolent. The canal was small and the drum difficult to make out, even by an aurist, at times. He had seen a case in a child who had an earache, and eight days afterward complained of mastoid symptoms. There was no perforation of the drum, nothing to indicate otitis media beyond slight œdema of the mastoid. The mastoid was opened and found to be carious.

Dr. Robinson said he was taking care of a case of measles. There was a certain amount of eruption on the conjunctiva, and he thought it a good thing in these cases to allow the nurse to wash the eyelids and the eye with a little borax and warm water; if the lids were stuck together, or a small quantity of pus was in the corners, it was well to use a solution of boric acid. In regard to the troubles of the eyes of a more serious nature, he probably had been fortunate in not often seeing them.

In regard to the question of the aural complications, particularly of scarlet fever, sometimes of measles, he did not think the practitioner should feel in any sense to blame where the perforation of the drum took place in these diseases, and where he perhaps had not found sufficient bulging of the drum to make it imperative to puncture it, and then the perforation occurred. Sometimes the family was disposed to blame the physician for this result. Unless the specialist was very careful in what he said, he might leave the impression that if he had been there the perforation would not have occurred, or, if he had made the perforation, the after trouble would not have been so great. In a great many cases after scarlet fever, and a few after measles, the drum would perforate with little pain, and one had to be a very accurate practitioner, when the child was more or less affected, and had a high fever, to be ready to look at the ears and perforate the drums. In cases where there had been very little pain, the drum would occasionally be perforated and there would be a discharge from the ear, and he had not felt to blame for it. He thought it imperative to use eye washes; but, with regard to the ear, he was not prepared to say so positively. He thought in those cases they ought perhaps to wash out the ear, but in practice it was a hard thing to do sometimes.

Dr. Joseph F. Terriberry said, in regard to ophthalmoplegias following eruptive fevers, that he had seen in private and at the Manhattan Eye and Ear Hospital a great many paralyses after diphtheria, but had never seen one, that he could recall, after the other eruptive fevers. He asked Dr. Muzzy to give some information of how many of these cases he had seen.

Dr. A. Rupp said that what interested him most was the point of view expressed by Dr. B. Robinson, and then the special point of view. He found himself somewhere between, having had considerable general experience and some special training. In nearly twenty years he had not seen pareses of the eyes following scarlet fever and measles. He asked how long after attacks of scarlet fever and measles these paretic conditions of the eyes came on.

In reference to diseases of the ear, it was impossible for the general practitioner to follow out the advice that ear specialists often gave him. When a student, he was told to puncture the drumhead when it bulged. When the advice was given none of us had seen a drumhead, nor could we have been sure that we could see one. Earache in the course of eruptive diseases was not always due to severe inflammation, nor were purulent ear inflammations always painful. A good many earaches and even ear discharges got well without treatment, but the experience of specialists demonstrated that an earache and a discharge from an ear might be a very grave and serious symptom. No practitioner could hope to treat a discharging ear rationally and successfully unless he was able to make a correct diagnosis. Merely syringing away a discharge was not giving a diseased ear proper treatment, and most men did not know how to syringe an ear.

Dr. Muzzy said, in regard to the questions of Dr. Terriberry and Dr. Rupp, that in his own experience he had found a definite paresis of the muscles which yielded to the proper use of prismatic glasses, so that subsequently the using of glasses was unnecessary after the condition had been relieved. About one third of his cases of paresis came after eruptive fevers.

Dr. Terriberry said we all recognized that diphtheria and scarlet fever, perhaps, might be followed by palsies of some of the eye muscles, but he should like to inquire of Dr. Muzzy about what percentage of ocular palsies following eruptive fevers was due in his experience to other than diphtheria and scarlatina.

Dr. Muzzy said that about one third of the paresis cases following eruptive fevers were after measles.

Dr. Terriberry said that such a percentage was entirely out of his experience. He had never seen anything that approached it, and did not know of any observer who had.

Letters to the Editor.

THE ICE CHARITY.

Westboro, Mass., *May 24, 1900.*

To the Editor of the New York Medical Journal:

Sir: The Guild of Mercy would be pleased to hear of any physician (a member of the Episcopal Church preferred) who would be willing to aid in the Ice Charity for the sick and poor during the coming season in New York or in any of our larger cities.

W. T. Parker, M. D.

Book Notices.

The Irrigation Treatment of Gonorrhœa. Its Local Complications and Sequelæ. By FERD. C. VALENTINE, M. D., Professor of Genito-urinary Diseases, New York School of Clinical Medicine, etc. Illustrated by Fifty-seven Engravings. New York: William Wood & Co., 1900. Pp. 221. [Price, $2.]

THERE is no doubt that monographs on medical subjects are far more interesting and satisfactory to their readers than general works, in which the disease described is more or less indifferently handled as only one of many to be considered. Again, the writer's space being limited, he can not devote sufficient of it to the necessary details, and consequently gives us but a poor understanding of his subject.

The happy object of the present work is best expressed by quoting from the preface: "The general practitioner, more particularly he who labors in smaller communities, must be a specialist in all branches of medicine. The demands upon his waking and sleeping hours are usually so great that time is not his for extensive literary research or for study of exhaustive theoretical volumes. Herein lies the motive for the present effort of the writer to offer as concisely as possible the essential facts in connection with the treatment of gonorrhœa, and to place before the busy practitioner the results of his experience."

Special importance has been given to the technics of irrigation in acute gonorrhœa. Quoting from the statistics of Goldberg, the author concludes that sixty per cent. of acute cases are cured within ten days, and thirty per cent. in fourteen days, ten per cent. only being unsatisfactory. We know of no other treatment which will show ninety per cent. of cures within fourteen days with only ten per cent. of failures. The advantages of dilatation and irrigation combined in chronic gonorrhœa are fully considered, and the author devotes much space to the dangers of uncured gonorrhœa, and to the means of learning the situation of the foci of the disease, especially after its external manifestations have subsided. He urges the physician to use his influence for the dissemination of a better understanding of the disease and concludes by saying that if in one instance his purpose is accomplished he will feel amply repaid.

Under the head of circumcision the writer says he does not hesitate to operate, even if the patient is suffering from acute gonorrhœa. He states that the objections that may be offered are possible infection of the wound, especially when the urethritis is of a mixed character, and, secondly, the difficulty of manipulation of the penis, as in irrigations, before the circumcision wound heals. The dangers of infection, he maintains, may be overcome by allowing a constant stream of mercuric bichloride (1 to 30,000) to play over the parts. The second difficulty he overcomes in his method of operating, which differs only from the adopted practice in his use of the rubber band for the control of hæmorrhage during the operation and his absolute faith in sutures to prevent secondary hæmorrhage. When acute gonorrhœa exists, we should think it better to confine our efforts to the relief of the phimosis only, leaving a secondary operation, for cosmetic reasons, to follow when the parts are free from the possibility of infection.

Dr. Valentine's work needs no indorsement; the author's past writings have established him as a master of his subject, and we can only express our pleasure in the perusal of such an instructive and attractive manual.

Consumption: its Nature and Treatment. With a Chapter on Bacteria and Antiseptics. By WILLIAM H. SPENCER, M. A., M. D., Cantab., M. R. C. P. Lond., Consulting Physician to the Bristol Royal Infirmary, etc. London: Henry J. Glaisher, 1900. Pp. 83.

THIS little book is intended to induct the educated public into the mysteries of consumption, including its nature and treatment. That the work is original is clearly stated in the preface, from which we quote: "This is no compilation. What I tell of, that have I seen; what I teach, that has experience taught me."

Nordrach at Home, or Hygienic Treatment of Consumption. Adapted to English Home Life. By JOSEPH J. S. LUCAS, B. A. Lond., M. R. C. S., L. R. C. P., Late Medical Registrar and Pathologist at North London Consumption Hospital. London: Simpkin, Marshall, Hamilton, Kent, & Co., Limited, 1900. Pp. viii–9 to 60.

THE most successful treatment for consumption is acknowledged to be the method variously termed Nordrach, open-air, hygienic, sanatorium, etc. The object of this little book is to adapt the principles of this treatment to English home life. This little work is well worth a careful reading.

Cura e guarigione della tubercolosi polmonare. Por Dott. CARLO RUATA, prof. di materia medica nell' Università e d'igiene nel Regio Istituto agrario sperimentale di Perugia. Città di Castello: S. Lapi, 1900. Pp. 7 to 102.

THIS monograph on pulmonary tuberculosis first describes the gross and minute pathology of the disease, which is made especially attractive by the addition of a number of drawings. In conclusion, the author discourses at length on the advantages of the open-air and sanatorium treatment.

Golden Rules of Physiology. By I. WALKER HALL, M. B., Ch. B. (Vict.), Senior Demonstrator in Physiology, Owens College, etc., and J. ACWORTH MENZIES, M. D., C. M. (Ed.), Late Senior Demonstrator in Physiology, Owens College, Victoria University, etc. Golden Rules Series. No. VI. London: Simpkin, Marshall, Hamilton, Kent, & Co., Ltd., 1900. Pp. 5 to 80. [Price, 1s.]

THIS little book is intended as a quiz compend for students about to enter an examination. The alphabetical arrangement of the subjects greatly enhances its value.

BOOKS, ETC., RECEIVED.

The Treatment of Fractures. By Charles Locke Scudder, M. D., Surgeon to the Massachusetts General Hospital, Out-patient Department, etc. Assisted by Frederick J. Cotton, M. D. With Five Hundred and Eighty-five Illustrations. Philadelphia: W. B. Saunders, 1900. Pp. 9 to 433.

Practical Gynæcology. A Handbook of the Diseases of Women. By Heywood Smith, M. A., M. D. Oxon.

Second Edition, revised and enlarged. London: Henry J. Glaisher, 1900. Pp. xxiv–230.

The Ophthalmic Patient. A Manual of Therapeutics and Nursing in Eye Disease. By Percy Fridenberg, M. D., Ophthalmic Surgeon to the Randall's Island and Infant's Hospitals, etc. New York: The Macmillan Company, 1900. Pp. x–312. [Price, $1.50.]

The Care of the Child in Health. By Nathan Oppenheim, A. B. (Harv.), M. D. (Coll. P. and S., N. Y.), Attending Physician to the Children's Department of Mount Sinai Hospital, etc. New York: The Macmillan Company, 1900. Pp. vii–308.

A Treatise on Nasal Suppuration; or Suppurative Diseases of the Nose and its Accessory Sinuses. By Dr. Ludwig Grunwald (of Munich). Translated from the Second German Edition by William Lamb, M. D., M. C. Edin., M. R. C. P. Lond. (of Birmingham). With Eight Illustrations in the Text, Two Plates, and One Table. New York: William Wood & Co., 1900. Pp. xii–335.

Golden Rules of Ophthalmic Practice. By Gustavus Hartridge, F. R. C. S., Senior Surgeon, Royal Westminster Ophthalmic Hospital, etc. Golden Rule Series. No. VIII. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent, & Co., Ltd., 1900. Pp. 6 to 69.

Diseases of the Intestines. A Text-book for Practitioners and Students of Medicine. By Max Einhorn, M. D., Professor of Medicine at the New York Post-graduate Medical School and Hospital, etc. William Wood & Co., 1900. Pp. xiv–391.

The Cell in Development and Inheritance. By Edmund B. Wilson, Ph. D., Professor of Zoology, Columbia University. Second Edition, revised and enlarged. New York: The Macmillan Company, 1900. Pp. xxi–483. [Price, $3.50.]

Twenty-fifth Annual Report of the Secretary of the State Board of Health of the State of Michigan. For the Fiscal Year ending June 30, 1897.

Twenty-eighth Annual Report of the Roosevelt Hospital, New York. From January 1, 1899, to December 31, 1899.

Proceedings and Addresses at a Sanitary Convention held in Traverse City, Michigan, August 22 and 23, 1899.

Miscellany.

The Surgery of the Nasal Sæptum and the Turbinal Bodies.—At the annual meeting of the Medical Society of the State of New York a discussion of this subject was opened by Dr. Orlando B. Douglas, of New York. In the treatment of nasal obstructions, which caused nine tenths of all so-called nasal catarrh, he said, the necessity for surgical procedure was not appreciated by average non-specialists, and its value not likely to be overestimated by any one. The nose was the most vulnerable part of the human body. Not only was it subject to injuries, but its functions exposed it to various diseases. One took cold, and the erectile tissue of the nose was congested, and the nostrils were obstructed. In normal breathing we inhaled germs of disease carried in the air, irritants in the form of dust, and acrid gases of varying degrees of heat and cold.

Before our advent and during our *début* in this world injuries were inflicted upon this exposed member that no other had to endure. Delicately attached cartilages were displaced, and the full effect of this might not show itself until years afterward. Then followed the ills of babyhood; children's little nostrils became obstructed and, since they were incapable of clearing them, the secretions were retained and became acrid, irritated the mucous surfaces and stimulated the growth of gland tissue, thus laying the foundation for adenoids and hypertrophies. Children fell and bumped their noses in their incipient efforts to walk. The pugnacious schoolboy with fistic proclivities invited new exposure of the nose. Ubiquitous baseball and football and their experiences added to its woes. Uncertain footing and ineffectual effort to walk upright increased its burdens. Everybody in every stage of life subjected this prominent and important organ to indignities and injuries out of all proportion to the average of injuries sustained by any other member of the human body. It was not strange that we found so large a proportion of the human race suffering with rhinitis, otitis, pharyngitis, amygdalitis, laryngitis, gastritis, bronchitis, and all the neuralgias and reflexes that might result.

A characteristic of modern medicine was to search for the sources of disease and strive to remove them, to suppress that which produced the effect, to eliminate the cause. It did not suffice to treat symptoms, to arrest the victim and allow the culprit to escape, to treat mere manifestations of existing evil. So-called nasal catarrh was but a symptom or resultant of conditions preceding its manifestation. The cause was pretty certainly a persistent contact of surfaces in the nose that ought not to touch.

An experience of twenty-three years in studying nose, throat, and ear troubles, during which time several hundred thousand visits had been made to his clinics, had convinced the author of the superior methods of surgery in correcting causes of catarrh. Hypertrophies, deflections, exostoses, and ecchondroses could in no other way be so easily removed and effectively cured as by pure surgery. Drugs might temporarily subdue swelling; acids might destroy an uncertain portion of soft tissue; the cautery might remove superfluous parts or burn an obstruction, but was too dangerous to be used by any but expert specialists. If one removed with snare, saw, or scissors the exact amount necessary to relieve stenosis or persistent contact and healed the wound, he did for his patient in the simplest manner possible all that science could devise or art accomplish.

The Use of Opium in Inflammations.—Sir Samuel Wilks (*Practitioner; Canadian Journal of Medicine and Surgery*, April), in a paper On the Treatment of Pneumonia, says:

"My own first knowledge of treating disease was from Addison, who was the leading light and teacher for many years at Guy's. The routine method in all inflammatory diseases—in fact, in all affections whose names ended in 'itis'—was the administration of a saline mixture with an antiphlogistic pill composed of calomel, antimony, and opium; the antimony was sometimes omitted and the doses of opium and mercury modified according to circumstances. Whatever doubts I may entertain as to the value of antimony in inflammatory affections generally, I have none with regard to opium. I learned to give it from my master, and have continued the practice ever since. I have the firmest belief in its powers of arresting or controlling inflammatory action. I can not doubt this when I witness a dose of laudanum at once stop a sore throat, and see a rapidly spreading ulcer on the leg quickly heal as soon as the patient takes opium. Just as this drug lowers or retards the natural functions and secretions of the body with other tissue changes, so it tends to arrest morbid processes or those unnaturally set up in various parts of the body. The most remarkable fact connected with this drug is the circumstance of its being so often put aside for very poor substitutes. When meeting medical men in consultation in cases of pneumonia, I very rarely find it given, and, on asking why not, the usual answer is that there is no indication for its use, there being no pain and no insomnia. It is quite the exception to find any younger man know of opium as a real remedy, or of its being antiphlogistic according to the old phraseology. I might add that Sir William Gull ordered opium in pneumonia up to his last days. Just as I have seen opium beneficial, so I believe many of its substitutes are very depressing. Scarcely one of these products made in the chemical laboratory, and which act so powerfully on the nervous system, but have a depressant effect on the heart's action. As a matter of safety when long continued none of them can be compared with opium, which may be taken with impunity for years without any serious consequences. This can not be said of other substances."

The Prevalence of Malaria among Children.—The *Polyclinic* for March notices editorially the recently published reports of Koch in Java and Celli in the Roman Campagna, both of which lay stress on the frequency of malaria in children. Koch insists on the presence of the malarial parasite in the blood of children as the only real test of the prevalence of malaria in a community, since many adults who have survived the attacks of childhood are thereby rendered more or less immune. In some villages as many as twenty per cent. of the children examined were found to be infected, and the percentage was higher in the younger children. An immunity by survival he thinks is constantly going on, and malaria is responsible for much of the high infant mortality in the tropics. This fact has a special bearing on the well-known difficulty of rearing European children in the tropics. Further, an important test is thus supplied whereby indigenous and imported malaria may be distinguished in a community. If the cases occur among adults and the children's blood shows an absence of the parasite, especially when, as is sometimes the case, the locality is free from mosquitoes, it may be surmised that the disease was contracted elsewhere.

The German Medical Society of the City of New York.—At the next meeting, on Monday evening, June 4th, Dr. Joseph Wiener, Jr., will show a specimen of intussusception in a nursling; Dr. Carl Beck will read a paper on Errors in Röntgen-ray Depiction, and Dr. H. Riedel will read one on The Homunculus of Paracelsus, an Anagrammatic Oracle Apparatus; Experimental Contributions to the History of the Sciences on the Basis of the Ancient Chinese *Book of Transformations*.

An Interesting Case of Pachymeningitis.—Dr. Samuel E. Earp and Dr. John T. Scott (*Medical and Surgical Monitor*, May 15th) report a case of pachymeningitis with an account of the autopsy which, owing to the fact that pachymeningitis is frequently found post mortem, but rarely diagnosticated during life, probably because of the great variability of its symptoms and its frequent complication with other disorders, will prove interesting. The subject of the report had been under Dr. Earp's observation nineteen years and fifteen under his professional attendance:

J. H., a woman, aged forty-three, weight a hundred and ninety pounds. When seventeen years of age she frequently complained of pain in the crown of the head, but not sufficiently severe to disable her in any way. No condition of the uterine organs requiring attention; menstrual epoch dated from an early age, was always regular; patient had been married, but at no time was there evidence of pregnancy. No evidence of any constitutional disease. At the age of twenty the patient was suddenly seized with a convulsion, of which the description given resembled that of epilepsy; several of the same character appeared during the year, but did not confine the patient to bed; severe headache lasting several days followed.

For the next three years nothing eventful occurred. At the age of twenty-three, while witnessing a play at the theatre, she complained to her escort that the surroundings were dim in appearance and she could not distinguish the players on the stage. On the following day she described objects as double; a few days later there was marked convergent strabismus. For several months she was confined to bed, and for a year to the house, but was able to go from one portion of the house to another. Conversation incoherent at times. Apparent recovery in all respects at the end of a year, with the exception of a constant dull pain, at intervals very acute, in the region of the occiput.

On January 31, 1897, the patient was attacked with a convulsion, light so far as outward manifestations were concerned; but periods of unconsciousness preceded by nausea and dizziness seemed to occur several times a day. These resembled attacks of syncope, and in each instance the pain in the occipital region was extremely severe both before and after the attack. The countenance was dull, the eyes heavy, there was an inclination to drowsiness; dull pain, more severe at times, was still complained of. When stooping to pick up an object from the floor, patient had an inclination to fall, and for a few moments she had a staggering gait and complained of the room being dark; after a rest of half an hour these conditions, with the exception of the pain, seemed to pass away. There was hyperæsthesia of the skin and muscles, which condition lasted several weeks. Appetite fair at all times; memory deficient; it was necessary to make a memorandum of occurrences. The eyes occasionally possessed a staring appearance, otherwise normal; at no time was the patient confined to bed, but reclined on a cot; a portion of each day she also complained of being weary. No hysterical manifestations whatever. At the expiration of a month all symptoms were ameliorated, and there was a gradual convalescence. At the end of the second month the patient was apparently well with the exception of the dull pain in the back of the head, varying in intensity, but not preventing her from attending to household duties or visiting the stores. During the major part of August, 1899, and a part of September the patient was indisposed; pain in the head was more severe than usual; relief at intervals; insomnia; appetite poor. October 1st she had recovered to all outward appearances, with the exception of pain in head as heretofore. November 4, 1899, the patient, feeling as well as usual, had eaten a light meal, and was seated on a couch in conversation with friends, when at 8.30 o'clock she suddenly acted as if startled, raised her hands above the head, her legs were extended, the eyes open and staring, and she was stiff and motionless for a few moments; as soon as consciousness returned there were paroxysms of jerking of the limbs when touched, or on coughing. Constant desire to pass urine, although the bladder was empty. There were constant exclamations of "Oh," but no pain was complained of except at the back of the head; she refused to lie down; dyspnœa was exaggerated. At 9.30 she fell as the medical attendant entered the room. There was opisthotonus for several minutes; the muscles of the face were contracted; the mouth drawn to left side, and white froth exuded therefrom. When consciousness returned there was an inclination to sleep, the other symptoms remaining with the exception of stiffness of the left leg and arm. Incoherent talk at one period during the night for a few moments only. Toward morning convulsions became more frequent, and the patient died at 7 A. M.

At the autopsy, on opening the skull, the dura was found to be firmly attached to the entire surface of the vertex and very much thickened. The branches of the middle meningeal artery were enlarged and tortuous, rendering the membrane very vascular. The arachnoid was firmly adherent to the dura. The greatest amount of thickening was found at the junction of the dura with the falx cerebri, and was composed of a complex mass of coarse connective-tissue fibres and inflammatory exudate. At the border of the mass, a large bone projected downward and imbedded itself in the supraparietal convolution of the right cerebral hemisphere. It was half an inch long and a little more than a quarter of an inch wide, having a broad base at the point of attachment to the dura and a thin serrated border. Several large connective-tissue bands crossed the body of the bone in a seemingly abortive attempt to bind it down to the membrane. The sharp, bony spicula of the serrated border, however, projected beyond the bands, and in immediate proximity to them an artery of considerable size was ruptured, which was supposed to have been the source of a recent extensive hæmorrhage covering the occipital lobes and postero-lateral portions of the parietal lobes. Several smaller bony growths were also present on both sides of the falx, and a large, flat, platelike body was visible to the left of the large bone. Other plates were also found. A section from each of the growths was made and examined microscopically, with the result that none of them, except the wedge-shaped growth before described, showed typical bone formation. The platelike bodies showed no evidence whatever of bony growth, but were composed of a coarse network of fibres partially calcified. No growths were found in the falx cerebri.

Upon this the authors remark:

"The pathological condition is especially interesting when considered in connection with the history of the case. The evidences of an old inflammation of the dura serve to explain the frequent pain in the head and the convulsions from which the patient suffered between seventeen and twenty-one years of age. The gradual extension of the inflammatory process, accompanied at intervals, no doubt, by hæmorrhage and extravasation, involved the visual centres and affected the mental faculties.

"The thickening of the membrane was continuous over all of the parietal lobes and a considerable portion of the occipital and frontal lobes, and projecting downward from its inner surface were the numerous bony growths above described. These probably had their origin in occasional hæmorrhagic extravasations, which were, at the time of their occurrence, responsible for the convulsive seizures and other concomitant symptoms. Headache of varying severity was continuous from the earliest history of the case. The convulsive seizure on the evening preceding death was probably the result of the hæmorrhage revealed at the autopsy. There were about three ounces of blood beneath the dura."

Horse Sickness and Mosquitoes.—The *New York Times* for May 26th cites the London *Standard* as saying in a dispatch from Berlin under date of May 9th that Chief Surgeon Kuhn, who has been investigating the cause of horse sickness in German Southwest Africa, has now informed Governor Leutwein that he has completely succeeded in solving the question. He considers the disease to be a kind of malaria transmitted by mosquitoes. At the governor's request he has delayed his departure for Europe, on leave, in order to conclude his experiments in protective inoculation. A large number of horses which had been attacked were brought to him for inoculation, and are now quite recovered. The cure lasts eight weeks, and the animals must not be ridden during that time.

The New Beth Israel Hospital.—The corner stone of the new building for this non-sectarian institution, supported solely by voluntary contributions, was laid by President Harris Cohen on May 26th. The new building is to be situated on Jefferson and Cherry Streets, and will accommodate over a hundred patients. It is a five-story building, covering seventy-eight by a hundred and twelve feet, and is estimated to cost $115,250, not including the ground or furniture and equipment. Several addresses were delivered, among them one by Dr. A. Jacobi.

The Plague in South Africa.—According to a report from Durban dated May 24th, a case of bubonic plague is announced officially from Durban. The most stringent measures have been put in force and every effort is being made to prevent an epidemic among the troops. Later reports state that no new development has occurred, but that precautions have been in no degree relaxed.

A Military Medical Board to Study Cuban Infectious Diseases.—According to the *New York Times* for May 26th, a board of medical officers has been appointed to meet at Camp Columbia, Quemados, Cuba, for the purpose of pursuing scientific investigations with reference to the infectious diseases prevalent on the island of Cuba. The board consists of Major Walter Reed, surgeon; Acting Assistant Surgeon James Carroll, Acting Assistant Surgeon Aristides Agramonte, and Acting Assistant Surgeon Jesse W. Lazear.

An X-ray Society.—The Röntgen Ray Society of the United States has recently been organized. Dr. Heber Robarts, of St. Louis, is the president, and Dr. J. Rudis-Jicinsky, of Cedar Rapids, secretary. The regular meeting will be held in New York in December.

The Richmond Academy of Medicine and Surgery.—At the meeting of Tuesday evening, May 22d, The Effects of Gastro-intestinal Fermentation on the Urine and Kidney was the subject of a discussion opened by Dr. M. E. Nichols.

Original Communications.

CLINICAL AND PATHOLOGICAL OBSERVATIONS ON SOME EARLY FORMS OF EPITHELIOMA OF THE SKIN.

By J. A. FORDYCE, M. D.,

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The importance of an early recognition of malignant disease is so well established that it scarcely needs to be emphasized.

The dermatologist, however, not infrequently meets with cases in which early and late specific granulomata have been wrongly diagnosticated as malignant tumors and removed by surgical methods. On the other hand, instances of cancerous ulceration of the skin are encountered where a diagnosis of tuberculosis or syphilis had been confidently made and the patient deprived of early and appropriate treatment. Mistakes in the diagnosis of the affections in question are perhaps not so surprising when we recall that both syphilis and lupus are at times followed by the development of malignant disease, and that the more precise features which mark each disease to the expert are unfamiliar to the general surgeon.

It is to the dermatologist that one must look for a description of the early changes in the skin which precede the development of the epitheliomata as well as of the primary forms which such growths are prone to assume. The ease with which these small tumors can be removed, and their cells fixed while living and in active division, offers such favorable conditions for their study that I am prompted to briefly describe some of the clinical and histological features of a number of the typical forms which have come under my observation.

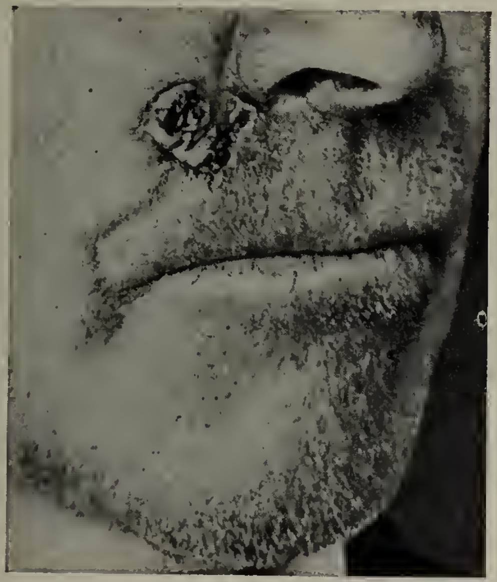

Fig. 1.—An early stage of rodent ulcer of the face which began as a pearly nodule. It now shows central atrophy and ulceration with the characteristic hard and elevated edges.

There are certain comparatively benign epithelial growths, met with on the face especially, which may for years show no tendency to break down or extend. Under certain conditions, however, they may assume a local malignant character and pursue the course of the well-known rodent ulcer type of superficial epithelioma.

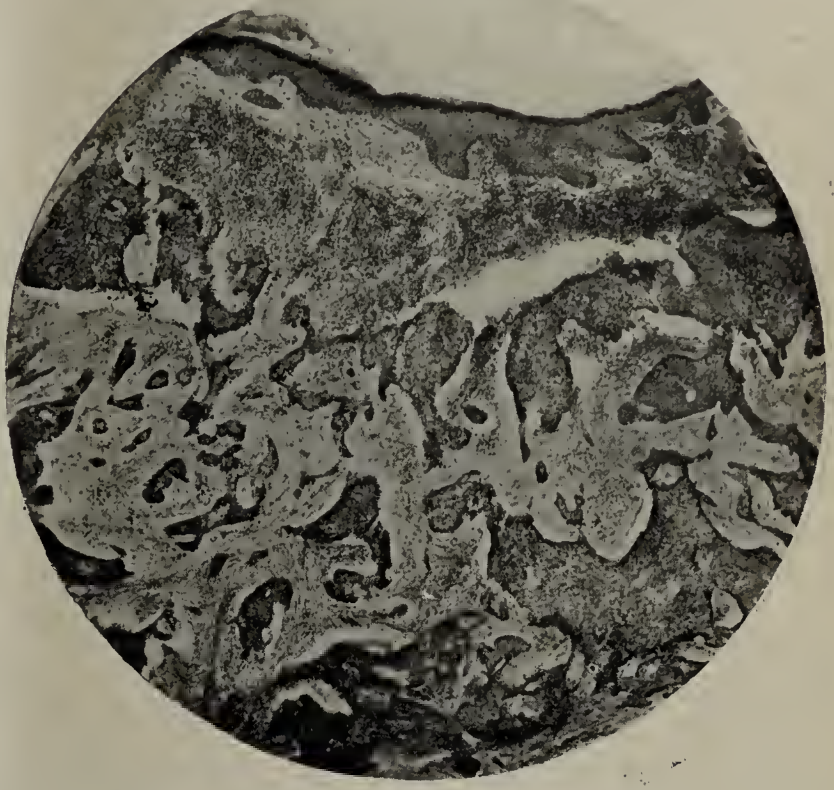

Fig. 2.—Spencer 1-inch objective, 1½-inch ocular. Section through small pearly nodule of the face, showing the epithelial processes invading the lymph spaces of the derma. The epithelial cells are imperfectly stained by reason of the degeneration they have undergone.

The growths in question are small, hard, yellowish-white, or pearly gray nodules, which exist with more or less frequency on the faces of middle-aged individuals. They are often multiple, and sometimes show a slight central depression. In the majority of cases they remain localized and, if removed, show little or no tendency to recur. In other instances, the centre of the nodule atrophies or ulcerates while extension at the margin takes place (Fig. 1), giving rise to open epitheliomatous ulcers which pursue a chronic course.

Histologically, such tumors are true epitheliomata, having their origin in the surface epithelium. They are made up of small epithelial cells extending throughout the connective-tissue spaces of the cutis in branching processes (Fig. 2). The epithelial cells are poor in chromatin and show few or no mitoses. The further proliferation of the cells seems to be checked by a hyaline or other degeneration which they undergo, thus explaining why they usually are stationary after attaining a certain size.

The connective tissue between the branching processes of epithelium is thickened and infiltrated with small cells, and parts of the tumor look not unlike the older portions of a scirrhus of the breast. It would be instructive to determine why in one case such nodules remain as innocent localized affections, while in another they produce such marked tissue destruction.

I have examined a dozen or more of such nodules, and the majority presented the microscopic appearance shown in Fig. 2. In one, however, which I have lately examined, the small tumor, which presented identical clinical features, proved to be a typical adenoma of the sebaceous glands.

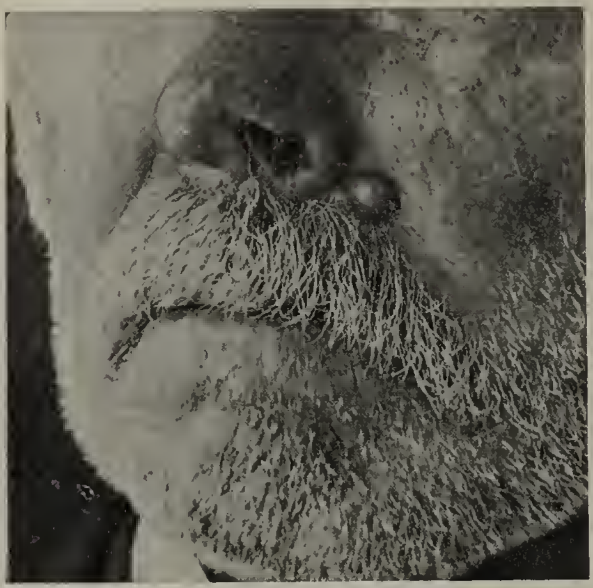

FIG. 3.—A brownish-red nodule of five years' duration. Its excision was followed by no recurrence.

Another primary form of epithelioma of the face which I have sometimes encountered is a brownish-red tubercle of hard or rather soft consistence, which may be elevated a quarter or a third of an inch above the skin level and reach the diameter of half an inch before breaking down. The skin covering such a tumor is quite smooth, and the condition may remain unaltered for a long time before giving rise to local ulceration. Under the curette these tumors break down readily, and if so removed before ulceration sets in no recurrence has been noted in a number of cases which I have observed for several years. The photograph (Fig. 3) portrays a typical case of this variety of epithelial new growth.

The patient, a man, aged seventy-two years, had noticed the small tumor on the cheek near the angle of the nose for five years. During the two months before he came under observation he had observed a perceptible increase in its size. The growth was the size of a large pea, hard, quite smooth, and covered by dilated capillaries. Its color was a reddish brown. No similar tumors were present on the face or body. Its excision was followed by no return.

Under the microscope the cells comprising the tumor were found to occupy the middle and lowermost portions of the derma, the papillary region being free. The character of the cells and their peculiar manner of proliferation are well shown in the photomicrograph (Fig. 4). The growth was made up almost exclusively of small epithelial cells arranged in narrow bands and cylindrical processes intertwined in the most complicated fashion. The cells showed an absence of prickles, and were, as a rule, rather faintly stained by the reagents used. Mitotic figures were quite abundant, as would be expected in a neoplasm which had exhibited recent activity of growth. The connection of the proliferating cells with the epidermis could not be made out in many sections examined. Such negative evidence is, however, of little value in determining the point of origin in the new growths, as it is so often obliterated in the progressive development of the tumors.

The form of epithelial new growth just described presents many similar histological features to the affection described by Brooke * under the name of "epithelioma adenoides cysticum," and by me † as "multiple benign cystic epithelioma." In Brooke's cases, as well as in my own, a large number of tumors were present, while the case in question is among the first described where a single tumor existed.

I recently excised small nodules from the alæ of the nose of two other patients which presented appearances identical with those in the foregoing case, and also resembled it in histological structure. A number of my friends have observed similar cases, but have not reported them.

In the original cases described by Brooke and myself the epithelial new growth was shown to start in the epidermis (Fig. 5), and the same observation was made by Bowen in White's case.‡

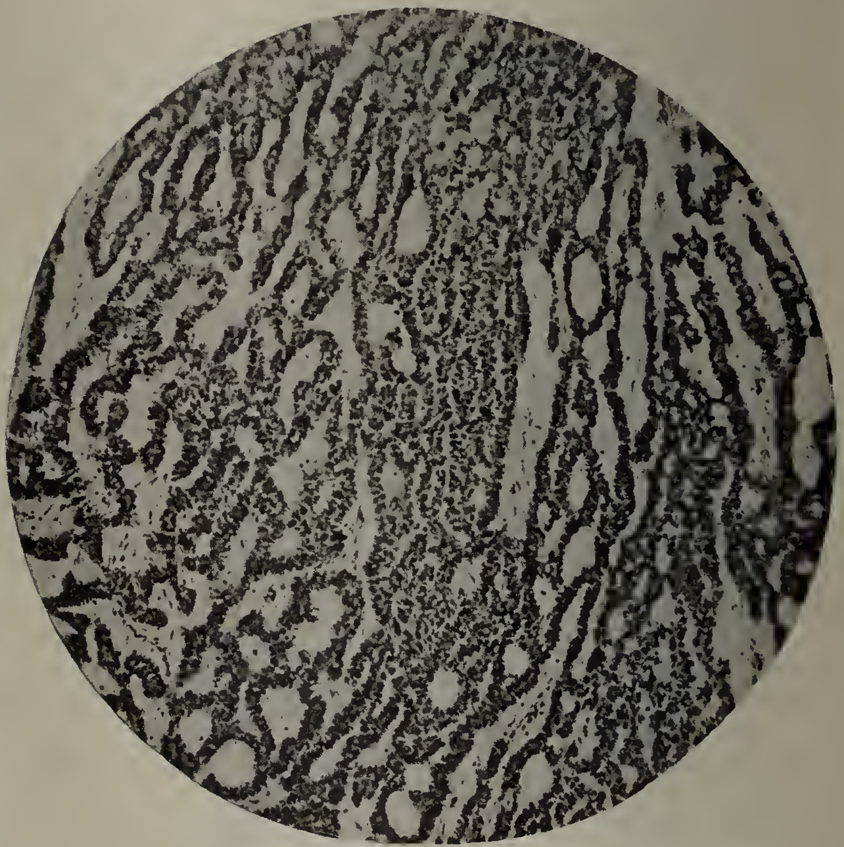

FIG. 4.—Spencer ⅙-inch objective, projection ocular 2. Photomicrograph of a section of the tumor shown in Fig. 3. The narrow bands and cylindrical processes made up of small epithelial cells.

The view is now generally accepted that such growths depend on misplaced embryonic epithelial cells, which remain latent until the age of puberty or later

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* *British Journal of Dermatology*, vol. iv, p. 269.

† *Journal of Cutaneous and Genito-urinary Diseases*, vol. x, p. 469.

‡ *Ibid.*, vol. xii, p. 477.

in life. In all cases reported the affection slowly progressed until a stationary period was reached, and remained quiescent for many years, at no time showing any malignant tendency. Dr. White's case of this so-called benign epithelioma differed from those previously reported in showing, besides the small multiple lesions, three or four open epitheliomatous ulcers involving the entire thickness of the skin.

The ulcerative lesions on the face presented the appearances of the rodent ulcer type of epithelioma, and had they been alone no other diagnosis would have been entertained. The great majority of the tumors, however, were of the benign type, and their identity with those previously reported was shown by the microscopic examination of Dr. Bowen. In this case the eruption was first noticed at the age of twenty-four. When the patient was thirty-five, certain tumors began to soften and were removed by caustics, their locations being represented by flat scars. She was forty-five at the time of Dr. White's report, and during the past few years the ulcers shown in the photograph illustrating the article appeared. It is possible that if other cases of this interesting affection were observed for a sufficiently long time they would be found to show similar malignant changes, so that the deviation from the usual course, as observed by Dr. White, may yet be shown not so exceptional as it now appears to be.

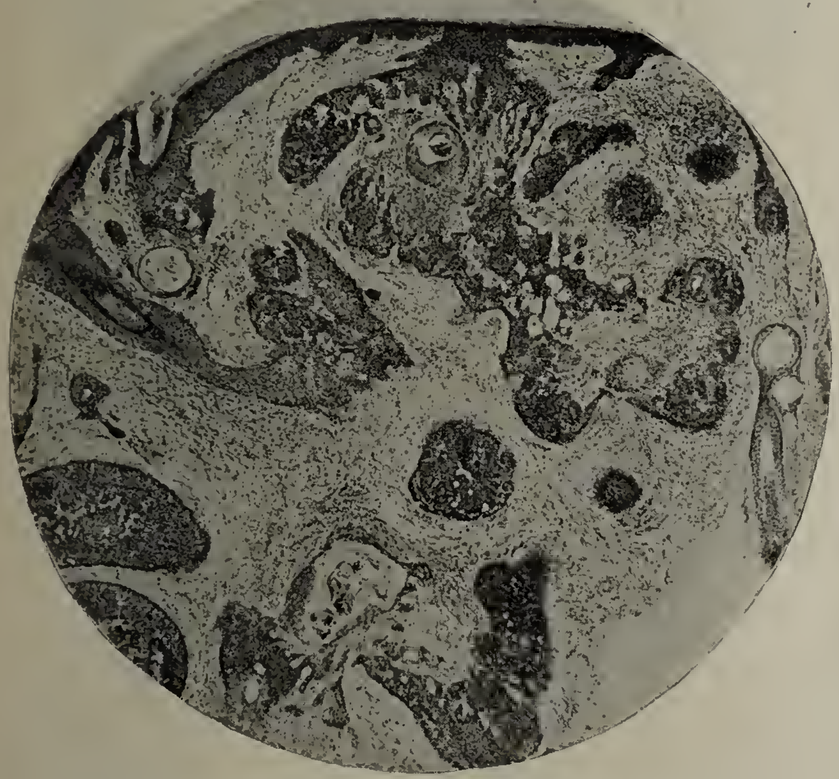

FIG. 5.—Spencer 1-inch objective, 1½-inch ocular. Multiple benign cystic epithelioma showing downgrowth of surface epithelium (original case).

This affection, and the pearly tumors of the face to which reference has been made, are alike in having multiple lesions, a benign course, as a rule, similar histological changes, and in the exceptional occurrence of open malignant ulcers.

It would be interesting to determine why the majority of these epithelial deposits remain in an inactive state for years, or for the lifetime of the individual, while some take on rapid growth and break down in ulceration. When such tumors begin to grow, experience teaches us that their development is hastened by partial excision or irritation, and that chronic irritation may be the exciting cause of such abnormal proliferation of epithelium.

We are, however, ignorant of the reason why certain embryonic epithelial cells when cut off from their normal connection and imbedded in the derma should remain latent or degenerate, while others undergo active division, infect the adjacent tissues, or reproduce the parent tissue in distant organs.

Certain analogies exist between these epithelial tumors and some of the congenital warts and moles which are made up of misplaced embryonic cells, of both the connective-tissue and epithelial types.

Most of such congenital affections do not give rise to malignant growths. Now and then, however, a very malignant cancer or sarcoma may have such an origin, and preserve many of the characteristics of the embryonic tissue from which it started.

Our conception of the interesting and peculiar affection described in this country as "multiple benign cystic epithelioma" has been widened by Dr. White's observation that the tumors do not always pursue a benign course, and by the fact recorded in the present paper that a single tumor, with all the clinical and histological features of those met with in the multiple outbreak, may exist.

Unna * has wisely separated the cases described by Török, Quinquand, Jacquet, and Philippson, from those of Balzer, Perry, Brooke, and myself—the first group of cases being, in his opinion, adenomata of the coil ducts, to which he gives the name "syringadenomata," while the second group undoubtedly originate in the epidermis and are called by him "acanthoma adenoides cysticum."

Were it not for the already burdensome nomenclature of skin diseases it might be well to follow his suggestion as to the use of acanthoma for such benign epithelial new growths, instead of the term epithelioma, which carries with it the implication of malignancy.

As our further observation has shown that such growths at times develop malignant qualities, we may hesitate before adopting his new designation.

Cancer of the skin, which follows or develops on some preexisting morbid condition, frequently comes under the observation of the dermatologist. Unlike cancer of the lip, the cutaneous new growth is usually secondary to some morbid change in the skin. The so-called senile or seborrhœic wart, which consists of an irregularly outlined and slightly elevated patch covered by a brownish or black crust, beneath which a papillary condition is found that shows some tendency to bleed, is a frequent precancerous lesion on the face and dorsal

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* *Histopathology of Diseases of the Skin*, p. 1117.

surfaces of the hands. It is found also on the trunk, particularly over the sternal and intraclavicular regions, a favorite site of seborrhœal eczema, and it is not confined exclusively to elderly people. A proliferating downgrowth of the rete cells is found in these lesions which gives them a warty appearance, and is probably the starting-point of the malignant transformation.

Multiple epitheliomata are sometimes met with which have this origin; indeed, such a condition is one of the most frequent causes of the simultaneous or successive outbreak of a number of malignant growths about the face and hands.

In Unna's opinion, many of these senile warts are nævi which have become the seat of a warty change, and he would attribute their malignant tendency to this fact.

It is true, however, that certain changes in the skin and underlying tissues which take place in old age develop independently of any antecedent congenital formation, and act in the same way in predisposing to malignant new growths.

Among such senile changes may be mentioned pigment deposits, papillomata, localized dilatation of the blood-vessels, atrophy of the subcutaneous fat and connective tissue, etc. These senile conditions are allied to those which exceptionally occur in the young in a more aggravated form, constituting the disease known as xeroderma pigmentosum, which terminates, as a rule, in one or more malignant growths. They are also met with in the condition known as sailor's skin, which Unna * has especially observed and investigated. The changes which take place on the exposed portions of the face and hands are at first a cyanotic redness, followed by pigment deposits and leucodermatous spots. Localized thickening of the horny layer of the epidermis next occurs, which in places assumes a warty character, to be followed by papillary and ulcerating epitheliomata. While in their early stages these ulcers pursue an indolent course, and involve only the superficial tissues, later they are more rapidly destructive than the rodent ulcers. The changes just described as the result of prolonged exposure to the weather find their analogue in the curious and mysterious affection, xeroderma pigmentosum, which usually manifests itself in infancy and affects several members of a family, though showing little or no hereditary tendency.

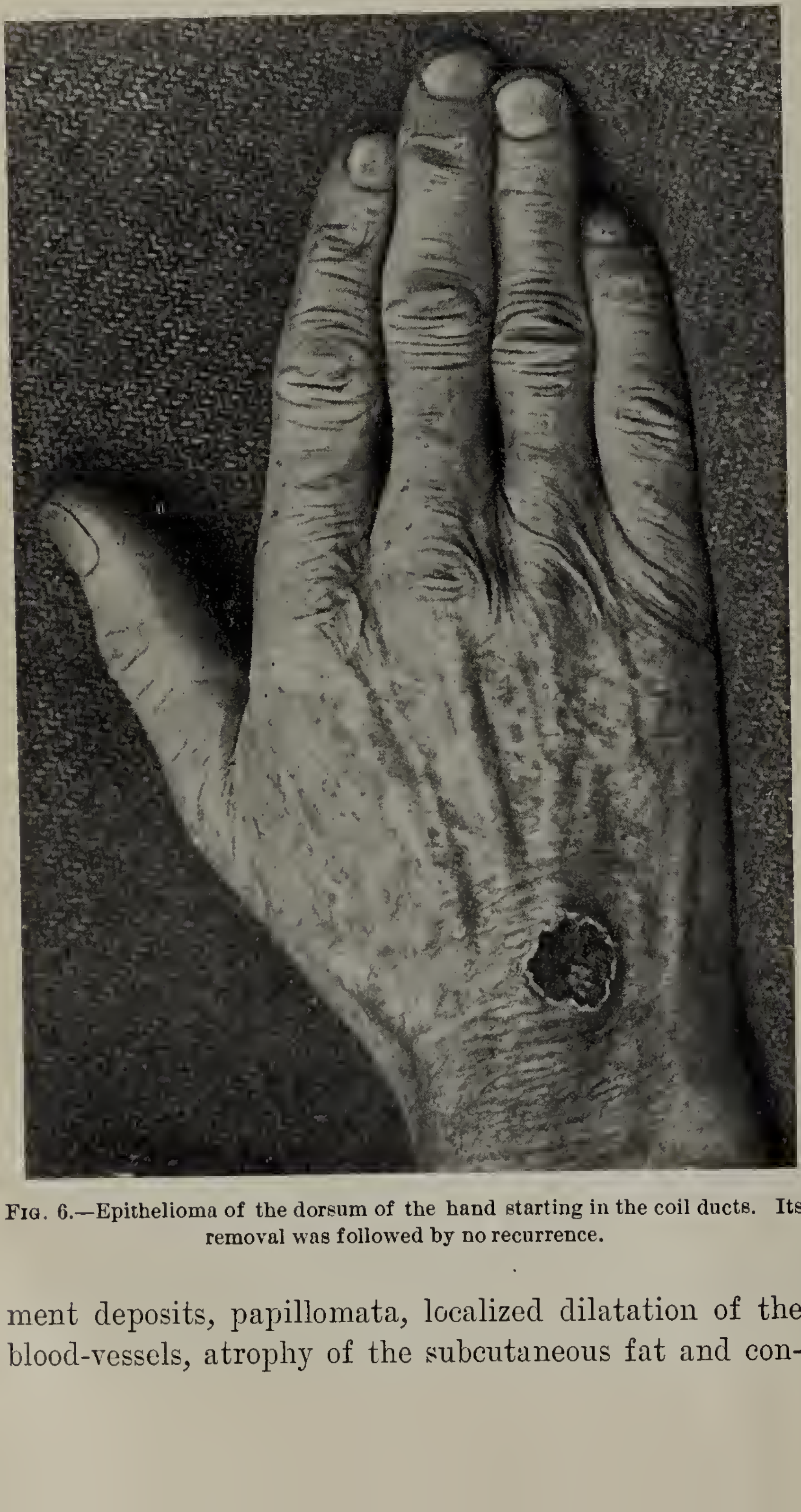

Fig. 6.—Epithelioma of the dorsum of the hand starting in the coil ducts. Its removal was followed by no recurrence.

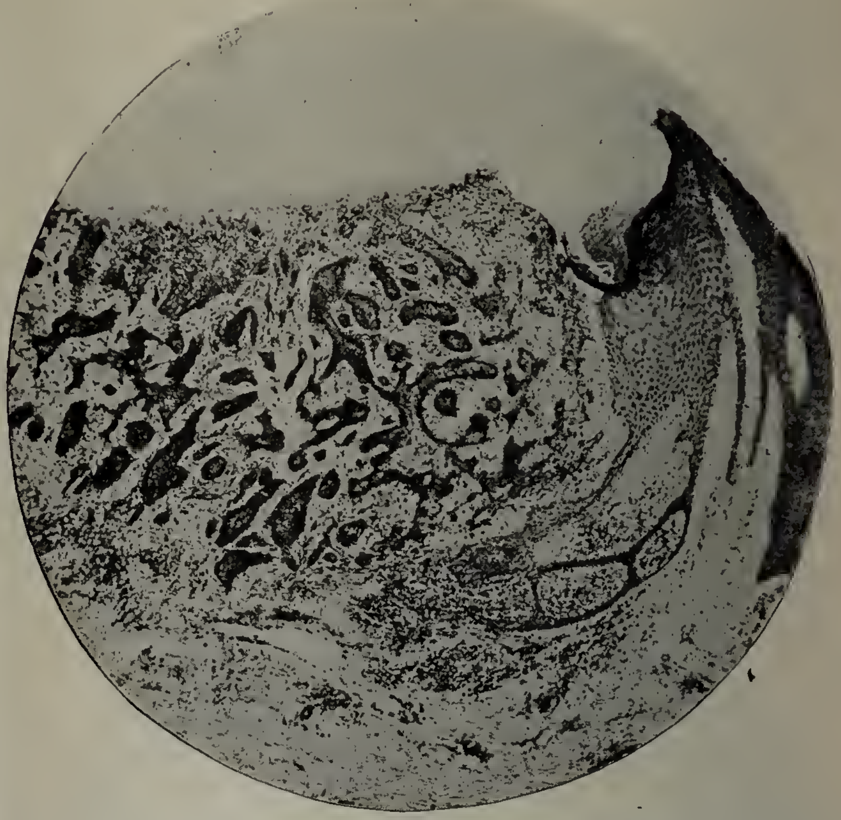

Fig. 7.—Spencer 1-inch objective, projection ocular 2. Coil-duct cancer of the dorsum of the hand, showing the superficial situation and general distribution of the proliferating epithelium.

It develops, under the influence of the sun's rays on the face and exposed parts of the body, as an erythematous and papular rash, followed by disseminated pigment spots resembling freckles, and atrophic areas. The skin becomes rough, and a warty growth springs from the pigmented spots, as in senile keratosis, which develops into fungating tumors.

Some of these growths disappear, leaving scar tissue; others are destroyed by ulceration, which finally becomes epitheliomatous. Pigmented carcinomata have

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* *Histopathology of Diseases of the Skin*, p. 719.

been described in this connection as well as sarcomata. It is, however, doubtful if the latter growth takes place in xeroderma pigmentosum.

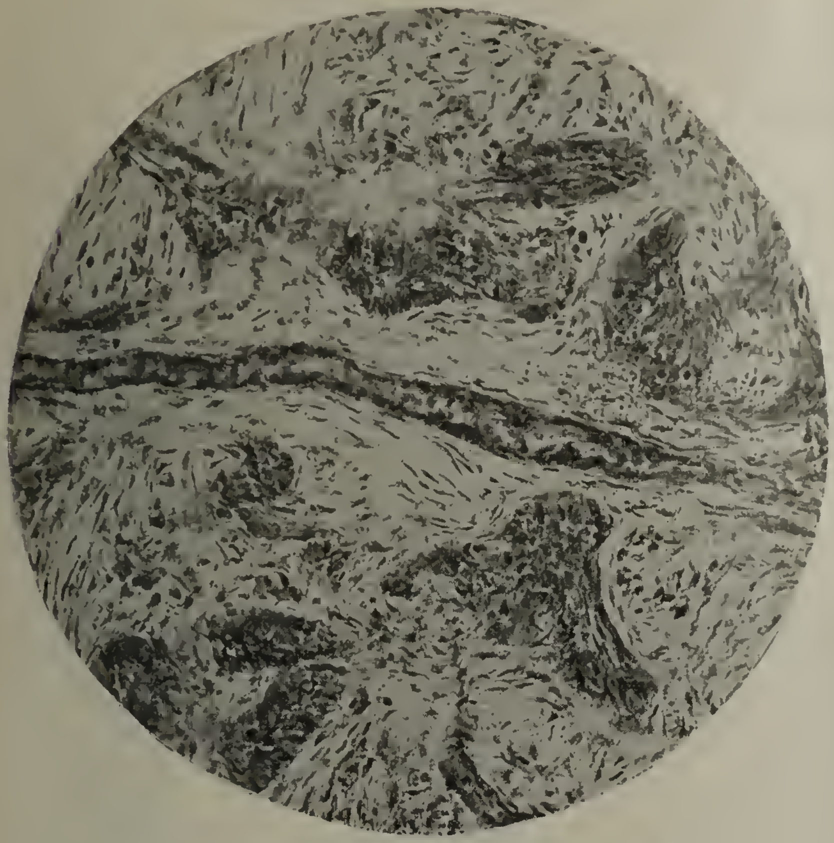

Fig. 8.—Spencer ¼-inch objective, compensation ocular 4. Showing coil duct dilated and proliferating its epithelial lining.

Epitheliomata are pretty sure to develop sooner or later, though their appearance may be delayed for many years. These malignant tumors, like those developing in an analogous manner, seldom implicate the lymphatic glands.

Nothing is known regarding the ætiology of this affection, excepting a congenital predisposition on the part of the skin to undergo degenerative changes as a result of the chemical action of the sun's rays. We have in ordinary freckles a condition which may be said to represent one stage in the same process, and in hydroa vacciniforme the sensibility of the skin to the sun's rays results in the occurrence of localized necroses followed by superficial scarring. The pigment deposits which take place on the face and hands in summer may be an attempt on the part of the tissues to shield themselves from the irritation of the chemical rays of the sun. The dark skin of the inhabitants of the tropics is probably provided for such a purpose.

The many points of resemblance between xeroderma pigmentosum and the senile or sailor's skin are striking and worthy of further study. The same primary vascular changes, pigmented areas, warty growths, and finally malignant neoplasms are encountered in all these conditions. Xeroderma pigmentosum has been called by Hutchinson a precocious senile condition of the skin.

In certain chronic specific inflammatory conditions of the skin, as lupus and syphilis, the development of cancer is favored by the changes which take place in the epidermis as well as those which occur in the true skin and underlying tissues. The epithelial growth is stimulated by the inflammatory condition present, while the resisting power on the part of the underlying tissues is lessened. In lupus vulgaris especially, epitheliomata occur with sufficient frequency to indicate more than an incidental relationship. They are apt to assume fungating forms, to prove rebellious to treatment, and to pursue a more rapid course than when independent of such a connection. Epithelioma has been known to follow lupus erythematosus, which is pathologically and clinically a distinct disease from lupus vulgaris.

The occurrence of malignant growths in scar tissue and in chronic ulceration has been frequently observed. In ordinary scar tissue the course of the affection is slower than in the scar tissue left by lupus. In the latter affection beneath the cicatrix there are nearly always evidences of the tubercular disease, and less resistance is offered to the epithelial ingrowth. I have observed large granulating surfaces resulting from burns refuse to heal after the application of the usual methods; their edges would become hard and elevated, while their granulations became firmer than ordinary granulation tissue and assumed a warty appearance. In two such cases microscopic examination revealed epithelioma of the squamous-celled variety, involving in one case a surface two thirds the extent of the forearm.

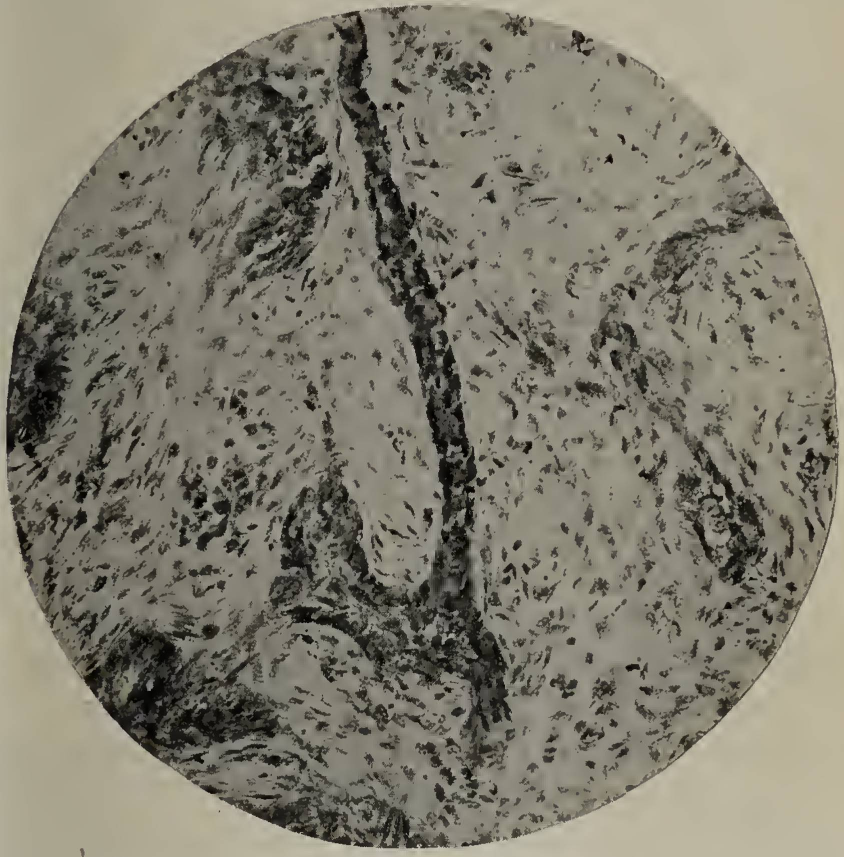

Fig. 9.—Spencer ¼-inch objective, projection ocular 4. Showing coil duct with proliferating epithelium communicating with cancerous process.

Carcinoma of the Coil Ducts.—There are but few well-authenticated instances of coil-gland or coil-duct cancer.

In an article on Adenocarcinoma of the Skin Originating in the Coil Gland * I described a case of deep-seated cancer of the skin which apparently had such an origin, and referred to other published reports.

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* *Journal of Cutaneous and Genito-urinary Diseases*, vol. xii, p. 41.

The photograph reproduced on page 892 (Fig. 6) imperfectly illustrates an epithelioma in which marked proliferation of the coil-duct epithelium was found, and which, in my opinion, started in these structures or affected them secondarily as a result of extension from a surface lesion.

It occurred in a man fifty years old, and when first seen had lasted for about three years. Its growth had been slow and was attended by no subjective sensations. The ulcer was about half an inch in diameter and irregularly rounded in outline. Its edges were neither elevated nor thickened, as in the ordinary rodent ulcer. The base of the ulcer, on removing the blood crust, was covered by pale granulations somewhat resembling the appearance of the ulceration in Paget's disease of the nipple. On grasping the ulcer between the fingers a thin, parchmentlike induration was distinctly felt. The growth was excised and chloride of zinc freely applied. The wound healed rapidly, and no return was noted after a year.

The accompanying photomicrographs illustrate the histological structure of the tumor.

In Fig. 7 (page 892) the absence of the epidermis over the ulcerated surface and the distribution of tubular processes of epithelium in the papillary and subpapillary areas are shown. The margin of the ulcer is indicated by the downgrowth of the surface epithelium. The corium between and beneath the new growth of epithelium is the seat of a connective-tissue growth and numerous lymphoid cells. Many ducts leading from the coils are dilated and filled with proliferating epithelium, and in some of the sections these ducts may be traced almost to the surface of the ulcer (Fig. 8). In Fig. 9 the transition of a duct full of proliferating cells into a cancerous process is well shown.

It is difficult to determine whether the primary malignant change took place in the coil structures or they were invaded secondarily as the result of a surface affection. If the latter supposition is true, we have an analogy between this case and Paget's disease of the nipple, which begins as a chronic dermatitis, invades the milk ducts, and finally results in a true carcinoma of the breast.

In Paget's disease of the nipple, which may exist for several years as a superficial dermatitis before invading the glandular structure of the breast, we have one of the best examples of a precancerous condition, the recognition of which as a definite type of disease eventually but certainly leading to malignant disease of the breast is of the greatest importance to the patient, for only by a radical and early operation can we hope to avert the deeper-seated affection.

(*To be continued.*)

SOME NEW TRACTION APPARATUS FOR HIP DISEASE, POTT'S DISEASE, ETC.*

By R. TUNSTALL TAYLOR, B. A., M. D.,
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FIRST VICE-PRESIDENT OF THE AMERICAN ORTHOPÆDIC ASSOCIATION, ETC.

I. INCLINED PLANE.

It is a recognized principle among orthopædic surgeons that in the acute stages of hip disease traction must be made in the line of the deformity, and to meet this requisite various inclined planes of wood have been devised. Unfortunately, hip cases are not exempt from the exanthemata of childhood, and should a wooden inclined plane be used in any infectious case nothing remains for the safety of future cases but burning the wooden apparatus—a costly measure. Notwithstanding the most scrupulous care on the part of the nurses, vermin may also be introduced into a bed by the patient, or friends of the patient, and the wooden inclined planes and their pads furnish favorable hiding and breeding places. I have therefore had made skeleton steel frames, nickel plated, which can be steam sterilized in such contingencies, and which resemble two small Bradford frames with one common end. On the uppermost frame, which supports the leg, can be laced a frame cover of twilled cotton that should extend from the gluteal fold to a point corresponding with the malleoli of the patient, thus removing all pressure from the heel, which at times with the older apparatus becomes sore. The uppermost frame has a series of holes in its distal end into any of which a steel wire arch can be inserted to prevent the pressure of the bedclothes on the toes. The uppermost frame moves on the lower one at their common end (the proximal end)

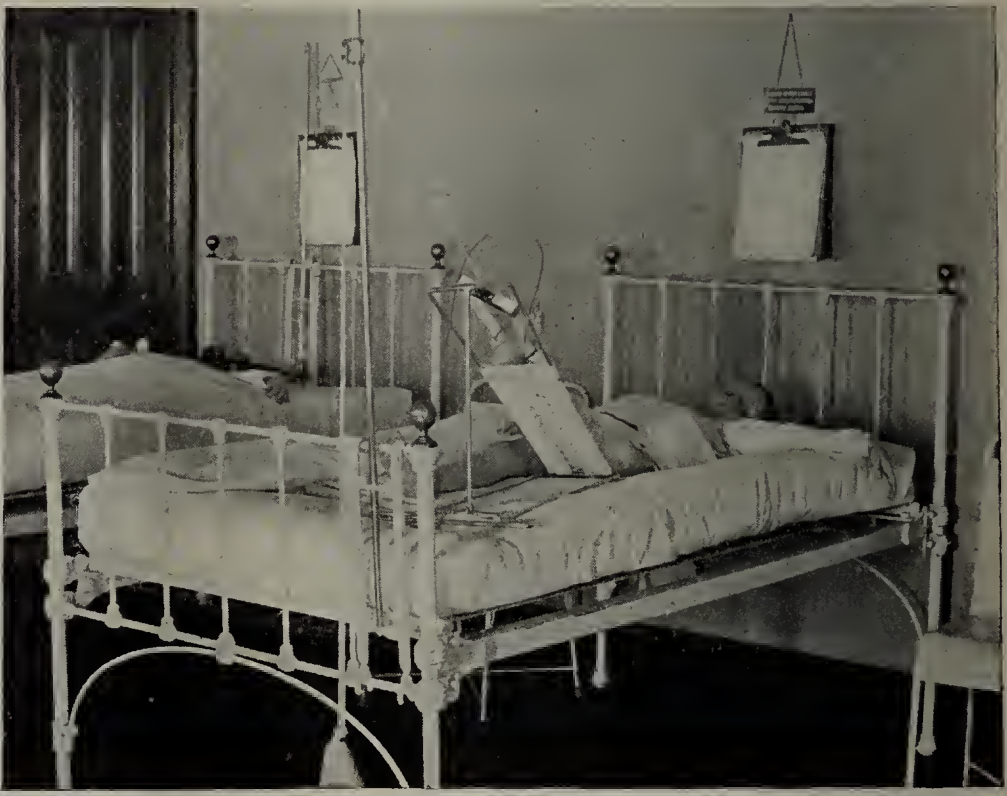
FIG. 1.

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* Read before the American Orthopædic Association, at New York, June 1, 1899.

as a hinge, and can be adjusted at any desired angle of the position of flexion by means of an inverted T, the arms of which slide on the sides of the lower frame. A chain is fastened to the junction of the arms and upright of the T, and by means of a pin in the centre of the distal end of the lower frame and this chain, the angle can be set.

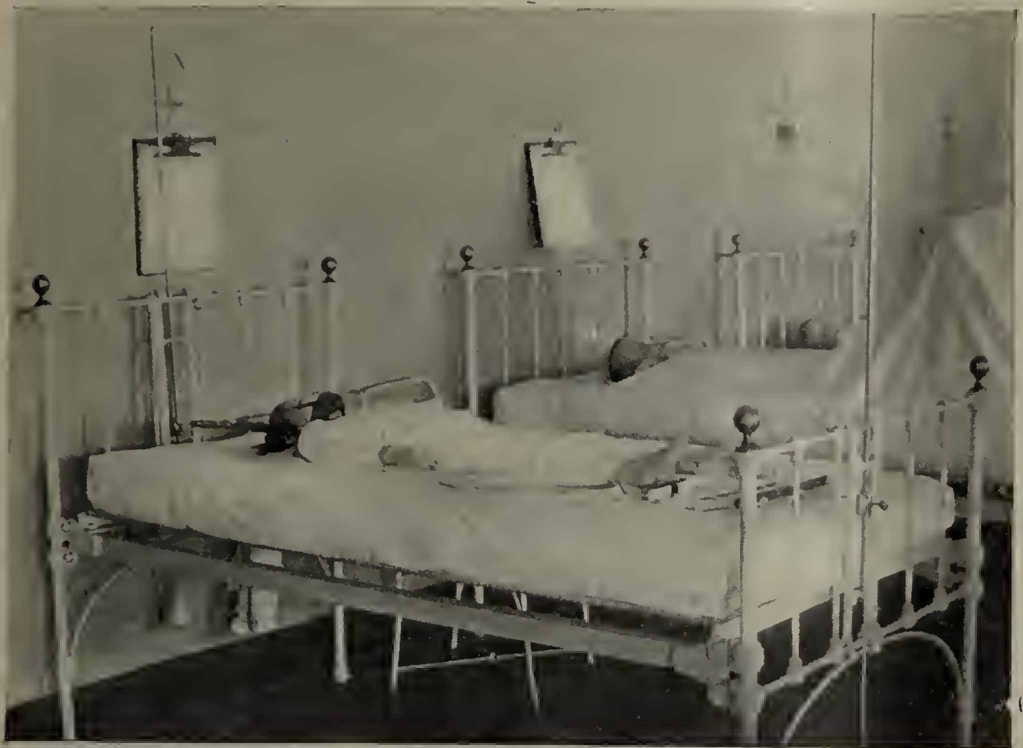


FIG. 2.

The lower frame differs from the upper in not being quadrilateral, but rather like a skeleton T to give a broader base of support.

Any position of adduction or abduction can be regulated by simply turning the end of the apparatus in or out, as the case requires.

II. NEW TRACTION PULLEYS, RODS, AND SUPPORTERS.

The same may be said in regard to cleanliness of the old wooden traction apparatus for hospital beds with adjustable pulleys. I have had made quadrilateral steel frames to hook on the head or foot of the beds above and below, as required. This portion is enameled white. Through the centre of the top and bottom of the quadrilateral portion are holes to receive a single nickel-plated steel rod carrying an adjustable nickel-plated pulley. The rod is of sufficient height to make traction on the leg up to an angle of sixty or more degrees, and the pulley can also be set to make traction on the plane of the upper surface of the mattress by means of a thumbscrew. This last position is especially useful in the acute stages of Pott's disease, where traction is indicated on both the head and legs, as well as in coxalgia.

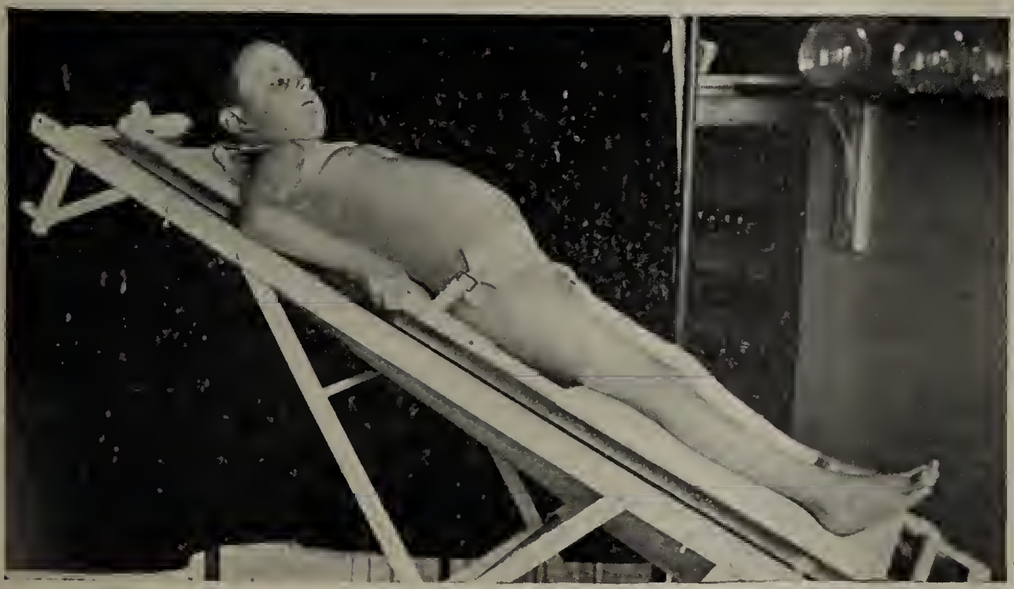


FIG. 3.

III. NEW METHOD OF FASTENING CHILDREN ON BRADFORD BED FRAMES.

The military cross straps that are ordinarily used are liable to slip or be unbuckled by restless children, and thus do away with the fixation desired. To avoid this, I have had made a short apron of twilled cotton, such as is used for the Taylor back brace, with buttonholes at the neck and axilla. Buttonholes are worked in corresponding positions in the frame covers, and webbing straps and buckles passing through these fasten the child's shoulders securely down.

A similar arrangement is made at the pelvis, consisting of a straight band with buttonholes at either end through which webbing straps can pass to fasten the child to the frame. While all of this equipment is a little more trouble to secure and slightly more expensive, we are sure of an apparatus that meets the requirements, and we have a permanent investment. The photographs show well the apparatus above described.

"ÆSTIVO-AUTUMNAL FEVER" IN NEW ORLEANS, SUMMER AND AUTUMN, 1899.

BY H. A. VEAZIE, M. D.,
NEW ORLEANS.

(Concluded from page 854.)

THE following is from Dr. O. L. Pothier, pathologist and bacteriologist to Charity Hospital:

> From all autopsies held of suspicious cases cultures were made and they remained free from the *Bacillus icteroides* and many gave no *Bacillus coli communis.* In the blood of these cases the *Plasmodium malariæ* was found before death, and in some cases, where no examination had been made before death, in the blood taken at the autopsy.

There is no doubt that the presence of the malarial hæmatozoon does not exclude the presence of yellow fever; still, these cases are rare.

In a series of questions sent to thirty-five physicians in Havana and other parts of Cuba the following question was asked: What would be the post-mortem appearances of a patient having died of yellow fever with accompanying acute malarial infection? Of the thirty-five physicians, twenty answered that the body would exhibit the lesions of both diseases; the other fifteen answered that they had never met with such cases. Dr. Laine, in the *Medical News* of July 1, 1899, says that during the late war in Cuba it was not unusual to meet with soldiers suffering with yellow fever who came from the interior of the island suffering from acute malaria. In those *rare* cases in which a careful study of the disease was made, frequently both infections could be traced without one being able to positively state the distinctive features of either.

As to cultures obtained from living blood during the prevalence of the fever in 1898, I obtained pure cultures of the *Bacillus icteroides* in nineteen cases out of twenty-three. The method I used was to puncture the lobule of the ear, after thorough cleaning of the parts, with a sterile lancet and allow from fifteen to twenty drops of blood to flow into a small tube containing sterilized bouillon and plating from these in twenty-four or forty-eight hours. The blood was taken on the third day of the disease. The same methods were used in 1899 and no *Bacillus icteroides* was found.

Autopsy No. 900.—Weights: Lungs: Right, twenty-three ounces; left, twenty-three ounces. Spleen, nine ounces. Pancreas, two ounces. Heart, fourteen ounces. Liver, eighty-four ounces. Kidneys: Right, six ounces and a quarter; left, six ounces and a half. Body of W., man, slightly jaundiced, especially about face and neck; conjunctiva yellow, pupils slightly contracted; post-mortem rigidity marked. Heart normal. Lungs œdematous. Spleen soft, muddy, enlarged, and intensely congested. Liver: Fatty degeneration marked. Gall bladder full. Pancreas normal. Kidneys congested, granular, slight fatty degeneration. Diagnosis: Acute pernicious malaria, acute uræmia.

Autopsy No. 902.—Weights: Lungs: Right, twenty-five ounces; left, ten ounces. Spleen, seven ounces. Pancreas, two ounces. Heart, eight ounces and a half. Liver, three pounds eight ounces. Kidneys: Right, six ounces; left, five ounces and a half. Body of colored woman, emaciated, conjunctiva brownish yellow, pupils contracted; post-mortem rigidity marked. Heart normal in size; atheroma of aorta and valves; fatty degeneration of muscle. Lungs: Left, firmly bound down; right, acute pleuro-pneumonia; lower lobe, third stage; middle lobe, second stage. Spleen slightly enlarged, soft, of a pinkish color, trabeculæ well marked. Liver congested, yellowish-red in color, and fatty. Gall bladder full. Pancreas normal. Kidneys very soft, congested, fatty, cortical substance very much diminished, surface granular. Diagnosis: Acute pleuro-pneumonia; chronic interstitial nephritis.

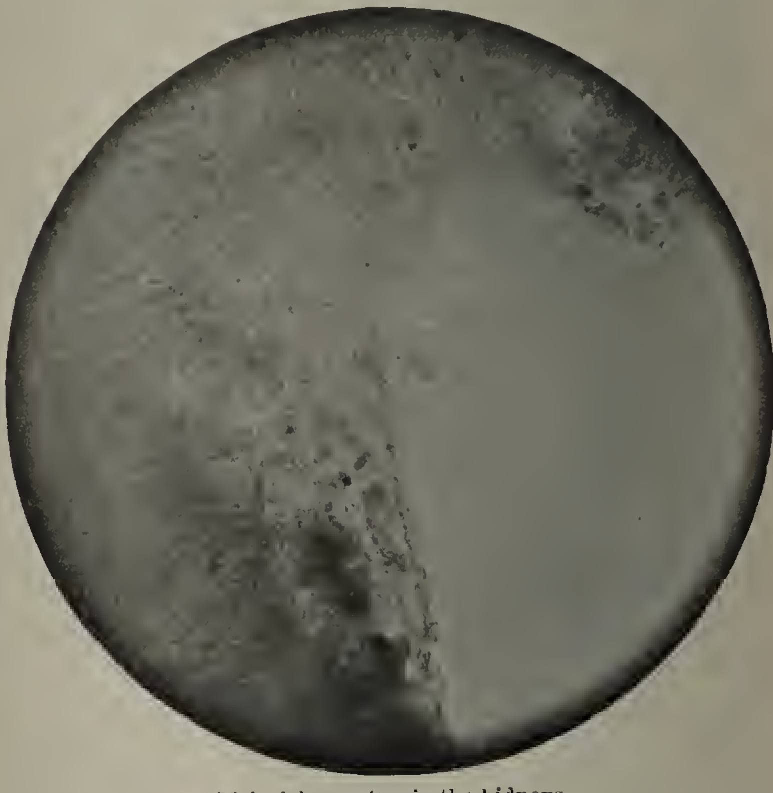
The following case of acute malarial infection is interesting:

The patient, W. H. H., white, man, aged thirty-one years; native of Massachusetts; married; in the city for two months; occupation, clerk; was admitted to Charity Hospital on October 4, 1899. Died on October 8, 1899.

On entrance, condition quite good; complains of being weak and exhausted. Blood examinations show malarial parasites. Temperature on first day, 101° F.; never went higher. Temperature for twenty-four hours before death subnormal. Pulse feeble and rapid. Urine shows granular casts, mucous casts, uric acid, bacteria, bladder epithelium, leucocytes; specific gravity, 1.013.

In spite of very active antimalarial treatment this patient died on October 8, 1899.

The findings of the pathological department and a photomicrograph showing malarial parasites in kidneys are appended. There were also found malarial parasites in the brain and other organs. I am indebted for data to Dr. Batchelor, assistant house surgeon, Charity Hospital; Dr. O. Lerch, physician to ward; Mr. Kemp, student of hospital and ward; also to Dr. O. L. Pothier, pathologist of hospital, for record of autopsy and photomicrograph. I include this case simply to show how profound the malarial infection was this year (1899).



Malarial parasites in the kidneys.

Autopsy No. 892 of W. H. H.—Weights: Lungs: right, twenty-three ounces; left, sixteen ounces. Spleen, sixteen ounces. Pancreas, two ounces. Brain, fifty ounces. Heart, eight ounces. Liver, fifty-six ounces. Kidneys: right, six ounces; left, six ounces. Body of white man. Conjunctiva pale and slightly jaundiced; pupils slightly dilated; post-mortem rigidity slight. Heart flabby. Lungs normal. Spleen large, muddy, soft. Liver slightly congested. Gall bladder full. Pancreas normal. Kidneys: left, pus in pelvis; right, congested. Brain, etc.; excess of cerebro-spinal fluid, congested at base; acute leptomeningitis. Diagnosis: Acute pernicious malaria (congestive).

It was from this case that photomicrographs of *Hæmatozoon malariæ* in kidneys were taken.

ARGUMENT.—William Osler (*Medical News*, March 6, 1897) says that "north of Mason and Dixon's line physicians are prone to diagnose malaria for other diseases; south of the line they are more prone to diagnose other diseases for malaria; in both cases it is a source of greater error in vital statistics than any other affection."

Dr. J. C. Faget, one of the greatest authorities on pulse and temperature in yellow fever, says that one of the greatest difficulties was to always know that you were truly examining and investigating yellow fever, and not "paludal" fever, as he called malaria. He cites in his monograph on *Pulse in Yellow Fever* epidemics of malaria that have been mistaken for yellow fever. How well he fought for the correct diagnosis of yellow fever and malaria is known to such men as my esteemed friends, Dr. J. J. Castellanos, Dr. J. Touarte, Dr. S. E. Chaillé, Dr. E. S. Lewis, and others.

As Dr. Castellanos remarked to me, these investigations "clear many mysteries of the past," and he also spoke of Dr. J. C. Faget—how pleased Dr. Faget would be, if he were alive to-day, to have proof that he was right. I can now see him (Dr. J. C. Faget), the old gentleman and true physician that he was, in all his dignified yet kindly manner, explaining in 1873 or 1874 to his son (Dr. C. Faget) and to me how to distinguish the two diseases. How emphatically, how clearly he separated them; yet he had not the means of investigating that we now have; he was truly a man of genius. His works and the lessons he taught made the most profound impression on me. His works on pulse and temperature in yellow fever stand a monument to his memory—for years they were practically about the only really definite guide to diagnosis in these diseases. Even these, valuable as they are, must be reenforced by more definite data.

My readers will excuse this digression. It is but a small personal tribute to the memory of a great physician.

My paper does not include all forms of malaria, as a gentleman who accuses me of trying to call yellow fever by another name seems to think. The name "æstivo-autumnal" fever was not coined by me or its coiner (whoever he may have been) to hide under its cloak yellow fever. It is a name known all over the world from time almost immemorial, and is especially applicable to the irregular and pernicious forms of malaria, for at least it describes one of its peculiarities. In fact, I am trying to hide nothing, and am simply giving a certain form of malarial fever its name, insisting on reliable methods of diagnosis, and making it possible to combat either disease. I do not question the diagnosis of physicians on cases I did not see, but will say this, that the natural conclusion would be, if a large number (more than one hundred) of cases were carefully examined and all without one exception proved by all the means known to science to be malarial, the inference would be that other cases presenting the same gross symptoms, not so investigated, were of the same type of fever—that is, malarial.

The argument was brought forward that many of these cases this year got well without specific treatment with quinine, therefore they could not be malarial. The gentlemen evidently have forgotten that Nature has most wonderful curative powers of her own; some can be seen going on under the microscope—the destruction of parasites in the blood by phagocytosis—and also the more complex and least understood antitoxines (and toxines to germs) of our blood serum and other constituents of the blood. The action of the bone marrow, the spleen, and of other organs is little known. If it were not for spontaneous cures, where would the human race be to-day? I suppose, extinct—because the properties of Peruvian bark, or cinchona, were not known to the white man until introduced by the Jesuits about 1640, when the wife of Del Chinchon, the governor of Peru, was cured of malarial fever by it; hence the name. She being an illustrious personage, it attracted more attention than otherwise. For spontaneous cures, see George M. Sternberg, *Malaria and Malarial Diseases*, pages 321 and 322.

Thayer says, in *Lectures on Malarial Fever*, page 271: "Not infrequently the symptoms, as well as the parasites, disappear of themselves after a few days' rest in bed, even without specific treatment."

W. Gilman Thompson, in his article on Malarial Fever in Pepper's *System of Medicine*, page 418, says "cases recover without treatment."

My own experience and that of many others most certainly agrees with them.

It is stated that the two diseases—yellow fever and malaria—can exist in the body at the same time. I admit this to be possible, but it is very rare indeed. Sir John Hunter was wrong, I know, but not entirely so; there is an element of truth in his observations.

Professor S. M. Bemiss taught us that the two diseases often preceded or followed one another, but seldom if ever were active at the same time in the same individual.

Professor Joseph Jones, M. D., who investigated malarial fever and yellow fever as few men ever did, was of a similar opinion. In 1897 the reports of the cases in the New Orleans Yellow Fever Isolation Hospital (all of which cases I saw and treated with Dr. H. P. Jones) show a hundred and fifty-four blood examinations; malarial parasites were found in only sixteen cases—about ten per cent. (See resident physician H. P. Jones's report, 1897.)

This year note the difference: the malarial parasites were found in one hundred per cent. of cases examined. Some might object that everybody had malarial parasites in his blood this year in this city. Not to be accused of superficial investigations, we examined people walking about and to all appearances healthy, to the extent of a hundred and thirteen persons, and in eleven we found the malarial parasites. Further investigation developed the fact that six of the eleven had been sick, and the remaining five became sick afterward with fever. If we take this percentage of 9.73 with malarial parasites in healthy people, and compare it with the one hundred per cent. positive result of malarial parasites in people suffering from the prevailing disease, what conclusion can we arrive at other than that this prevailing disease is nothing but malaria?

I would call attention also to the fact that the percentage of malarial parasites (9.73) found in supposedly healthy persons this autumn tallies very closely with the percentage of cases showing malarial parasites in the blood at Isolation Hospital in the fall of 1897—a fraction over ten per cent.

The failure to find the bacillus of yellow fever in any case, coupled with the finding of the malarial parasite in every case, is, I think, conclusive of malarial infection. The *Bacillus icteroides* (yellow fever) was, in 1897 at the Yellow-Fever Isolation Hospital, cultivated from the bodies infected with yellow fever in sixty per cent. of autopsies, about the percentage of cases that Sanarelli succeeded in cultivating them in. The *Bacillus icteroides* was cultivated from living blood in ninety per cent. of cases in 1898. I know of no instance as yet where the *Bacillus icteroides* has been found in the bodies, dead or alive, of those afflicted with the prevailing fever this year (1899); that is, no true cultures have been developed, although repeated trials were made by different bacteriologists. The organs in those who died in the Charity Hospital were actually packed with and the circulation obstructed by immense numbers of malarial parasites, the greatest number being in the organ that gave the most prominent symptoms during life; the autopsies were characteristic of malaria and not of yellow fever. A striking instance of the intensity of infection this year (1899) of malaria is well shown in an autopsy I saw at Charity Hospital on a woman seven months pregnant; the malarial parasites were found not only in her blood and organs, but also in the blood of the heart and spleen of the fœtus. (Dr. O. L. Pothier was the first, I believe, to find the parasite in the fœtus.)

I have been told that even outside cases, in which the diagnosis of yellow fever was made and autopsies held, were not distinctly characteristic of yellow fever. The mortality in the cases treated and diagnosticated as malarial was about two per cent.—too low for yellow fever. The mortality in those diagnosticated as yellow fever was twenty-eight per cent.—too high for yellow fever. It might be said that these were bad cases, but they could be no worse than the cases at Isolation Hospital in 1897—the worst of the worst cases. They were bad enough, yet our mortality was only a little over twenty-two per cent. for yellow-fever cases. That would be a fearful mortality in private practice, even if it were yellow fever of the worst type.

In 1878 the city's mortality was about sixteen per cent. of cases reported (Professor S. M. Bemiss). The fever this year (1899) occurred, or rather began, among our own residents, persons born here, among whom were found most of the cases. A notable fact is that no Italians, and only five foreigners, were recorded as dying of yellow fever this year. Italians are particularly susceptible to yellow fever, and are in a manner immune to malarial disease, as for generations they have been exposed to its influence in Italy, as it is endemic to that country. We have all heard of the Roman fever.

This year the fever did not prevail, or start, near the wharves or shipping, as is usual with yellow fever, but occurred in the suburbs. There was very little in the older and crowded portions of the city. It did not show the steady march of yellow fever, but cropped up here and there, especially where drainage was imperfect, and it remained confined to those localities.

Yellow fever always starts from imported cases, and advances with almost mathematical precision, house by house, street by street.

A few days ago, Dr. W. S. Thayer, of Baltimore, who was here on a short scientific trip, spoke of the peculiarity of malarial disease localizing itself in a neighborhood, and how persistent it was. This fever this year localizes itself in a neighborhood and stays there.

I should like it understood that what I have written is with malice to no one, but with the very best and kindest intentions to all; I believe that those who differ with me are conscientious and have a right to their opinions, and I claim the same. I apologize to my readers for so disjointed an article, but hope in the future to write a more connected and creditable dissertation on this subject. This article is simply to emphasize the fact that by clinical evidence alone we can not in many cases distinguish malarial and other pathological conditions from yellow fever * without the aid of most searching microscopical and bacteriological aid. I think we are near positive methods; in fact, have reached them.

We simply antedate one of the conclusions of the United States Marine-Hospital Yellow-Fever Commission a few days in this, that a "positive diagnosis can not be made" in many cases unless we resort to the methods above mentioned.†

I am pleased to know that we have come to the same conclusion as they have, though none of us knew of the other's work in the matter, for I received their report a few days after my paper was read before the Orleans Parish Medical Association, October 28, 1899.

In conclusion, I would gratefully thank my collaborators, Dr. J. D. Bloom, house surgeon, Charity Hospital, New Orleans; Dr. O. L. Pothier, pathologist and bacteriologist of Charity Hospital, and his assistants, Dr. S. F. Mioton and Dr. M. Couret; and also Dr. G. S. Bel, visiting physician to the Charity Hospital, for their energetic and careful work and assistance in these investigations and in the preparation of this article.

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* *United States Marine-Hospital Report*, 1898, pp. 437, 438.

† See p. 58 of the report, just published, of Dr. Wasdin and Dr. Geddings, surgeons, United States Marine-Hospital Service.

ABSTRACT OF

THE PRESIDENT'S ADDRESS.*

DELIVERED AT THE FIFTY-FIRST ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT ATLANTIC CITY, N. J., JUNE 5-8, 1900.

By W. W. KEEN, M. D., LL. D.,
PHILADELPHIA.

Two duties seem to me to devolve on the president of the American Medical Association in his annual address: First, to consider the condition of the association, with any suggestions that may be made for improvement, and second, to take up some subject of professional interest which may be properly considered before the chief representative medical body of the United States.

[After urging upon the profession the duty of enlarging the membership of the association, deservedly praising the association's *Journal* and its editor, and recommending more energy in completing the Rush Monument Fund, Dr. Keen turned his attention to the Gallinger antivivisection bill, describing its initiation, and the measures taken by him as president of the American Medical Association to arouse public sentiment against the obnoxious measure. He expressed great satisfaction at the widespread response with which these efforts had met and continued:]

In response to a communication addressed to the chairman of the Senate Committee on the District of Columbia, a hearing was granted in Washington before the subcommittee having charge of the bill, at which both the friends and the opponents of the measure were present and presented their arguments. Among those who spoke against the bill were Dr. William H. Welch,[†] Dr. Henry P. Bowditch, Dr. H. A. Hare, Dr. William Osler, Dr. Mary Putnam Jacobi, Dr. George M. Kober, Dr. Howard A. Kelly, Dr. D. E. Salmon, Brigadier-General George M. Sternberg, Surgeon-General, U. S. A., Bishop Lawrence, of Massachusetts, and myself. Certainly a more able array of speakers could hardly have been obtained, and I wish in your name, and in the name of humanity, to thank them for their self-sacrificing help.

Although in two prior Congresses the Committee on the District of Columbia had unanimously reported in favor of the bill, I am happy to say to you that the present committee has so far changed its views that I have reason to believe that the bill will either slumber in committee or be reported negatively. While it is to be hoped that this is the end of the present bill, it is by no means certain that it is the end of the agitation of those who are so blind to the progress of medicine, and therefore to the dictates of humanity; and I have no doubt that the effort will be renewed at some future time. If this should take place, I commend to the then president of the American Medical Association the duty of opposing the bill with all the vigor which he can use.

Among the important contributions to antivivisection literature evoked by this discussion, none is more valuable than the letter addressed to the chairman of the Committee on the District of Columbia, in opposition to the bill, by President Eliot, of Harvard College, which I venture to read to you:

"HARVARD UNIVERSITY, CAMBRIDGE, *March 19, 1900.*

"DEAR SIR: I observe that a new bill on the subject of vivisection has been introduced into the Senate, bill No. 34. This bill is a slight improvement on its predecessor, but is still very objectionable. I beg leave to state very briefly the objection to all such legislation.

"1. To interfere with or retard the progress of medical discovery is an inhuman thing. Within fifteen years medical research has made rapid progress, almost exclusively through the use of the lower animals, and what such research has done for the diagnosis and treatment of diphtheria it can probably do in time for tuberculosis, erysipelas, cerebro-spinal meningitis, and cancer, to name only four horrible scourges of mankind which are known to be of germ origin.

"2. The human race makes use of animals without the smallest compunction as articles of food and as laborers. It kills them, confines them, gelds them, and interferes in all manner of ways with their natural lives. The liberty we take with the animal creation in using utterly insignificant numbers of them for scientific researches is infinitesimal compared with the other liberties we take with animals, and it is that use of animals from which the human race has most to hope.

"3. The few medical investigators can not properly be supervised or inspected or controlled by any of the ordinary processes of government supervision. Neither can they properly be licensed, because there is no competent supervising or licensing body. The government may properly license a plumber, because it can provide the proper examination boards for plumbers; it can properly license young men to practise medicine, because it can provide the proper examination for that profession, and these boards can testify to the fitness of candidates, but the government can not provide any board of officials competent to testify to the fitness of the medical investigator.

"4. The advocates of antivivisection laws consider themselves more humane and merciful than the opponents of such laws. To my thinking these unthinking advocates are really cruel to their own race. How many cats or guinea-pigs would you or I sacrifice to save the life of our child or to win a chance of saving the life of our child? The diphtheria antitoxine has already saved the lives of many thousands of human beings, yet it is produced through a moderate amount of inconvenience and suffering inflicted on horses and through the sacrifice of a moderate number of guinea-pigs. Who are the merciful people—the few physicians who superintend the making of the antitoxine and make sure of its quality or the people who cry out against the infliction of any suffering on animals on behalf of mankind?

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* By the courtesy of the editor of the *Journal of the American Medical Association.*

[†] *The Journal*, May 19 and 26.

"It is, of course, possible to legislate against an improper use of vivisection. For instance, it should not be allowed in secondary schools or before college classes for purposes of demonstration only; but any attempt to interfere with the necessary processes of medical investigation is, in my judgment, in the highest degree inexpedient, and is fundamentally inhuman.

"Very truly yours, C. W. ELIOT.

"Hon. JAMES McMILLAN."

Coming from such a high source, I can not but feel that it will carry conviction, both by the force of its statements and the lucidity of its logic. I call your especial attention to the ground taken by President Eliot, that it is the antivivisectionists who are inhumane and cruel to the last degree, because they would condemn both man and animals to suffering and death by impeding the progress of medical science.

Members of the American Medical Association.—By its constitution the members of the association consist: First, of delegates; second, of members by invitation; third, of permanent members; and fourth, of members by application. I wish to call your attention to the desirability of limiting the members by invitation to foreign delegates, eminent foreigners whom the sections may desire to invite to read papers and take part in the discussion; to members of the medical staff of the United States Army, Navy, and Marine-Hospital Service, and to the occasional visiting physicians from our possessions outside of the limits of the United States proper. It has been the custom in most of the sections to invite medical men of distinction who are not members of the association to read papers before the sections. Some of these gentlemen have been even openly hostile to the association, and yet year after year have had the courtesies of the association extended to them. They have availed themselves of these privileges and advantages and yet not only privately, but sometimes publicly, have expressed their hostility to the association.

It seems to me that the time has now come when this practice should cease. Membership in the association is open to every American, and any one who does not choose to avail himself of the privileges and advantages of membership by joining the association should be debarred from them.

During the present year I have sent a courteous circular letter to each person so invited by the various sections, but not a member of the association, inclosing a form of application and inviting him to become a member of the association. I am glad to say that a very large number have availed themselves of the opportunity of doing so. The constitution prescribes that the members by invitation shall be invited by "the meeting after an introduction from and being vouched for by at least three of the members present or three of the absent permanent members"; and in the order of business, the third order is the "reception of members by invitation." No such formality, it seems to me, is desirable. The extending of such an invitation to distinguished foreigners and others that I have suggested may well be left in the hands of the sections, with the exception, it might be, occasionally of persons of unusual distinction.

[Dr. Keen next considered the need of a Section on Pathology and Bacteriology, which, though not authorized by the association, he had caused to be provisionally and unofficially established under the chairmanship of Dr. Ludvig Hektoen. He referred to the annual exhibit and the sections, and in the latter connection suggested that as papers presented varied considerably in merit, it would be well to intrust to the trustees and the editor of the *Journal* the entire responsibility of selecting the more important papers for publication in full, and of presenting the less important in longer or shorter aspects. Referring to the American committee on the coming International Congress, Dr. Keen expressed his satisfaction with its work, and recommended an appropriation of fifty dollars from the funds of the association toward the expenses of the committee.]

Endowment of Medical Schools.—Turning, now, from the affairs of the association, I wish to say a few words in reference to a subject of paramount importance which I am sure will appeal to the sympathies of all present—namely, the need for endowments for medical schools.

The tide of charity in the United States has reached a remarkable height. The *Chicago Tribune* publishes an annual list showing that in 1894 the charitable gifts and bequests in the United States amounted in round numbers to $20,000,000; in 1895, to $29,000,000; in 1896, to $34,000,000; in 1897, to $34,000,000; in 1898, to $24,000,000; and in 1899, to the enormous sum of nearly $80,000,000.

But a small portion of this charity, however, has been bestowed upon medical schools. It is mostly to colleges, theological schools, hospitals, museums, and libraries that the principal amount has been given. The cause for this, I think, has been chiefly the vicious method in which all our medical schools were formerly conducted. They were practically joint-stock companies, organized for the benefit of the faculties. As Professor Bowditch has said, one might as well expect the public to endow a cotton mill as to endow such a school. The day of these private enterprises is now, happily, nearly past. The respectable schools of medicine are now conducted by trustees, a body of men wholly apart from the faculties, who manage the affairs of the medical school just as they would those of a university, taking control of the income and expenditures of the school, placing the professors and other teachers upon salaries, and conducting the affairs of the institution on broad lines of educational progress. Partly as a result of the influence of the profession exerted through the association, the courses of study at the medical schools of to-day, and, therefore, the necessities of the student, are so wholly different from those of twenty-five years ago that it may be well termed a new era in medical education. As a consequence of the broadening and lengthening of the medical course of study, the cost of medical education has enormously increased. The public at large does not at all appreciate this changed condition, and even you, members of the profession itself who may have graduated many years since, scarcely appreciate to its full value the difference. As a consequence, the fees of the students, which can scarcely be raised beyond the present amount, are wholly inadequate for providing a proper medical education, and the medical school appeals, as does the college and the theological and the technical school, for wise and liberal endowments in order to provide this suitable education. "There is no branch of education," says President Eliot, of Harvard, "which more needs endowment. Medical education is very expensive, because it has become, in the main, individual instruction. Large lectures and crowded clinics are seen to be of really very limited application, so that year by year the medical teaching becomes more and more costly."

What were the necessities of a medical school twenty-five years ago? Two lecture rooms, in which seven professors talked, a dissecting room, and, if possible, a clinic, which was occasionally, but rarely, in a college hospital. Practically the instruction which the student obtained, with the exception of dissecting, was limited to "book knowledge" and "ear knowledge." The student was not brought into contact with any patients or any concrete facts, observations, or experiments. He only listened to what his teachers said about them. Millions were given to hospitals in which the sick were treated, but only sixpences to medical schools, in which the men who are to care for their future patients were trained. "Spain," says Lyman Abbott, "in the late war had nineteenth-century guns and sixteenth-century men behind them. We know what came." Our splendidly equipped hospitals are the nineteenth-century guns. Insufficiently trained doctors are the sixteenth-century men. The time has certainly come when the "men behind the guns" must equal in efficiency the weapons with which they do the fighting.

To perform a tracheotomy and rescue a child suffering from diphtheria is a dramatic occurrence which appeals to every one. To conduct a long series of experiments in the laboratory, by means of which the cause of diphtheria shall be found and the necessity for a tracheotomy avoided, appeals only to the educated few; yet the service done by the operation is a service only to the one patient who may be rescued by the knife, while the other is a service to hundreds and thousands of patients who, for all time, will escape both the knife and the disease. Yet, such a series of experiments in preventive medicine brings no reward in money, a limited reward in fame, and only its largest reward in the consciousness of giving a great boon to humanity, for which it never can pay.

The era of the man who simply listened to what his teachers had to tell him and then went on his way, as a "rule-of-thumb" man, is happily past. This is the era of the trained man and the trained woman, and training means opportunity provided by the community, and time, labor, and money given by the man.

Let us look for a moment at what a medical school now needs. It stands for two things: 1. "Thing knowledge," instead of "book knowledge," and "ear knowledge," teaching the facts of modern science by scientific methods; that is to say, methods of precision. But, 2, no medical school should be content simply with imparting the knowledge that exists. It should push back the boundaries of ignorance and, by research, add to existing knowledge.

In the accomplishment of the first duty of the medical school, there are required, first, didactic lectures. I am not one of those who believe that the day of the didactic lectures is past. "Never," said President Faunce, of Brown University, in his notable inaugural, "never shall we be able to do without the personality of the teacher, flaming with enthusiasm for knowledge, pressing up the heights himself and helping the student on."

In the one hundred and fifty-six medical schools in this country there are, perhaps, over fifteen hundred members in their faculties. In all of them are inspiring teachers flaming with enthusiasm, for a not inconsiderable proportion may properly be so described, and the influence of such enthusiastic teachers is felt by the entire class. One or two such men in every school make a good faculty.

Besides the didactic lectures, a good working library and a reading or study room is a requisite. And it is a matter of no little encouragement that in the reports of the United States Commissioner of Education for 1898, 72 medical schools reported 151,433 volumes in their libraries.

The great difference between the modern method of teaching medicine and the older method consists in *laboratory instruction and clinical instruction*, both of which must be individual. Laboratories are very costly. They require buildings, equipment, and assistants. The number of laboratories required in the present day in a fully equipped medical school is astonishing. First, the dissecting room—the anatomical laboratory—and along with this a laboratory of histology, and another which may be combined with it, a laboratory of embryology. Next, a physiological laboratory, in which each student will not become an accomplished physiologist, but will become familiar with physiological methods and be trained in exact and careful observation; a laboratory of chemistry and, combined with it, especially, a laboratory of physiological chemistry; in the department of materia medica, a laboratory of pharmacy, where the student will not become a good pharmacist, but will learn the essentials of pharmacy so that he will not make, at least, gross mistakes, which otherwise would constantly occur. Still more important is a laboratory of pharmacology, in which he will learn the action of drugs and be prepared rightly to use them. In obstetrics, a laboratory of practical obstetrics and obstetric operations is essential. In surgery, he needs a laboratory in which he shall be taught all the ordinary surgical operations. In pathology, he needs a laboratory of morbid anatomy, a laboratory of bacteriology, and a laboratory of hygiene. The mere statement of this catalogue of thirteen laboratories will enforce the fact that an enormous expense, not only for the installation but also for the running expenses, will be required. To show what one university abroad does, Professor Welch has stated that the Prussian government expends, outside of the salaries of professors in the University of Berlin alone, over fifty thousand dollars annually. What American medical school can show anything approaching an endowment which will provide such a sum?

And what has not the laboratory done for us within the last few years! It has discovered the cause of tuberculosis, tetanus, suppuration, cholera, diphtheria, bubonic plague, typhoid fever, erysipelas, pneumonia, glanders, and a host of other diseases; it has shown us how to avoid all danger from trichina, so that our entire commerce in hog products is conditioned upon the laboratory; it has shown us how to banish suppuration, erysipelas, tetanus, and pyæmia from our hospitals and reduce our death-rates after operation from fifty or thirty-three per cent. to ten per cent., five per cent., one per cent., and often even fractions of one per cent.; it has given us a really scientific hygiene in which we no longer guess but know; it has shown us the rôle of the mosquito in malaria, of the rat in bubonic plague, of the fly in typhoid fever; it has given us the power to say to diphtheria, "Thus far shalt thou go and no farther" ; it will give us the power to utter a pæan of victory over typhoid, cholera, bubonic plague, tuberculosis, yellow fever, cancer, and other such implacable enemies of the human race—and yet there are those who would stay this God-given hand of help!

And the laboratory has had not only its devotees but its heroes. Listen to the story of but one. Dr. Franz Müller, of Vienna, was one of those who in his investigations of the bubonic plague in 1897 contracted the dreaded disease from the bacilli in his culture tubes. When he became certain that he was infected he immediately locked himself in an isolated room and posted a message on the window pane, reading thus: "I am suffering from plague. Please do not send a doctor to me, as, in any event, my end will come in four or five days." A number of his associates were anxious to attend him, but he refused to admit them, and died alone, within the time he predicted. He wrote a farewell letter to his parents, placed it against the window, so it could be copied from the outside, and then burned the original with his own hands, fearful lest it might be preserved and carry the mysterious germ. Can you find me a finer example of self-sacrificing altruism? Was ever a Victoria Cross more bravely won?

But the establishment of laboratories, with their attendant expenses, is not the only improvement in our medical curriculum. Every well-conducted medical school requires a large hospital in connection with it. Here must be installed again a fourteenth laboratory of clinical medicine in which all the excretions of the body will be examined, tumors studied, cultures and blood counts made, or else the patients in the hospital, from the modern point of view, are neglected. It is not too much to say that a patient requiring such examinations, be he the poorest of the poor, has his case more scientifically studied, more exactly measured, more precisely treated than most rich patients in sumptuous homes.

Again, the individual instruction to which President Eliot referred is now carried out in all of our best medical school hospitals by the establishment of small ward classes, by whom or before whom the patients are examined, prescribed for, and operated upon by the professor or instructor, each student bearing a part; and so, by having his investigations directed, his powers of observation cultivated, his mistakes pointed out, his merits applauded, the student graduates from the medical school equipped as none of us, alas! ever had the opportunity to be. All of these laboratory and ward classes imply an enormous increase in the number of assistants, young men striving not only to perfect themselves, but, by teaching, to forge to the front so that the best men will win in the struggle for preferment.

Again, the course of study has been prolonged from two years, as it was twenty to twenty-five years ago, to four years, and in addition the terms have also been lengthened. When I was a student the course of study consisted of two sessions of about nineteen weeks each, or thirty-eight weeks in all. Now the course consists, as a rule, of four sessions of thirty-two weeks each, or a total of a hundred and twenty-eight weeks, an increase of ninety weeks, nearly three and a half times as much as it was twenty-five years ago. In 1885, a hundred and three schools had courses of two years, and five schools courses of three years. In 1899, two schools had courses of two years, ten of three years, and a hundred and forty-one of four years.*

It can be easily seen that from this additional time required another source of expense has arisen besides the increased number of assistants. The time given to teaching by members of the faculty, as a rule, has been more than tripled, as compared with twenty-five years ago. In addition to this, professors in charge of laboratories must practically give their whole time to the work and are precluded, therefore, from any income from practice. These men must receive salaries sufficient for them to live on.

Surely this statement of the difference between the education given twenty-five years ago, which required but little expenditure of money and resulted in considerable incomes, and the modern methods of education in the laboratory and the hospital, as well as the lecture room, which require enormous expenses, is an ample reason for large endowments.

But the function of the medical school, as I have said, should not be limited merely to the imparting of existing knowledge. No school is worthy of the name that does not provide for greater or less research work by which substantial additions to our knowledge may be made and the facilities and the results of the healing art made more efficient for the welfare of mankind. Twenty-five years ago there were practically few young men who were fitted for research work, especially laboratory work. Now every well-equipped school has attached to it, in one way or another, a score or more of young men who are eager for work, longing for the opportunities for usefulness and distinction if they can only obtain a bare living. When in my own school I look around me and see these young men thirsting for such opportunities, I am often heartsick at our want of facilities for this purpose, and I long with an intense longing for some wise and munificent friend of humanity who will endow post-graduate scholarships, fellowships, and laboratories for just such an end. Our hospitals do a magnificent work in charity, helping the sick and the forlorn, the weak and the suffering in a way which appeals to the charitable instincts of our fellow countrymen, and to this appeal they have responded most generously. *But I venture to say that the medical school which trained a Lister, a Pasteur, or a Koch has done more for humanity than all the hospitals of this country combined.* The modest laboratory at Würtzburg consisted chiefly of a Ruhmkorff coil and a Crookes's tube—and Röntgen. Other Röntgens and Listers we have among us if we but knew it. These are the men who are the world's real illustrious heroes.

It is especially in these days that in America we need such researches, for our tropical possessions have brought us face to face with new problems which we can only justly meet by the most careful investigations. It is to our credit that several of our medical colleges have already established schools of tropical medicine, which show that the profession, as well as the public, are rising to the level of our responsibilities and duties.

It is also a cheerful sign of the times that at Harvard a School of Comparative Medicine has been established, which will lead to other similar schools in connection with our medical colleges, for the broad study of disease both in man and in the lower animals. All such knowledge should be correlated, and we may well learn from the diseases of animals how to care for man, as thus far we have learned chiefly from the diseases of man how to care for animals. The endowment of this school with the modest sum of $100,000 is an omen of future good. So, too, the somewhat similar school at Buffalo bids fair to add immensely to our knowledge and therefore to our ability to heal.

What now has the American public done for the medical school? Let us contrast it with the endowments in theology. Our academic institutions have such an enormous sum total of endowments that I do not even consider these. Let us, however, compare theology and medicine, remembering that theology is almost wholly a literary study, dealing not with the facts of Nature, requiring no laboratories and no large corps of assistants, and therefore conducted at a minimum of cost. In 1898 * 84 theological schools reported endowments of $18,000,000, and 71 schools do not report this item; 19 out of 151 medical schools report endowments of $1,906,072. Five theological schools have endowments of from $850,000 to $1,369,000 each. Yet in 1899 there were only 8,000 students of theology for whom this enormous endowment was provided, as against 24,000 students of medicine. Each theological student had the income of an endowment of $2,250 provided for his aid, each medical student the income from $83. As against 171 endowed chairs of theology there are only 5 in medicine.

I do not grudge a dollar to the theologian, but I plead for his medical brother, that with a vastly more expensive education he shall have a reasonable provision made for his training.

I have already indicated to some extent the direction which these endowments of medical schools should take. They may be classed in three categories: 1. The endowment of professorships. By doing this the salary of the professor would be made available for the other wants of the school. The endowment may well take the form of a memorial, either of the generous donor, or, still better, of some distinguished former occupant of such chair whose name would always add lustre to it. 2. The endowment of the laboratories, which, as I have indicated, are so costly, both in their installation and in their yearly expenses. 3. The endowment of post-graduate scholarships and research fellowships, these being intended especially for those who will devote their time to original research. Students can not take much time for original research; their regular studies will absorb all their energies. Research must be done chiefly by young graduates under the direction of stimulating and energetic members of the faculty.

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* Monographs on Education in the United States: No. 10, *Provisional Education*, p. 11. James Russell Parsons, Jr., Department of Education for the United States Commissioner to the Paris Exposition of 1900.

* *United States Education Report.*

It is not, I trust, too much to hope, if not now, that in the near future the American Medical Association will set a fruitful example by giving each year scientific grants in aid of research. The first object of the association must be, necessarily, to place itself on a strong financial basis. It should own its own building, its printing and publishing plant, and, as soon as possible, should have a reserve fund of considerable proportions. Nothing conduces to the stability and conservativeness of any institution like a good bank balance. The British Medical Association has to-day an excess of assets over liabilities of nearly $380,000, chiefly invested in its building at 429 Strand, London. The American Medical Association has made a fair start with a surplus of over $27,000 last January, and, with its large and, let us hope, rapidly increasing membership, it will before long assume a rank second only to the British Medical Association. Last year * the Scientific Grants Committee of the British association allotted £741, or somewhat more than $3,500, for research work, distributed to three research scholarships, the holders of which were paid $750 each a year, and thirty-three grants in aid of research work, varying in amounts from $25 to $100. Among those to whom grants were made occur the well-known names of Beevor, Vaughan Harley, Kanthack, Luff, Manson, Noel Payton, and Risien Russell. I should hope that the American Medical Association might even now begin by a modest appropriation, say of $500 a year, which should be allotted by the trustees, or by a special committee on scientific grants, after a careful investigation of the merits and the character of the person to whom such grants were made. No grant should exceed $100, or possibly even, at first, $50 in amount. The results of such grants would be not only absolute additions to our knowledge, but the cultivation of a scientific spirit which would permeate the whole profession and elevate its objects and aims.

In pleading for these endowments of medical schools, it is but a plea for a return to the profession of a tithe of what they have given. Two years ago I carefully investigated the value of the services rendered to the poor in the city of Philadelphia by the medical staff of the Jefferson Medical College Hospital alone, and I found that 129 medical men were then attached to the hospital, and their services, calculated on a moderate basis of ordinary fees, I valued at over $500,000 annually. To a profession which gives so freely of that which is most difficult to give, its own life blood, surely the public for its own protection may give reasonable endowments to its medical schools. It will be returned to the community tenfold in better educated, better trained, and more successful doctors. More devoted, self-sacrificing men and women they never can have.

THE TREATMENT OF THE OPIUM HABIT BY THE BROMIDE METHOD.*

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THE purpose of this communication is to offer a suggestion and furnish with it a very decided warning.

In the *British Medical Journal* of July 10, 1897, Dr. Neil Macleod, of Shanghai, reported seven cases which he had treated by what he called the "bromide sleep." The suggestion therein contained impressed me strongly at the time, and I made an abstract of it for the department of nervous diseases in the *Yearbook of Medicine and Surgery*, published by Saunders, of Philadelphia. On April 15, 1899, in the before-mentioned journal, Dr. Macleod made a further contribution, and a final one on January 20, 1900.

Briefly, the purpose of the bromide treatment is to stupefy the patient utterly for a number of days, during which time the opium is rapidly withdrawn, and the physical disturbance secondary to its withdrawal recovered from. The plan of treatment was hit upon by accident. Macleod states that early in 1897 a neurasthenic lady, who had been addicted to morphine for nine years, was given, accidentally, two ounces and a half of sodium bromide in something over two days. A profound sleep was induced, lasting several days, and when its effect wore off the craving for morphine had ceased, and with it the various disturbances which had led to its use. A few months afterward, a pilot who was addicted to morphine and alcohol agreed to try the effect of the treatment, and no suffering was experienced during the withdrawal of the morphine, the craving for which, as well as the alcoholic inclination, disappeared on recovery from the bromide sleep. The third case was one of acute mania. The fourth case was that of a Chinaman, who had been addicted to chloral for two years, and the result was perfect. In the fifth case the bromide sleep was used to check the uncontrollable vomiting of a neurasthenic woman, with alleged benefit. In the sixth case, a morphine and cocaine sufferer, was cured of the craving for both drugs. In the seventh case, a woman was relieved of a nine years' morphine habit without suffering. In the eighth case, a physician who had been addicted to morphine and cocaine succumbed on the seventh day to an attack of double pneumonia which had supervened. In the ninth case, a married woman who had for years been addicted to the morphine habit was successfully relieved. In the tenth case, one of acute delirious mania, the patient died, as Macleod believes, through sepsis arising from a purulent disorder in the mouth and throat.

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* *British Medical Journal*, 1899, vol. ii, p. 219.

* Read before the Illinois State Medical Society, May 15, 1900.

Macleod stated in his early communications that the use of the bromide in the manner he had outlined was practically without danger; that it could be carried out in a private house with the assistance of a trained nurse; that the intense suffering, vomiting, purging, sweating, sneezing, pains, and cravings for morphine, which mark the sudden withdrawal, could be entirely avoided, and that, best of all, after the treatment the craving for the drug was entirely abolished, so that the tendency to relapse, so unfortunately prominent in all other lines of treatment, was completely done away with.

I was led by these early representations to make an attempt upon this line of treatment, and submit two case histories.

Dr. X., forty-nine years old, recently married for the second time. Has had an extensive medical practice for many years. Acquired the opium habit seventeen years ago, using the hypodermic method. The practice has been discontinued twice since, once by his own efforts with an interval of a year, and once by treatment at Dwight, with an interval of about six months. On both occasions his suffering, craving, and discomfort were extreme, and are described in energetic terms.

Six months ago he was taking sixty grains of morphine, by the hypodermic method, daily, and had been able to get this down to ten grains at the time he applied for relief.

On December 4, 1899, he was admitted to St. Luke's Hospital, under my care, having agreed to take the bromide treatment, as outlined by Macleod. At this time he weighed one hundred and eighty-two pounds and a half, and appeared to be in fine physical condition. Blood and urine normal, and bodily organs apparently sound.

At 9.30 that night he received two grains of morphine hypodermically, his usual dose, and was ordered one hundred and twenty grains of bromide of sodium every two hours, with morphine as he might need it or request it.

December 5th.—The bromide was continued at the same dose and rate—practically one grain a minute. He had half a grain of morphine at 4 P. M. He had slept all through the night and was sleeping soundly most of the afternoon. About midnight a frequent cough developed.

The third day the bromide was administered every four hours and no morphine was given. A milk diet was used. During the early morning hours his respiration was slightly irregular, but he was sleeping quietly. The bowels were opened by enema. In the afternoon sneezing became troublesome and there was considerable perspiration. The pharynx also had a tendency to fill with mucus, with free expectoration. The patient had been sleeping the larger part of the time and was feeling perfectly comfortable. He had thus far taken nine hundred and ninety grains of bromide.

The fourth day the bromide was continued, two drachms every four hours until noon, when it was increased to every two hours, as the patient was restless, inclined to vomit, and to get out of bed, and he objected to management. The vomiting, indeed, was very free. It was noticed that the patient was weak and ataxic when he walked or attempted to walk, and his movements were uncertain. The pulse was decidedly slow, running down at 7 P. M. to 48; respiration, 28; temperature normal. A tenth of a grain of strychnine was given at ten in the morning. The bowels were opened by enema, and the strychnine was to be repeated as the pulse indications suggested. The bromide was continued every four hours until 9 A. M., the fifth day, when it was stopped, the patient having taken up to this time twenty-eight hundred and sixty grains, or six ounces lacking two grains. At this time he was restless and partly unconscious, with irregular respiration, sneezing, free expectoration, and looseness of the bowels. The pulse was down to 44 and weak; respiration running up to 40; temperature normal. A fifteenth of a grain of strychnine was given every two hours, under which the pulse improved by 4 P. M. to 64, and respiration subsided to 32. He was sleeping continuously, occasionally sneezing and coughing.

The sixth day the strychnine was continued and atropine was added to check the large amount of secretion in the nasopharynx. The bowels moved involuntarily; the breathing was somewhat difficult, as the mouth and throat were full of mucus, and required frequent sponging with antiseptic solutions. At 5 P. M. his pulse was 49, his respiration 36. The pulse was strong, however. Temperature normal. Under the strychnine, by evening his pulse had gone up to 72 and his respiration was 40. The breathing was labored, but the chest was clear. The patient was more or less comatose.

The seventh day the condition seemed alarming. At 9 A. M. his pulse was 86, his respiration 55. At 3 P. M. his pulse was 88, his respiration 76. At 4 P. M. his pulse was 90, his respiration 62. This day he was seen with me by Dr. Billings, who thought it improbable that he would recover. Oxygen was administered for five minutes every hour, and to the atropine and strychnine he was receiving an eighth of a grain of morphine was added, to assist his respiratory centre.

The eighth day the strychnine and morphine were continued as needed until 9 A. M., the pulse having averaged 80 and the respiration 50 during the night. The patient continued comatose, but he was breathing more quietly and presented a better color. Incontinence of urine was continued, and he was supported by enemata of milk, with normal salt solutions.

The ninth day he presented a slight elevation of temperature, 99.6° F., and was less comatose; he tried to get out of bed and sneezed a number of times; his mouth was very full of mucus. The pulse ranged from 72 to 90, respiration from 38 to 44. The sneezing and mucus were readily controlled by a hundredth of a grain of atropine given hypodermically; the strychnine injections with atropine were continued every two to four hours, as required.

The tenth day the patient was decidedly better; respiration, 30 to 40; pulse, 62 to 82, usually 70 to 75. He began to take milk by the mouth and slept quietly most of the time. When awake, he talked in a quiet but delirious manner. The urine on this day, as on nearly every day previously, was examined and found to be practically normal.

The eleventh day the strychnine alone was used. His temperature was normal, pulse 72 to 86, respiration 32 to 38. He had sneezed to some extent; the bowels moved freely; he slept most of the time, and when awake was inclined to talk constantly and at random.

The twelfth day his respiration fell below 30, his pulse was normal, he was taking nourishment freely, his bowels were acting readily, but he was still full of vagaries, and toward night he was quite delirious.

The thirteenth day his pulse, respiration, and temperature were normal. No medicine was given, except a little calomel toward evening, to act upon his bowels. A large quantity of nourishment was taken. There was some sneezing, and he was again quietly delirious toward midnight. The night was a restless one.

The fourteenth day he was rational at times, and when awake was inclined to be quiet. Sat up in bed most of the afternoon and passed a good night.

The fifteenth day he was given elixir of iron, quinine, and strychnine as a tonic, and passed a good day, gradually becoming more and more rational, but very forgetful from time to time and not sure of his whereabouts.

The sixteenth day he had had a good night. He was quite rational during the afternoon, with a tendency to talk at random toward night.

The seventeenth day he had passed a quiet night and was somewhat troubled with sneezing. Had solid food, which he enjoyed; stated that he never was able to eat beef when he was taking morphine, and the fact that he was now able to eat a beefsteak he considered as evidence that he was free of morphine. Talked rationally most of the time, and denied an inclination for morphine, for which he never made any request.

The eighteenth day he had passed a good night. Stools were normal in color; they had previously been slightly clay-colored on a milk diet. He ate solid food and was quite rational most of the time. The urine was normal and the blood showed 4,800,000 red cells, 7,200 white cells, and sixty-five per cent. hæmoglobin.

The nineteenth day he took a drive for an hour and a half and had a very comfortable time. Denied even the slightest craving for morphine. Smoked a cigar, and was rational the entire day.

The twentieth day the patient left the hospital for a visit with friends in the city.

He lost during the treatment eighteen pounds and a half in weight and looked a little pale, but said that he felt perfectly well, aside from a feeling of weakness.

The subsequent course of the case has left nothing to be desired. Sexual power, which had been absent for years, promptly returned, a feeling of strength, buoyancy, and mental capacity was immediately established, and he went back to his professional work, which he has carried on with satisfaction, and promptly picked up the weight that had been lost.

On February 20th he wrote: "I am perfectly well; am growing quite fleshy and can say positively that I have not suffered any from the time you started the treatment to the present time, a great contrast as compared with the horror and misery which I suffered before in attempts to break the habit." This convalescence has continued in May, 1900.

The following case, which I saw in consultation with a brother practitioner after the patient had been under treatment for a number of days, indicates very positively that the bromide treatment of morphine addiction is not without danger:

Owing to a misunderstanding of directions in this case, an extraordinary amount of bromide was given within the first few days, and while, so far as the morphine craving and the general condition of the patient was concerned, it gave rise to immediate decided benefit, an old nephritis developed into an acute one and the patient finally died of uræmia.

He was a physician, about forty years of age, who for several years had taken morphine, whisky, cocaine, and various other stimulants and sedatives, in combination or singly. He was laboring under unfortunate professional and social conditions, in part the result of his habits.

Treatment began March 13, 1900, at which time the urine showed a little albumin, but no casts. He also had an old antral abscess on the left side, which had been opened through the jaw, providing excellent drainage.

Beginning at noon, the patient had one hundred and twenty grains of bromide every hour until midnight, and then at intervals of every one to two hours for the second day, until 7 A. M. the third day. During the forty-three hours he received seven ounces and three drachms. As already indicated, the medicine was administered by a misunderstanding for a considerable period after it should have been discontinued. In addition, he had a little strychnine, a little digitalis, and, once, twenty grains of chloral. The pronounced tremor, restlessness, general apprehensiveness, and nervousness subsided altogether during this time, and he expressed himself as being better than he had been for a year.

Following the discontinuance of the drug, he slept most of the time, but could be awakened to take nourishment, and took water and fluids freely. The bowels moved actively under sulphate of magnesium. The temperature remained normal, the pulse averaged about 110, and the respiration once went up to 40.

On the fourth day the condition remained about as before, except that he was growing decidedly restless; he still took nourishment freely, and the strychnine was continued. At 8 P. M. he had a subnormal temperature of 97.4° F.; albumin was still shown by the urine.

On the fifth day he was extremely restless and delirious, the bowels moving somewhat frequently; there were coughing and sneezing. The temperature showed a subnormal tendency. Granular casts appeared in the urine in addition to the albumin. The antrum was washed out repeatedly.

On the sixth day he was more or less comatose, and toward evening the temperature began to rise, reaching 102° F. at 8 P. M. Small doses of morphine, an eighth of a grain, with atropine and strychnine, were given at four-hour intervals, and oxygen was administered on account of the slight tendency to cyanosis. His respiration in the evening had reached 50 a minute, the pulse being 112.

On the seventh day the temperature steadily rose, being 104° F. at 9 A. M., 105° F. at 10 P. M., and 106° F. at midnight. Oxygen was given every hour for ten minutes, and respiratory and cardiac stimulants as before. The bowels moved frequently and involuntarily. There was a great deal of muscular twitching, but the patient could still be roused, though promptly lapsing into unconsciousness.

On the eighth day the temperature subsided steadily during the day, being 102.8° F. at 8 P. M. and 102° F. at midnight. Pilocarpine, subcutaneous infusion of normal saline solution, and enemata seemed to have acted favorably in reducing the temperature. The respiration varied between 68 and 36, falling with the temperature, the pulse going down from 140 to 112.

On the ninth day the temperature gradually rose again, and the evidence of uræmia was more pronounced. The urine was full of albumin and granular casts. The bowels were acted upon freely.

On the tenth day the temperature ranged from 103.8° to 104.8° F. An ice cap was applied to the head, and strychnine, subcutaneous transfusion, magnesium citrate, and general cardiac stimulants were given. The urine amounted to only ten ounces this day, and was as before in regard to casts and albumin. The patient was continuously unconscious.

On the eleventh day he received sixty ounces of water and thirty-eight ounces of milk, but he passed only thirteen ounces of urine. The temperature vacillated between 103.8° and 106.4° F., the pulse between 112 and 120, respiration from 40 to 70.

On the twelfth day the temperature gradually ascended to a fatal termination at noon, no urine having been passed for a number of hours.

In this case what might have been a successful result, so far as the bromide treatment was concerned, terminated fatally from nephritis. Whether the bromide contributed to this, it is difficult to affirm, although presumably it may have done so.

The method of administration which has gradually developed as the result of the experience of Macleod and my own observation may be formulated somewhat as follows: The drug should be given only in the daytime. One hundred and twenty grains of sodium bromide in half a tumbler of water, every two hours, until an ounce is given in the first day. The second day a smaller amount is given in the same way, and this may be sufficient, or it may be necessary to continue the doses in the same way on the third day. Macleod says the safe rule is to cease the administration of the bromide after twenty-four hours, when drowsiness is so profound that the patient can not be roused, or, when aroused, is incoherent. If the sleep continues or becomes deeper, no more bromide will be needed. It is to be remembered that the bromide acts in a cumulative manner. After the second or third day, when the bromide is withdrawn, the drowsiness, in some cases actual coma, tends distinctly to deepen for forty-eight hours, so that the fully developed sleep presents a rather alarming condition to any one not familiar with it. For two or three days there is difficulty in feeding the patients, and swallowing is sometimes impossible, so that rectal alimentation is required.

During this treatment there is apparently a tendency to aspiration pneumonia, so that feeding by the mouth becomes doubly dangerous. Any septic condition in the pharynx or in the antra communicating with the mouth should contraindicate the treatment. The poisonous effect of the bromide falls apparently upon the respiratory and cardiac centres, so that a weak heart or impaired pulmonary conditions would furnish reasons against the method. From the case of nephritis that I have reported, which terminated fatally, it is strongly suggested that the bromide of sodium in large quantities acts harmfully upon the kidneys, if diseased, and therefore any degree of nephritis should be a contraindication to this line of treatment.

Three deaths occurring in twelve cases, although in each instance attributable only remotely to the bromide, and occurring where the bromide had been used in extraordinary doses, doses that can no longer be advised, show that the plan of treatment is very far from being simple and without danger.

However, as compared with the difficulties of the ordinary methods that are pursued in correcting the addiction to morphine, it seems to me to be of very definite value in well-selected cases, and in such cases I should not hesitate, under appropriate conditions, to employ it. By appropriate conditions I mean full hospital facilities.

THE COLLECTION, PRESERVATION, AND TRANSPORTATION OF CLINICAL MATERIAL FOR LABORATORY EXAMINATION.

By STUART HART, M. D.

The advances in recent years of medical chemistry, microscopy, and bacteriology have made the information furnished by the clinical laboratory indispensable to every general practitioner. As an aid to diagnosis, by direct proof or by elimination of suspected conditions; as a help in accurately following the course of disease; as assistance in that most difficult realm of medicine, prognosis, and as a proof of the value of therapeutic measures, the edicts of the clinical laboratory to-day command a high position and one destined day by day to become of increasing importance.

The busy general practitioner, even if the facilities of a well-equipped laboratory are at hand, finds it impossible to devote the time required by such examinations, and is forced to depend for his information upon others, who have not only the laboratory equipment, but also the accuracy and facility acquired by a large amount of time and energy devoted to this particular field. If it were possible for the attending physician to do all the laboratory work essential for the welfare of his patient, I believe this would be the ideal method, as he would then be able to combine in his own personal observation both bedside and laboratory information. This combination of a knowledge of the clinical features of disease by actual contact with patients and a knowledge of the resulting facts obtained through the laboratory can not be too greatly emphasized; and for this reason I believe that the laboratory reports made by a physician familiar with diseases and their course are of far greater value than those made by men purely of the laboratory stamp, however expert they may be as chemists, microscopists, or bacteriologists.

By far the most satisfactory method of obtaining material for laboratory examination is for the patient to present himself at the laboratory and furnish, under the immediate supervision of the examiner, such specimens (blood, sputum, urine, etc.) as may be desired, or for the laboratory physician to go to the bedside and obtain fresh material, making such examinations at that time as are necessary. As these procedures are often impracticable on account of inaccessibility, lack of time, or the attendant expenses, it is necessary to resort to other methods of transportation.

It is my desire in this brief paper to offer a few useful suggestions which may allow the busy general practitioner to avail himself of the information attainable through a laboratory, though this may be located at some considerable distance from his field of work, by methods which will be no considerable tax on his time and which require no especial training for their execution.

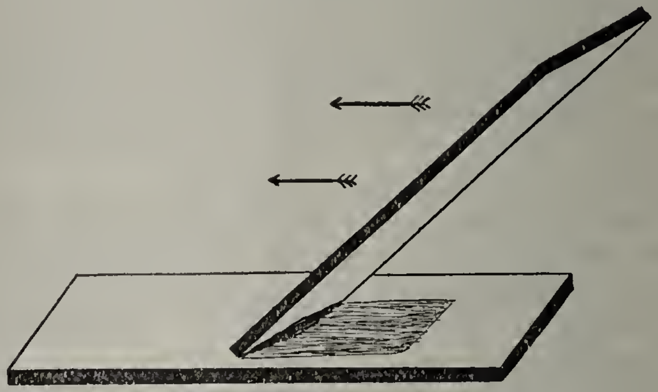
To obtain the best results, and particularly if a provisional laboratory diagnosis is wished for, it is desirable that there be sent with the specimen for examination a complete history of the case, including the physical examination, course of the disease, and the therapeutic measures employed, as well as an accurate description of the time and method of obtaining and preserving the specimen.

Blood.—Blood for examination is best obtained from the tip of the finger or the lobule of the ear. The latter is preferable, because it is less abundantly supplied with nerves and therefore less sensitive, and from it the flow of blood is usually more free. The part selected is first thoroughly cleansed with soap, water, and alcohol, and its circulation made active by a little friction with a towel. A quick stab with an ordinary three-cornered surgical needle, which has previously been sterilized by passing it through the flame of an alcohol lamp or a Bunsen burner, will then afford a free flow of blood, which should invariably be obtained without pressure. The first drop of blood should be wiped away and the succeeding drops used at the moment they escape from the wound, before coagulation has a chance to begin.

There should be at hand several ordinary glass microscope slides upon which the blood is to be collected. It is essential that these should be previously unused and that they should be washed with soap and water and alcohol, and thoroughly dried.

To obtain a specimen to be examined after Widal's method, for evidence of typhoid, it is only necessary to collect on one of the slides three or four good-sized drops of blood, by gently touching the slide to the bleeding point; this is dried by standing in the air, and may be sent by mail to the laboratory for examination. Blood drawn and preserved in this manner retains its power of reacting to Widal's test for a considerable length of time. Several specimens which I have tested as soon as drawn, and have preserved as above, and tested forty-eight hours later, have then shown reactions undiminished in strength.

Much other information in regard to the blood may be obtained from the examination of spreads, which may be made by taking a drop of blood on the slightly rounded end of a microscope slide, placing it on a second slide in the manner shown in the diagram, waiting for an instant until the blood has spread from side to side, and then pushing the one slide across the other in the direction indicated in the diagram. The tendency of one unaccustomed to make these spreads is to lay on the blood too thickly. Only a small drop of blood should be taken, and the spread should be made quickly and with moderate pressure. After spreading, the slides should be dried in the air, after which they may without injury be wrapped in paper and sent by mail or messenger to the laboratory. Several spreads from each case should always be sent, as a considerably wider latitude of information is gained by subjecting them to various staining methods.



Much valuable evidence in regard to the blood may be obtained from slides prepared in this manner. The amount of hæmoglobin present may be roughly estimated, though far less accurately than with one of the various forms of hæmoglobinometers. Relative changes in the ratio of leucocytes to erythrocytes, changes qualitative and quantitative in the red and white corpuscles and "blood plates," and changes in the serum can be accurately ascertained. For determining the presence of parasites in the blood, such as the *Filaria sanguinis hominis* and the malarial organism, no method offers more satisfactory results.

These blood spreads are remarkably resistant to any injurious effects occurring in the process of transportation. I have carried one of them, wrapped in a scrap of paper, in my pocket for ten days, and at the end of that time have been able to demonstrate in it the æstivo-autumnal malarial organisms undistorted and as clear as in the freshly drawn blood. One slide taken from a case of leucæmia and sent to Dr. E. G. Janeway, for whom I examined the specimen, had come by mail from Florida, and this and the history of the case were sufficient to establish a diagnosis. In another, from a case of trichinosis, a patient of Dr. Kinnicut's, the excess of eosinophilic leucocytes was perfectly preserved and easily demonstrated, although the stains were not applied until several days after the spread had been made. Similar instances might be cited of the leucocytosis occurring in pneumonia, inflammatory processes, and the like, and of red-cell changes in spreads from the anæmias, leucæmias, etc.

There is much information which, of course, can only be obtained from the fresh blood—for example, the accurate estimation of the hæmoglobin, and the actual enumeration of the corpuscles, as distinguished from the differential counts. But the method above described is so simple and furnishes so much information that I believe it will be very commonly used when familiarity with it is more widely established.

For protecting the slides from breakage several varieties of wooden cases are kept in stock by every vender of microscopic supplies.

Blood Serum.—Widal's reaction can be made more satisfactorily from pure blood serum than from blood drawn in the manner above described. The serum can be obtained by raising (on the abdomen) a small blister by means of a cantharides plaster an inch in diameter. From this a few drops of serum may be collected on a slide and allowed to dry in the air at ordinary room temperature, or can be sucked up into a thin glass tube, which, when filled, may be sealed at both ends by holding in a flame (care being taken not to apply the heat so that the serum may be coagulated), wrapped in cotton, placed in a small pasteboard box, and transported to the laboratory. Serum prepared in this way will preserve its properties of agglutinating the typhoid bacilli for a considerable time. A tube of serum taken from a patient giving a typical Widal reaction in January, 1899, was preserved in this way, and when tested a few days since (over a year after taking it from the patient) it afforded a strong and characteristic reaction.

Gastric Contents.—Vomited material and that obtained by means of the stomach tube may be collected in a wide-necked bottle (which has been previously carefully washed with hot water), packed in a wooden case, and sent to the laboratory.

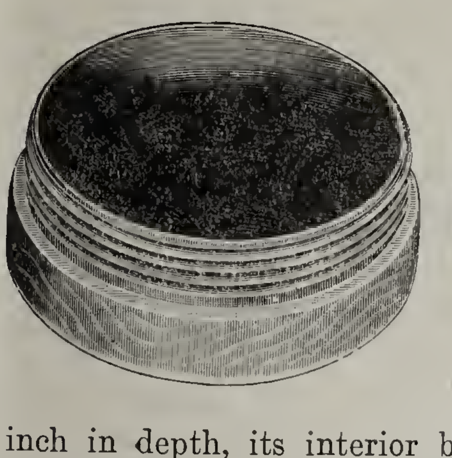
Various test meals, as recommended by different authorities, may be administered to the patient and removed for analysis; but for general purposes (*e. g.*, in estimating the amount of secretion of hydrochloric acid and the ferments, the extent of lactic fermentation, and the digestive powers over ingested material) the test breakfast of Ewald furnishes most valuable information. This consists in giving the patient, six hours having intervened since the ingestion of other foods, one Vienna roll without butter and a cup of weak tea without either sugar or milk. The patient should masticate the roll very thoroughly, as this allows the formation of the saliva and gastric juice and permits of its easy removal by siphonage. It should be extracted exactly an hour later by means of the stomach tube. Usually but little difficulty is encountered. The patient, if seated erect, can materially aid the establishment of siphonage by leaning forward and pressing the epigastric region with both hands. Water should not be used, if it can be avoided, to extract the stomach contents, as the addition of this will practically destroy the value of quantitative chemical analysis.

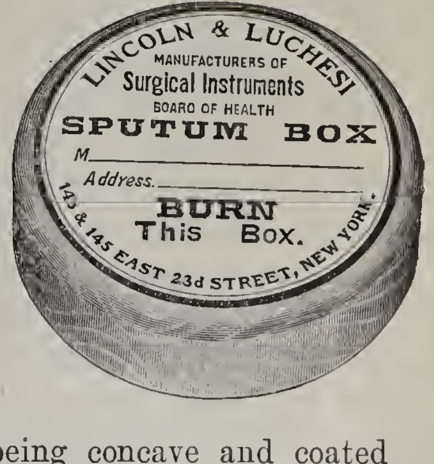
Material obtained by the tube or vomited ordinarily retains its chemical character practically unchanged for several days. Quantitative chemical analyses of a number of specimens which I made as soon as extracted, and similar analyses of the same specimens kept, without the addition of a preservative, at ordinary laboratory temperature for forty-eight hours, showed small quantitative changes, but so slight as to be of no clinical importance. Free acid seems to act as a preservative, and as an exception to the above it should be noted that when acid is absent, bacteria, when present in any considerable quantity, may produce changes materially affecting the chemical and microscopical condition of the fluid.

If a small portion of the specimen is put in a separate bottle and treated with a few cubic centimetres of a ten-per-cent. solution of formaldehyde, the microscopic characters can be well preserved. Even blood is well preserved in this way, and may be detected by the microscope, or chemically, as Teichmann's crystals.

Expectoration.—In obtaining sputum for examination the patient should be carefully instructed, so that he may obtain the specimen from the chest, and that it may not consist merely of saliva or nasopharyngeal mucus. In cases of suspected phthisis, asthma, etc., it is best to procure the sputum which the patient usually coughs up on rising in the morning. In other conditions, such as pneumonia, abscess, actinomycosis, etc., the time of day is naturally of little importance.

For collecting sputum for laboratory examination, the author several years ago devised a receptacle which he has found extremely satisfactory. It consists of a wooden box, two inches and a half in diameter and an inch in depth, its interior being concave and coated with an impervious layer of shellac and black varnish The cover is held on firmly by a spiral screw turned in the wood. The box is light, not easily broken, and may





be sent by mail. The wide opening makes it easy for a patient to expectorate into it without smearing the exterior, the black background assists the examiner in selecting the best particles for investigation, and the whole is easily destroyed by fire when it has served its purpose.

It is well to keep on hand several boxes which have been sterilized by dry heat by placing them in an ordinary oven for a couple of hours. To prevent decomposition, a drop of formalin may be added; this, of course, should be omitted when a culture is desired, but at other times serves well to preserve the characters of the tissues present, and does not interfere with the detection of the tubercle bacillus by the classical methods.

Many specimens preserved in this way and sent from remote places have furnished information of much diagnostic value. Among the important elements which may be demonstrated are elastic tissue, fibrinous casts, epithelium from various parts of the respiratory tract and from the liver (in cases of ruptured abscess of that organ), blood, amœbæ coli, echinococci, actinomyces, pneumococci, tubercle bacilli, etc.

Fæces.—The receptacle primarily intended for the collection of sputum is useful also for the transportation of fæces. Care should be exercised in selecting the portions of the stool which are mucous or sanguineous in character if the amœbæ coli or the bacilli of typhoid or tuberculosis are suspected.

The action of the bacteria present will rapidly disintegrate such epithelial cells or fragments of food as are present, but these may be preserved if a few drops of formalin are added and thoroughly mixed with the specimen.

Urine.—Too much stress can not be laid on the extreme and rapid variation in the quality and quantity of urine voided by the individual patient. Not infrequently are there drawn from a urine analysis erroneous conclusions which might have been readily eliminated by successive examinations.

To cite a common instance, I have of late made numerous examinations of the urine of a patient, under the care of Dr. E. G. Janeway, whose urine passed on rising in the morning frequently shows as much as one half per cent. of albumin and numerous casts, while other specimens passed on the same day show a mere trace of or complete freedom from albumin and no casts.

To eliminate such errors as far as possible, not only should several analyses be made from carefully measured twenty-four-hour specimens of successive days, but in each twenty-four hours at least three specimens of a hundred cubic centimetres each should be preserved, one obtained on rising in the morning, the second at midday, and the third at bedtime. They should be collected in new or carefully cleansed bottles, packed in a wooden box or mailing case,* and sent to the laboratory.

As is well known, the action of bacteria may in a few hours destroy the important characters of a urine. Not only may they change the reaction, accomplishing a solution of crystalline deposits and precipitating other substances normally held in solution, but often they break down and destroy organized deposits, such as pus, blood, and casts, their presence in largely increased numbers makes the detection of faint traces of albumin impossible, and the urea may be so diminished in quantity as to make its quantitative estimation useless.

The following table illustrates the change in urea of specimens of urine taken at random and allowed to stand in the laboratory at ordinary temperatures. The urea was estimated in grains for the twenty-four hours when first passed, and then at intervals of two and four days later.

Urea Determinations (Twenty-four-hour Specimens).

Specimen No.	Freshly passed.	Standing 48 hours.	Standing 4 days.
1..........	222 grains.	166 grains.	111 grains.
2.........	430 grains.	277 grains.	250 grains.
3..........	268 grains.	259 grains.	

By adding some substance with bactericidal properties the sediment and urea content may be preserved unchanged. I have found that urotropine answers very satisfactorily for this purpose. Powders of one gramme of urotropine can be given to the patient with instructions that he shall add one gramme to each specimen of one hundred cubic centimetres as soon as it is collected.

The following shows the preservative effect on the urea content. To each of the specimens below one gramme of urotropine was added to each one hundred cubic centimetres of urine.

Urea Determinations (Twenty-four-hour Specimens) with Urotropine added.

Specimen No.	Freshly passed.	Standing 48 hours.	Standing 4 days.
4..........	389 grains.	387 grains.	389 grains.
5..........	433 grains.	433 grains.	426 grains.

This affords us a simple method of preserving the urine until it reaches the laboratory.

77 West Fiftieth Street, *April 1, 1900.*

ETHYLIC BROMIDE AS AN ANÆSTHETIC FOR SHORT OPERATIONS.

By PAUL F. SONDERN, M. D.

Having had occasion during the period of six months to observe the almost daily administration of ethyl bromide as an anæsthetic in the operations for adenoids and other short throat operations at the clinic of Professor M. Lermoyez at the Hôpital St. Antoine, Paris, I was led to regard this anæsthetic as one of the safest and best in operations of the above class. My knowledge of the subject is entirely due to the kind instruction of Professor Lermoyez and the observation of cases in his clinic where his teachings were all fully verified.

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* Satisfactory cases are made by the Improved Mailing Case Co. and E. B. Estes & Co., both of New York.

Ethyl bromide must possess the following properties: It must be very volatile; when poured on the hand, it must evaporate rapidly and completely, without leaving any residue whatever.

It must be entirely colorless—a yellowish tint showing that decomposition has taken place, liberating bromine.

The odor must be sweetish.

The purity of ethyl bromide depends upon its mode of preparation. That commercially prepared by distilling a mixture of bromine, absolute alcohol, and phosphorus is a poor production. The proper method of obtaining an article suitable for safe anæsthesia is by the decomposition of the spirit of wine by pure sulphuric acid in the presence of bromide of potassium and then rectifying it by distillation over the oil of sweet almonds.

Light, humidity, and exposure to the air decompose it; therefore one should use only that put up in sealed colored glass; but an important point is that even under these conditions it is liable to spoil in a few weeks. We should therefore, if possible, use only very fresh solutions. If we regard these precautions we have an anæsthetic which offers the maximum of safety for short operations.

I shall not enter upon the physiological action of the drug; it passes through the same steps as chloroform, with one important difference—it does not clinically appreciably excite the different centres before paralyzing them; therefore we have no noticeable stage of excitement.

It acts as a vaso-dilator, and, being without fear of syncope, we can have the patient in a sitting position, making it especially valuable for throat operations. The mode of administration is entirely different from that of chloroform, as with ethyl bromide the quickest possible inhalation must be obtained.

The entire quantity—for a child, five to ten grammes; for an adult, ten to twenty grammes, never exceeding this quantity—is poured on the anæsthesia mask, a mask admitting the smallest possible quantity of air.

Anæsthesia is obtained in from twenty to forty seconds. At all events, we begin to operate one minute at the longest after the commencement of administration. The mask is removed and not again applied. One must be careful to arrest the administration at the proper moment, which can be noticed by the relaxation of the muscles of the neck and arms. The arms raised fall inertly, the head can be turned passively; but these will receive only our secondary consideration, our attention being fixed on the eyes, which remain open, and we shall recognize the proper moment when the pupil dilates and the conjunctiva begins to slowly suffuse. If we neglect this moment, and continue the anæsthetic, the muscles contract and become rigid, and there is some danger of asphyxia, especially if we endeavor to operate in the larynx at this time, for the glottis is apt to contract reflexly upon being touched.

If we have the misfortune to pass the proper operative moment, all that can be done is to wait until the patient comes out from the anæsthesia somewhat; but, as this occurs rapidly, it will generally be impossible to operate without recommencing the anæsthetic—advisably, at some other time. If administered to the above proper degree, the anæsthetic effect lasts for about two minutes, and the patient is almost immediately able to be put on his feet and walk, experiencing no uncomfortable sensations whatever.

The successful use of this preparation at the Hôpital St. Antoine is attributed by Professor Lermoyez to operating at the proper moment.

The physician accustomed to other forms of narcosis will think the patient under the influence of ethyl bromide not fast enough asleep—in fact, he is almost awake, but does not feel any pain, which is important for him, and does not offer any resistance, which is of importance to the operator.

For patients from three to sixteen years of age this anæsthetic has no equal for short operations; under that age chloroform is certainly the best, and in older patients there may be an excessive excitement for some hours after the administration of ethyl bromide.

The fatal cases recorded can be traced to one of the following causes:

The use of ethylene bromide instead of ethylic bromide.

The use of an old solution.

The use of the drug in repeated small quantities.

The continuation of administration for longer than one minute.

Repeated administration. Never apply the mask oftener than twice at one sitting, a fatal case being reported where death occurred at the third application.

19 East Thirty-eighth Street.

Therapeutical Notes.

For Falling Hair.—*Gazzetta internazionale di medicina pratica* for April 15th gives the following:

℞ Hydrochloric acid	75	grains;
Alcohol	2,250	"

M. A lotion to be applied to the scalp every evening at bedtime. It is reported to have proved very efficacious in the hands of many.

Laxative Pills.—The *Gazzetta degli ospedali e delle cliniche* for May 13th gives the following:

℞ Extract of hyoscyamus, Euonymin,	of each, $\frac{15}{100}$	of a	grain;
Podophyllin	$\frac{30}{100}$	"	"
Cascara	$\frac{60}{100}$	"	"

M. For one pill.

From one to three pills after the evening meal.

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SOCIETY PAPERS BY NON-MEMBERS.

IN his remarks on the abuse of the privileges of the American Medical Association in the presentation of papers by persons who are not members Dr. Keen, in his presidential address, emphasized an evil that we long ago pointed out. It is not confined to the association in question, but is shown in the meetings of almost all our large societies. It is notorious that the programmes of almost all such meetings are so glutted that, in spite of the failure of certain writers to appear or even to send their papers to be read by the secretary, there is not sufficient time for the adequate discussion of the topics that are presented. This is unfair to those members who take pains to prepare papers, and it goes far to defeat the chief object of the meeting, that of advancing and diffusing knowledge and bringing out the views of those present upon the positions taken. We can understand that a society may often find it to its advantage to invite a non-member to present a subject with which he is known to have had the means of making himself unusually familiar, but even then it must almost always be the case that the person invited is not a member simply because he is ineligible to membership, and in our judgment Dr. Keen pursued quite the right course when, as he tells us, he suggested to those whom his own association or any one of its sections had invited to read papers before it that it was the proper thing for them to become members of the association.

But it is not the man who is really invited who makes the trouble in most instances; it is the man who invites himself, so to speak, that is, who volunteers to read a paper. It is, of course, apparently ungracious to decline such an offer, but it may always be taken for granted that men who are really capable of instructing their fellow mortals are not those who rush forward to make the attempt unbidden, and the praiseworthy desire not to be discourteous should not be allowed to rise above the resolve to do what is for the society's advantage. It was time that an authoritative stand was taken in this matter, and we are glad that it has been taken by so representative an American physician as the president of the American Medical Association.

PUBLIC BATHS IN NEW YORK STATE.

MR. GOODWIN BROWN writes to us under date of May 27th, taking exception to the statements made in certain paragraphs quoted by us in our issue for May 19th from the *Medical Record* for May 12th under the heading of Public Baths and the Medical Profession of New York. If we understand Mr. Brown's contention, he takes special exception to the following passage: "Failing to overcome the opposition of Mayors Grant and Gilroy, the doctor found an earnest and able coadjutor in Mr. Goodwin Brown, who, in 1895, brought about the passage of a mandatory act in obedience to which several free baths have been and are now being constructed in this State (one city being compelled by a supreme-court mandamus to build a bath). While, therefore, Mr. Brown deserves credit for aiding Dr. Baruch in this important enterprise, his sweeping claim is absurd."

The "sweeping claim" referred to by our contemporary is stated in the following paragraph: "In the *New York Times* of April 29th Mr. Goodwin Brown, an Albany lawyer, claims to be the originator of 'the system of public baths,' which promises to become an enormous sanitary factor in our tenement life."

Mr. Goodwin Brown states that he "claims credit personally for the first general legislation for the establishment of free public baths," and gives us the following account of his work: In the winter of 1892 he prepared a bill, secured its introduction in the legislature—in fact, made several drafts, and finally perfected the measure, this bill not only providing for free public baths, but making the erection and maintenance of such baths mandatory in all cities of fifty thousand inhabitants and over, and providing that other cities, as well as towns and villages, might erect such baths and might borrow money for the purpose. This bill was passed with little opposition, but when it reached the governor's office it was suggested that, inasmuch as it might afford a precedent in depriving cities of some of their local authority, it ought not to be signed, although Governor Flower personally was in favor of the measure. Consequently the bill was recalled, the mandatory clause was struck out, and the bill was repassed and signed. Mr. Brown therefore asserts that he secured the passage of the same legislation which exists to-day three years before he knew or heard of Dr. Baruch, and refers to the files retained at Albany of all bills as introduced and as finally passed, to prove the passage in 1892 of this mandatory legislation as the result of his own efforts and before he came into any kind of contact with Dr. Baruch.

Mr. Brown adds that, while he is willing to concede that Dr. Baruch has done a great deal for the establishment of free public baths, unless it could be established that the latter gentleman was responsible for the legislation of 1892, to say nothing about the legislation of 1895, it could not be maintained that he was the pioneer of public baths, for there were no public baths in this country prior to the enactment of the legislation above referred to.

On the other hand, Dr. Baruch has long been known as an ardent advocate of the public-bath system, and, according to the *Medical Record*, so far back as 1890, or two years prior to Mr. Brown's first legislative success, had brought the subject before the New York Academy of Medicine, and the *Record* commented in that year on his earnest agitation of this subject.

It seems to us that there is a good deal of misunderstanding on both sides. Mr. Brown's claim to "credit personally for the first general State *legislation* for the establishment of free public baths" appears amply conceded in the phrase "Mr. Goodwin Brown, who in 1895 brought about the passage of a mandatory act." That is by no means incompatible with the idea that the free-bath movement was "*inaugurated*" by Dr. Baruch. It is by no means unheard of in the history of scientific progress that the arduous labors of one prepare the soil for them to attain their practical fruition at the hands of another. It is to be deplored that any controversy at all should arise over such admirable accomplishment as the institution of free public baths, and we trust that the lion and the lamb may yet lie down peaceably together, content with their respective and honorable rôles of pioneer and legislator.

THE "PATHOGENIC" THEORY OF THE ORIGIN OF TYPHOID FEVER.

THE address in state medicine delivered at the recent meeting of the American Medical Association, by Dr. Victor C. Vaughan, of the University of Michigan, entitled Conclusions Reached after a Study of Typhoid Fever among the American Soldiers in 1898, represents the work done by a commission consisting of Dr. Vaughan, Dr. Walter Reed, of the army, and the late Dr. Edward O. Shakespeare, of the volunteers. It is to the courtesy of the *Journal of the American Medical Association* that we are indebted for an opportunity to examine advance proof sheets of the address, which covers many points connected with the unfortunate prevalence of typhoid fever in the American camps during the period that preceded the actual clash of arms in the recent war with Spain. Our space does not admit of our dealing with more than one of those points—that, namely, of the "pathogenic" theory of the origin of the disease. Dr. Vaughan remarks that the theory was proposed by Murchison, and we may add that this writer was so recently an authority of the first rank on fevers that the demolition of the theory within the short time that has since elapsed is a striking illustration of the rapidity with which medicine is advancing. We may add, too, that the word "pathogenic" was better chosen than might on first thoughts appear, for it strays from the path of conventionality to express the essence of Murchison's idea, that of the genesis of a specific disease *de novo*.

Murchison said: "Typhoid fever may be generated independently of a previous case by fermentation of fæcal, and perhaps other forms of, organic matter." This theory, says Dr. Vaughan, is founded on the belief that the colon germ may undergo a ripening process by means of which its virulence is so increased and altered that it may be converted into the typhoid bacillus, or at least may become the active agent in the causation of typhoid fever. This idea has met with consent in the minds of many French, English, and American army medical officers, and in particular it has been upheld by Surgeon Davies, of the British service, in the following words, quoted by Dr. Vaughan: "It is well known that 'camp diarrhœa' is of the commonest occurrence among troops shortly after taking the field in a tropical and subtropical climate. Change of habits, change of food, improper or unsuitable food, bad water, heat and exposure to sun, and chill—these are all obvious factors in its causation; there is nothing in any way specific. Let us consider the sequel as regards the individual, and as regards his surroundings. The individual may in some cases remain in fairly good health and vigor in spite of a continuance of a bowel trouble; other individuals may suffer more from the exposure, fatigue, and weakening effects of the continued flux. The surroundings may possibly be and remain sanitary, the camp clean, the water pure; but in all probability the reverse will be the case, at any rate, in some instances; the water bad, the soil fouled, very likely overcrowding of the camp, with consequent difficulty, if not impossibility, of proper removal or disposal of fæcal matter. Under certain conditions of heat and moisture favorable to the development and multiplication of low forms of vegetable and animal life, which is the more likely or reasonable to expect: that diarrhœa in weakly and exhausted individuals should remain diarrhœa and nothing more; or that with an increase of filth and decomposition, polluting soil, air, and water, a development of filth-generated pathogenic poison should take place, capable of causing in such weakly persons a fever with diarrhœa, a poisoning of the organism, producing pyrexia and inflammation of certain glands in the alimentary tract, in fact, a specific fever? Is this supposition of the evolution, gradual or rapid according to circumstances, of a disease poison dependent on *increased* conditions of pollution of soil, air, or water, either separately or all three together, unreasonable or illogical? Would it not, on the contrary, be more unreasonable to suppose that, under such conditions, there could be no evolution at all? These conditions of camp pollution undoubtedly exist, and tend to increase, in many instances; are they to have no effect? Is diarrhœa to continue as simple diarrhœa, or is evolution to come into action and produce a new disease? New, indeed, only because the causes necessary for its production are just now brought into operation—spontaneous only in the sense that water is of spontaneous origin when from hydrogen and oxygen the electric spark has produced water, where no water was before."

In opposition to arguments of which the foregoing is an example, the commission has been able to show that the specific poison of typhoid fever was introduced into every one of the camps in which the disease broke out, so that there is no necessity of resorting to the theory that the colon bacillus may be converted into the typhoid-fever germ. Moreover, says Dr. Vaughan, all the known facts of experimental bacteriology are at variance with the theory, and the history of typhoid fever in every encampment shows not only that this disease was not evolved from simple diarrhœa, but that as a rule the men who had diarrhœa did not subsequently manifest typhoid fever.

PUBLIC BATHS IN PERSIA.

Cleanliness in Persia is hardly idyllic. A Persian physician has, according to the *British Medical Journal* for May 26th, been giving in the *Archives orientales de médecine et de chirurgie* for April an account of the public baths in his own country. The bath is a large tank used by all sorts and conditions of men—and of women also, though by them, we are told, at different times. It is well to note this fact in view of a point which follows. The water does not flow, but is changed once in six months. It is said to be "thick with the dirt from the skin and the epidermic refuse of the vast numbers of human beings who use it." Moreover, the author sketchily indicates the idea that it is used as a convenient receptacle of sundry excretions from the *corpora vilia* of its users, the filth accumulating at the bottom even to a depth of from twelve to sixteen inches. It is small wonder that the author considers these human middens disseminators of favus, alopecia areata, and other skin diseases, and perhaps even of syphilis; but when he seriously informs us that maids and respectable widows have been impregnated in them by wandering spermatozooids, we can only surmise either that the times for men and women bathers occasionally overlap, or else that the "homing" instinct of the Persian spermatozooids is phenomenally developed. On the whole, this latter story, we fancy, resembles the Persian bath: for amusement it may serve a purpose, but it won't wash.

EXPLOSIVE BULLETS.

While explosive results similar to those brought about by detonating bullets may occasionally occur with the regulation bullets used by all modern small-bore army rifles, as was shown in the Spanish-American war, and while some mode of tampering with the outer hard shell of the regulation bullets both for the Mauser and Lee-Metford rifles used by the respective combatants in the South African war may be possible, it is with surprise as well as regret that we read in the *British Medical Journal* for May 26th a positive statement by Mr. H. Braxton Hicks as follows: "I beg to state that in our sorties outside Kimberley we have not only picked up one (explosive bullet) here and there, but bandoliers full of bullets, with a cap of fulminate of mercury let into a small hollow on the nose of the bullet (Mauser's)." It is to be hoped that this was possible not by the connivance of the Transvaal authorities, but because of the greater independence and freedom from control of individual members of Boer commandoes, who undoubtedly, at first at any rate, supplied much of their own ammunition as of their other equipment.

A PUERTO RICAN OFFICER OF AN AMERICAN MEDICAL SOCIETY.

For many years past several of our national medical societies have freely admitted our Canadian brethren to membership, and the policy has proved beneficial in every way. So far as we know, a physician of San Juan, Puerto Rico, Dr. G. G. Graff, is the first resident of our new outlying possessions to be made an officer of one of our societies. He is among the vice-presidents of the American Academy of Medicine elected at the annual meeting held in Atlantic City on June 4th. It is to be hoped that our dependencies will in future be largely represented in our societies.

ACTING ASSISTANT SURGEONS AND THE REGULAR SERVICE.

We are glad to learn that medical boards have been ordered to meet in Cuba and in the Philippines for the purpose of examining acting assistant surgeons who may be eligible for commissions in the regular medical service of the army, in which there are said to be twelve vacancies. Nothing could be a greater inducement to young physicians of a high order of merit to take contracts than a reasonable prospect of transfer to the regular service in due time.

RATS AND THE PLAGUE.

A new link in the chain tracing the connection between rats and the plague is forthcoming in a communication to the *Lancet* for May 26th by Mr. J. Bell, pathologist to the Government Civil Hospital at Hongkong. A fatal case of plague occurring in an adult Chinaman is said to have resulted from the man being bitten in the left thumb by a rat while opening the iron door guarding a street water tap. The local condition of the hand and forearm, the thumb showing the marks of the bite, and the condition of the axillary glands, which yielded a culture of typical plague bacilli, seem to point almost unmistakably to the connection between the bite and the disease.

THE VENTILATION OF CARS.

In a commendable plea for the proper ventilation of street cars, which appears in the *Pennsylvania Medical Journal* for May, the, to us, astounding statement is made that "train men on steam cars are taught how to heat, ventilate, and make their passengers comfortable." It is not so much the heating and ventilation of the passengers that startles us, as the idea that the instruction referred to may have been meant to apply to the heating and ventilation of the cars by the train men. In that case we fear that either the quality of the teaching or the capacity of the pupils is sadly deficient, for about eighty per cent. of the cars on all the trains in which it has ever been our lot to travel have appeared to us to be insufferably hot and stuffy, and atmospherically stagnant. We fully indorse any plea for the proper ventilation not only of street cars, but of steam cars also.

ITEMS.

The Medical Society of New Jersey held its hundred-and-thirty-fourth annual meeting in Atlantic City on Monday and Tuesday, June 4th and 5th, under the presidency of Dr. Luther M. Halsey, of Williamstown, who delivered an address entitled Our Duty as Physicians to Consumptives.

The Medical Society of City Hospital Alumni, St. Louis.—At the last regular meeting, on Thursday, June 7th, the following papers were presented: General Septicæmia and Empyema, by Dr. George H. Lane, and A Report of a Case of Purpura Rheumatica, by Dr. M. A. Bliss. Dr. William A. Hardaway, Dr. M. F. Engman, and Dr. Joseph Grindon took part in the discussion which followed.

The Associated Physicians of Long Island.—The annual meeting will be held in Northport, Long Island, on Saturday, June 16th.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 26 to June 2, 1900:*

Alexander, James A., Acting Assistant Surgeon, United States Army, will proceed from Matanzas to Santa Clara, Cuba, for temporary duty.

Cleary, Peter J. A., Lieutenant-Colonel and Deputy Surgeon-General, United States Army, will proceed to and inspect the hospitals at Fort Brown, Fort Ringgold, and Fort McIntosh, and return to San Antonio, Texas.

Frick, E. B., Captain and Assistant Surgeon, United States Army, is detailed as a member of the board of officers in place of Phillips, John L., Captain and Assistant Surgeon, relieved.

Pope, Benjamin F., Lieutenant-Colonel and Deputy Surgeon-General, United States Army, will report to the commanding officer, Presidio of San Francisco, for temporary duty during the absence of Harvey, P. F., Major and Surgeon.

Wetherill, Henry E., First Lieutenant and Assistant Surgeon, United States Army, will report to the commanding general, Department of California, for duty.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending June 2, 1900:*

Barber, W. H., Assistant Surgeon. Detached from the *Alliance* and ordered to duty at the Naval Hospital, New York.

Fisk, C. N., Assistant Surgeon. Commissioned assistant surgeon from May 15, 1900.

Grow, F. J., Assistant Surgeon. Detached from the *Richmond* and ordered to the *Monadnock*.

Norton, O. D., Surgeon. Detached from the *Monadnock* and ordered to the *Bennington*.

Taylor, J. S., Assistant Surgeon. Detached from the *New Orleans* and ordered to the *Culgoa*.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the United States Marine-Hospital Service for the Seven Days ending May 31, 1900:*

Bailhache, Preston H., Surgeon. Detailed as official delegate of the service at the meeting of the American Medical Association at Atlantic City, New Jersey, from June 5 to June 8.

Cofer, L. E., Assistant Surgeon. To proceed to San Francisco and report to Surgeon J. J. Kinyoun for special temporary duty.

Primrose, R. S., Acting Assistant Surgeon. Granted leave of absence for five days.

Richardson, S. W., Hospital Steward. Granted leave of absence for seven days from May 20, 1900, under the provisions of Paragraph 201, Regulations, Marine-Hospital Service.

Appointments.

M. Victor Safford and C. A. Bailey, appointed acting assistant surgeon for duty at the Immigration Depot, New York.

W. F. MacDowell, appointed hospital steward and chemist.

Society Meetings for the Coming Week:

Monday, *June 11th:* New York Academy of Medicine (Section in General Surgery); New York Academy of Sciences (Section in Chemistry and Technology); New York Medico-historical Society (private); New York Ophthalmological Society (private); Lenox Medical and Surgical Society, New York (private); Harlem Medical Association of the City of New York; Gynæcological Society of Boston; Burlington, Vermont, Medical and Surgical Club; Norwalk, Connecticut, Medical Society (private).

Tuesday, *June 12th:* New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private); Buffalo Academy of Medicine (Section in Medicine); Kings County, New York, Medical Association; Rome, New York, Medical Society; Medical Societies of the Counties of Chenango (semiannual), Erie (semiannual—Buffalo), Genesee (annual—Batavia), Oswego (annual—Mexico), Rensselaer, Schenectady (semiannual—Schenectady), Warren (annual—Lake George), and

Wyoming (annual—Warsaw), New York; Newark (private) and Trenton, New Jersey, Medical Associations; Clinical Society of the Elizabeth, New Jersey, General Hospital and Dispensary; Northwestern Medical Society of Philadelphia; Practitioners' Club, Richmond, Kentucky; Richmond, Virginia, Academy of Medicine and Surgery.

Wednesday, *June 13th:* New York Pathological Society; American Microscopical Society of the City of New York; Society of the Alumni of the City (Charity) Hospital; Society for Medical Progress, New York; Medical Societies of the Counties of Dutchess (semiannual—Poughkeepsie) and Montgomery (semiannual—Fonda), New York; Middlesex, New Jersey, County Medical Society (annual); Rhode Island County Medical Society (annual—Providence); Philadelphia County Medical Society.

Thursday, *June 14th:* Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; New York Laryngological Society; Medical Societies of the Counties of Cayuga, Cortland (annual), and Fulton (semiannual), New York; South Boston, Massachusetts, Medical Club (private); Pathological Society of Philadelphia.

Friday, *June 15th:* New York Academy of Medicine (Section in Orthopædic Surgery); Clinical Society of the New York Post-graduate Medical School and Hospital; Baltimore Clinical Society; Chicago Gynæcological Society.

Births, Marriages, and Deaths.

Married.

Crampton—Tully.—In New York, on Monday, June 4th, Dr. Charles Ward Crampton and Miss Grace Tully.

Fiske—Riis.—In Richmond Hill, Long Island, on Friday, June 1st, Dr. William Clarence Fiske and Miss Clara Caroline Elizabeth Riis.

Folkes—Lopez.—In Biloxi, Mississippi, on Monday, June 4th, Dr. Hyman McMackin Folkes and Miss Teresa Lopez.

McLaughlin—Belloni.—In New York, on Friday, June 1st, Dr. George E. McLaughlin and Miss Georgia Havemeyer Belloni.

Miller—Moir.—In Chamois, Missouri, on Wednesday, June 6th, Dr. William Conrad Miller and Miss Florence K. Moir.

Perkins—Richmond.—In New Orleans, on Tuesday, June 5th, Dr. W. M. Perkins and Miss Martha Richmond.

Rachlin—Rosenthal.—In Brooklyn, on Thursday, May 17th, Dr. William Rachlin and Miss Rosalind Rosenthal.

Died.

Du Bois.—In Brooklyn, on Friday, June 1st, Julia C. Du Bois, wife of Dr. C. F. Du Bois.

Miller.—In Chicago, on Thursday, May 31st, Dr. Truman W. Miller, in the sixty-first year of his age.

Shakespeare.—In Philadelphia, on Friday, June 1st, Dr. E. O. Shakespeare, in the fifty-fourth year of his age.

Obituaries.

EDWARD O. SHAKESPEARE, M. D., OF PHILADELPHIA.

Dr. Shakespeare, the well-known pathologist, of Philadelphia, died suddenly in a hotel on Friday, June 1st, in the fifty-fifth year of his age. He was a native of the State of Delaware, but had been identified with Philadelphia for many years. In 1885 he was commissioned by President Cleveland to investigate the conditions under which Asiatic cholera prevailed in India and elsewhere, and in 1898, during the war with Spain, he was appointed a brigade surgeon of volunteers. During that war he took a prominent part in investigating the causes of the prevalence of typhoid fever in the American camps.

Although it had been known for some time prior to Dr. Shakespeare's death that he was the subject of a cardiac affection, it was recently supposed that he had improved sufficiently to warrant his making a European tour, and upon that he would soon have embarked had not his death occurred. He was a man of fine presence and a prominent laborer in the field of pathology.

Pith of Current Literature.

The Journal of the American Medical Association, June 2, 1900.

Intralaryngeal Insufflation for the Relief of Pneumothorax. Its History and Methods, with a Description of the Latest Devices for this Purpose. By Dr. Rudolph Matas.

Intubation of the Larynx. By Dr. Charles J. Whalen.

Functionally Good Results in the Treatment of Fractures as Viewed by Skiagraph and Photograph. By Dr. B. N. Torrey.—The author's conclusions from his investigations of fractures of the extremities with the fluoroscope and skiagraph are that hitherto we have believed that we were attaining much more perfect anatomic results than it is possible to get in the great majority of cases, and that the getting of a good functional result without deformity, as viewed by the unaided senses, constitutes the practically ideal; that it would be impossible to correctly coaptate a fractured bone, buried in muscular tissues, and recognize it, without the use of the fluoroscope. Very few oblique fractures of the larger bones of the leg or arm are treated without shortening and other deformities. Angular deformities alone can be corrected or prevented by lateral splints. Oblique fracture of the tibia, when both bones are broken, are the hardest fractures to treat without marked deformity. It is difficult to make an interested person realize that a skiagraph picture may exaggerate a deformity. An x-ray picture is unjustly exacting for legal purposes. These are the main conclusions of the paper, which is illustrated by appropriate skiagraphs and photographs.

On Removal of the Cervical Sympathetic in Glaucoma and Optic-nerve Atrophy. By Dr. James Moores Ball.—Dr. Ball believes that excision of the cervical ganglion is a most valuable procedure in glaucoma, particularly in glaucoma simplex. When iridectomy has been tried without benefit in inflammatory glaucoma, excision of the cervical ganglion should be tried. Excision of the cervical sympathetic nerve on both sides is advised in exophthalmic goître. The postmastoid route is to be preferred in excision of any part or all of the cervical sympathetic.

The Doctor in the Public Schools. By Dr. G. W. Hiett.

Tuberculosis in Colorado. Methods of Dissemination and Measures for its Restriction. By Dr. G. E. Tyler.

Regulation of the Practice of Medicine. By Mr. John I. Dille.

Medicine as a Business Proposition. By Dr. G. Frank Lydston.—This is the concluding portion of an amusing, but highly practical lecture. The doctor's imaginary and literary style in parts resembles that of George Ade.

Medical Record, June 2, 1900.

Radical Cure of Epithelial Cancer by Arsenic. By Dr. C. Truneček.—After reciting two cases in detail in which the application of the hydro-alcoholic mixture of arsenious acid was followed by complete cure, the author gives the mechanism of the cure as follows: 1. The cancer cells are first of all dehydrated by the alcohol, and then their protoplasm coagulates in the presence of arsenic. 2. The cells of cancerous connective tissue—cancerous stroma—degenerate, and provoke a serious exudation, which in its turn determines alterations in the cells mummified by the arsenic. 3. In healthy surrounding tissues a circumscribed inflammation is set up by the remedy, which always goes on to suppuration, and by means of which the neoplasm is first cut off from the circulation, and is finally eliminated from the organism as a foreign body.

Cystic Tumors of the Testis and Epididymis. By Dr. James B. Bullitt.

Health Conditions in the Hawaiian Islands. By Dr. Charles E. Davis.—The ideal location of these islands (just inside the tropics), the great variety of climate, the remarkable purity of the air, and the fertility of the soil are commented upon. In a cosmopolitan population of 109,000 souls there are but 4,000 Anglo-Saxons; yet the latter have in their hands the entire control of affairs. Syphilis and leprosy are the scourges of the natives, who can not be made to see the necessity of proper medical inspection. The sanitary conditions are unspeakable in Honolulu, but things are gradually being arranged differently and Dr. Davis believes that, in the happy future, when we have a National Health Department with a representative in the cabinet, there will no longer be "pigs and ducks, stagnant pools, rice, taro, and banana patches," within the city limits of Honolulu.

The Association of Chronic Appendicitis with Disease of the Right Annexa. By Dr. Hiram N. Vineberg. —This paper refers to those puzzling cases in which the diagnosis vacillates between chronic catarrhal appendicitis and a mild form of salpingo-oophoritis, the symptoms being vaguely referred to the right lower half of the abdomen, and these cases would seem to show an association of the two affections in the same patient. The paper is interesting and the two detailed cases are fully illustrative.

Medical News, June 2, 1900.

Treatment of Membranous Colitis. By Dr. W. H. Thomson.—Free irrigation of the colon with normal saline solution, to which may be added five drops of oil of peppermint to the pint, is of great service. Sometimes a gallon of water in which from sixty to a hundred grains of resorcin have been dissolved is found of great benefit, when used toward the end of the irrigation. Thirty to forty grains of silver nitrate in a pint of clean hot water may be used once a week instead of resorcin. Small doses of castor oil taken an hour after meals, and continued for months at a time, are of service in changing the disordered nutrition of the intestinal mucous membrane, as is also nitrate of silver in quarter-grain doses combined with nine grains of turpentine resin. Five grains of resorcin in solution with tinctura nucis vomicæ half an hour after meals constitutes a good prescription for the gastric symptoms, to be supplemented by ten grains each of sodium benzoate and bismuth salicylate in capsules an hour after each meal as antiseptics. Massage of the bowels is of use. As to diet, beans, corn, spinach, the woody vegetables, and oatmeal should be avoided, and the patient encouraged to eat meat, poultry, eggs, zoolack or kumyss, peptonized milk, etc. Exercise is good. Finally, when everything else fails, recent writers advise that the colon be given a prolonged rest by the establishment of an artificial anus in the right flank.

The Sanitarium Treatment of Incipient Pulmonary Tuberculosis and its Results. By Dr. E. L. Trudeau.

The Prevention of Scarlet Fever. By Dr. Floyd M. Crandall.

The State of New York and the Pathology of Insanity. By Dr. P. M. Wise.

The Philadelphia Medical Journal, June 2, 1900.

The Hospitals for the Insane and the Study of Mental Diseases. By Dr. Stewart Patton.

Diagrams of the Genito-urinary Tract, with a Table for Keeping Records. By Dr. Ramon Guitéas.

The Registration of Tuberculosis. By Dr. Lawrence F. Flick.—Registration is necessary in order that (1) the requisite data may be obtained to put the prevention of tuberculosis upon a scientific basis; (2) contact may be controlled; (3) the creation of fomites may be prevented; (4) fomites may be sterilized; and (5) innocent parties may be given an opportunity to protect themselves against contamination in dwelling places.

Asthma. By Dr. Richard B. Faulkner.

Siphonage of the Partitioned Bladder for the Individual Kidney Urines. By Dr. Andrew J. Downes.

Prognosis in Fractures. By Dr. Clinton B. Herrick.

Boston Medical and Surgical Journal, May 31, 1900.

The Inductive Method Applied to Medicine. By Dr. C. W. Eliot.

The Course in Pathology at the Harvard Medical School. By Dr. William T. Councilman.—The ideas that have been prominently brought out in this course are: 1. That the mind of the student must be active, not passive; that he can only acquire knowledge by his own powers of observation and deduction, not by being told things. 2. That teaching should be individual so far as possible. That the central idea should be to give opportunities to the student, and to assist him in the effort which he himself makes. 3. That medical education should not be directed solely to teaching the medical art, but education in its true sense, the development of the individual, must not be lost sight of.

The Case System in Medicine. By Mr. W. B. Cannon.

A Personal Experience in the Teaching of Surgery. By Dr. Herbert L. Burrell.

A Consideration of the Principal Objections to "Section Teaching," together with Some of its Advantages. By Dr. A. H. Wentworth.

The Lancet, May 26, 1900.

The Wounded in the Present War. By Sir W. MacCormac.

The Operative Treatment of Simple Fractures. By Dr. W. A. Lane.—The writer calls attention to the difficulty with which fractured bones are restored to their *status quo ante.* He instances fracture of the femur, and states that unless the mechanism of the limb is thoroughly understood, correct apposition is most difficult to obtain. Bringing the anterior superior spine, the middle of the patella, and the ball of the great toe in line is not looked upon by him as proof of accurate apposition. Ordinarily there is an alteration in the axes of the fragments with alteration of the lines of force through the joints, and the production of joint changes which the writer calls "mechanical or traumatic arthritis." These changes consist in the removal of articular cartilage at points of pressure, induration, and functional changes. They are usually regarded as evidence of osteo-arthritis or rheumatoid arthritis. The mechanical depreciation following a fracture of the lower extremity is often very great. Fractures produced by indirect violence are almost always spiral in character, while those due to direct violence are usually transverse or oblique. In every simple fracture the surgeon should, failing to obtain accurate apposition as determined by the radiograph, cut down upon the seat of fracture and restore the bone or bones to their original form.

Summer Diarrhœa. By Dr. F. J. Waldo.—The third of the Milroy Lectures upon this subject, with special relation to its causation and prevention.

The After History of Forty-one Cases Treated by Operation for Destructive Hip-joint Disease. By Dr. A. E. Barker.—The writer reports the results and after history of forty-one operations for chronic tuberculous hip-joint disease. No case died before leaving hospital, but one died from marasmus eighteen months after. The second case died of pyæmia following injury one year after operation, and the third fatal case was due to tuberculous meningitis five years after operation. Of the remaining cases, all but eleven were followed up after leaving the hospital. Of those traced, there was no recurrence in fourteen; some recurrence was noted in ten cases after some years, and in two after many months. But all of these twenty-six were in good health and walking about when last seen. As to the functions of the limbs operated on, as seen (in all cases but two) years after, they were excellent. Shortening, of course, was present. The following was the routine treatment: A two-inch-and-a-half anterior incision (Parker) into the abscess in the joint. Flushing out with hot water. Remains of head and sequestra removed with flushing gouge, the acetabulum being gouged clean. The whole cavity scraped, flushed, and dried, when a small quantity of iodoform emulsion is poured in. Careful suture of superficial wounds without drainage.

Congenital Word-blindness. By Dr. J. Hinshelwood.

The Incubation Period of Plague. By Dr. F. G. Clemow.—The writer states that the term "incubation period" should be held to cover that period which elapses between the time when the organisms gain access to the surface or tissues and the onset of the symptoms of the disease. In cases of plague contracted through a wound during a necropsy on a plague cadaver the incubation period is almost invariably two days, rarely three, and perhaps never longer. When contracted in the ordinary manner the interval between exposure to infection and the onset of symptoms is usually from two to seven days, but it may be as short as twenty-four hours, and it may be extended in rare cases to a period of several weeks. For practical purposes it has been generally agreed to regard the maximum incubation period of plague as ten or twelve days.

On the Inefficiency of the Board-of-Trade Tests for the Detection of Color Blindness. By Dr. F. W. Edridge-Green.—The writer calls attention to the inefficiency of the above tests, and states that he has examined a man who was so color blind that he could not see a red light at all, and yet he passed the Holmgren test with ease. Not only does this test fail to detect color-blind persons, but normal-sighted persons are rejected by it, particularly when the examiner adheres very carefully to the directions accompanying the test. The writer recommends the use of lantern slides, seven slides containing colored glasses and six modified glasses. These colors correspond to the standard red, green, and white lights as used in the marine and railway services.

Glasgow Medical Journal, May, 1900.

Dr. Charles Badham, Professor of the Practice of Medicine in the University of Glasgow, 1827–1841. By Dr. James Finlayson.

Lectureships on Trade Diseases. By James W. Allan, M. B.—The author advocates a systematic study and teaching of those diseases necessarily connected with various industries, in which respect he finds Great Britain to be far behind France and Germany.

Notes on Extraction of Senile Cataract. By Dr. Freeland Fergus.—The author protests against operation with a preliminary iridectomy and with downward section. His objections to preliminary iridectomy are: 1. Double exposure to risks of septic infection. 2. Corneal astigmatism, being in relation to the amount of cicatrization, two incisions must increase the risk and extent of it. 3. One operation is sufficient. The old idea that preliminary iridectomy prevented iritis or suppuration after cataract extraction is mistaken. The author makes an iridectomy at the time of operation, making it entirely in the apparent sclera and cutting a large conjunctival flap. As soon as the section is complete the flap is carefully folded down over the cornea out of the way till the iris is excised and the lens extracted. The conjunctival flap wound heals at once, thus sealing the deeper structure against septic infection. The iridectomy lessens the risk of non-union due to a possible prolapse of the iris. The author still finds it necessary to insist on sterilization, not only of instruments but of dressings, eye drops, etc. Little good, the author considers, can ensue in ophthalmic surgery from germicidal applications, for the strongest bichloride solution which the eye can tolerate is 1 in 8,000, while the *Staphylococcus aureus* requires an immersion for twenty-five minutes in a 1-to-1,000 solution to kill it. The author considers the best method of rendering the conjunctiva aseptic the simple process of rubbing it thoroughly several times each day with sterilized cotton moistened with some sterilized fluid which will cause no irritation—*e. g.*, boric solution or boiled water. Mechanical removal is possible, and is all that is necessary. As to drops—atropine, pilocarpine, cocaine, etc.—the drugs are kept in half-grain packets and dissolved in hot water in sterilized flasks with droppers within an hour before use. The author has not found that cocaine heated with hot water loses its anæsthetic properties.

La Presse médicale, May 12, 1900.

Trephining of the Mastoid in Acute Otitis.—M. Marcel Lermoyez says that a sharp clinical distinction must be made between an acute otitis media and mastoiditis. When the latter has once developed, the pus can escape in four different ways: 1. Through the normal osseous fissures. In these cases a Wilde's incision is sufficient to effect a cure. 2. Through the vascular system. In these cases the abscess cavity forms in the antrum, which then becomes the point of exit for the pus and the place of entrance for the surgeon. 3. Subperiosteally. Here a subperiosteal abscess forms, the so-called "periosteal otitis" of Duplay. These cases are rare. 4. The pus may break through the mastoid bone.

The pus may burrow in five different ways: 1. Outward, through the skin. 2. Below, through the cellular tissue of the neck, usually through the sterno-cleido-mastoid muscle. 3. Through the auditory canal. 4. Through the skull. 5. Into the lateral sinus. All these conditions offer opportunities for study in each case; for, although we can watch the external part of the mastoid, we have not yet learned to judge of the depth of the inflammatory process.

Pathogenesis of Mitral Dwarfing.—M. A. Gilbert and M. F. Rathery conclude that this condition is due to the mutual interaction of all the organs. The internal organs in their ordinary functions or in a pathological condition can influence a healthy heart, and certainly can injure a diseased one. They assert that these cases are due not only to a mitral disease, but that dwarfing can follow other heart diseases, giving rise to a veritable "cardiac dwarfing."

La Presse médicale, May 16, 1900.

Musset's Sign.—M. Armand Delpeuch, in reviewing two cases of aortic disease in which rhythmical nutation was present, calls attention to this phenomenon as a diagnostic aid in discovering aortic lesions. In one of his patients the cardiac beat was sixty to the minute, and the man presented the unusual sight of counting off the seconds with his head. There seems to be no way of preventing or of stopping the shaking of the head. In honor of the poet Alfred de Musset, who suffered in this way, the author suggests calling this physical sign by his name.

Otitic Septico-pyæmia.—M. Georges Laurens says that the two prominent forms of otitic sepsis are: 1. With involvement of the lateral sinus, a thrombo-phlebitis. 2. No involvement of the lateral sinus, but a thrombo-phlebitis of the jugular vein and its intracranial branches. He points out that a phlebitis of the lateral sinus after an injury is very rare, and that frequently the sinus is intact while an abscess of the brain or an extradural abscess is formed in its immediate vicinity. The bacteria usually found are streptococci and staphylococci, especially the former in pure culture. The infection may take place by contiguity or by continuity through the veins. The principal accompanying lesions are a suppurative meningitis, cerebral or cerebellar abscess. The lungs may show metastatic pleural or pulmonary abscesses or foci of gangrene.

Thrombosis of the lateral sinus is ushered in by a chill, followed by a high temperature, intense headache, vomiting, and stiffness of the neck. The local signs of a mastoiditis are present, or there may be only an œdema due to a thrombosis of the mastoid vein. Cervical œdema is present if the jugular vein is simultaneously thrombosed, and the vessel can sometimes be felt as a hard cord. The vein is tender on pressure and gives rise to pain on rotation of the head. Hoarseness, dyspnœa, dysphonia, or dysphagia may arise, due to compression of the cranial nerves. The cerebral signs are those of an encephalitis. There may be excitement or depression and vomiting. An optic neuritis can almost always be demonstrated. The septic symptoms are those of an intense sepsis of any kind. Visceral, articular, and muscular metastases are common. Clinically, the disease may run the course of a septicæmia or of a pyæmia. Death is due (1) to an extension of the phlebitis, progressive cerebral œdema, and arrest of the intracranial circulation; (2) to meningitis, cerebral or cerebellar abscess; (3) to pyæmic metastases; (4) to general septic intoxication; (5) to pneumogastric paralysis, to hæmorrhage from the sinus, or to a phlebitis of the legs. A cure is rare.

Medical treatment is of no avail. Surgical treatment may involve trephining of the mastoid process and paracentesis; mastoid trephining and opening of the bed of the sinus; opening and cleaning of the sinus without complete mastoid trephining; ligation of the jugular vein at once; opening the mastoid with incision and complete mastoid trephining; ligation of the jugular vein; mastoid trephining, with incision and curettage of the sinus, and ligation of the jugular after the sinus is opened or before.

A pyæmia without involvement of the lateral sinus may follow an acute otitis media, with no osseous lesions. Metastases are uncommon and cure is common. A paracentesis is usually the only necessary treatment.

La Presse médicale, May 19, 1900.

Pneumographic Tracings as a Diagnostic Aid in Early Tuberculosis.—M. Hirtz and M. Brouardel have taken a large number of tracings of the respiration and find that normal breathing shows four distinct lines, a line of inspiration, a horizontal line showing the lungs filled, a line of expiration, and a line representing the lungs empty. In an incipient or beginning pulmonary tuberculosis, but three lines appear in the graphic tracing, that representing the period of the empty lungs having disappeared. The line of expiration is prolonged and the line of inspiration is often lengthened. These peculiarities last through all the stages of the disease. The authors have not found these tracings in any other pulmonary disease.

The Plague and the Venice Conference of 1897. By M. J. Lochelongue.

Diagnosis and Treatment of Tonsillar Ulcerations. (Review.)—M. Brindel and M. Raoult advise as a prophylactic treatment of ulcerative lacunar amygdalitis. discission of the tonsil or its extirpation. As curative measures, they recommend a spray of chloride of zinc, 1 to 15 or 1 to 30, and an alkaline gargle. For membranous or pseudo-diphtheritic amygdalitis, antiseptic gargles and painting the affected surfaces with tincture of iodine, formalin, or camphorated menthol. The internal administration of chlorate of potassium is also advised. The treatment of ulceration following the infectious diseases, such as diphtheria and typhoid fever, is mainly prophylactic, and antiseptic after its appearance. In chronic tubercular amygdalitis, partial extirpation may be undertaken.

The authors group under the heading of symptomatic ulcerations, lupus, scrofulo-syphilitic inflammation, syphilis, and malignant growths. Syphilis of the tonsil may appear as a chancre, as mucous patches, as tertiary ulceration, or as a gumma. A chancre is not uncommon, and is accompanied by cervical adenopathy, in which it differs from lupus. Its characteristics are the same as those of chancres elsewhere. Mercurial treatment is to be started as soon as the diagnosis is certain. All irritants, such as tobacco or alcohol, must be forbidden.

Le Progrès médical, May 19, 1900.

So-called Pernicious Dysenteric Fever.—M. S. Kanelli and M. J. Cardamatis conclude, from a study of a number of cases, that the disease is not an essential morbid entity and that paludism can not produce an essential dysenteric catarrh. If malaria is present in a case of dysentery, it runs its own course, as does the dysentery, although a preceding malaria may create a favorable soil for the development of the other disease. The two diseases have, however, nothing in common, and the so-called pernicious dysenteric fever should be eliminated from the list of malarial diseases and should be called a complication of paludism with a dysenteric catarrh.

La Province médicale, May 19, 1900.

Syphilis of the Umbilical Cord.—M. Commandeur narrates the case of a child prematurely born, the placenta showing signs of syphilitic degeneration. The umbilical cord showed a degeneration of the internal vascular coat containing fibroid tissue with fusiform cells, a rarefaction of the mucous tissue in the perivascular layer with an increase of mucin in the alveoli, and a density of the fibrous tissue of the perivascular layer. The muscular sheath was intact. Owing to the fibroid infiltration of the tunica intima, the lumen of the vessels was diminished. The vascular lesion is the most common, as it was in this case, the periarteritis is most rare, while alterations in Wharton's jelly and in the amniotic sheath are very uncommon. The cord in the case reported ruptured during birth, an accident due to the endarteritis and the degeneration of the connective tissue.

Influence of Persulphate of Sodium upon the Nutrition. By M. J. Nicolas.

Gazette hebdomadaire de médecine et de chirurgie, May 17, 1900.

Bronzed Diabetes.—M. Gilbert, M. Castaigne, and M. Lereboullet report two cases of *diabète bronzé.* In reviewing their cases they conclude that the diabetes is the result and not the cause of the accompanying hepatic cirrhosis, which, in their judgment, is due to augmented function of the liver cells. The disease runs a comparatively benign course, and should be regarded as the effect and not the cause of a pigmentary cirrhosis of the liver. This belief is based upon the presence of the usual signs of hepatic insufficiency, of azoturia, of a slow icterus, and true biliary pigment in the blood serum, together with a hypertrophic condition of the liver.

Gazette hebdomadaire de médecine et de chirurgie, May 20, 1900.

Alcoholic Hypertrophic Cirrhosis with Diabetes.—M. A. Gilbert and M. P. Lereboullet report two cases of this condition, in one of which the patient remained under stringent treatment and abstained from alcoholic drinks, with the result of an almost total disappearance of his glycosuria. The other patient did not follow up his treatment and continued his alcoholic excesses, dying in diabetic coma. The authors draw the inference, therefore, that the cirrhosis played an important part in the production and maintenance of the diabetes. They base this interpretation upon the hypertrophy of the liver with a coincident evolution of the glycosuria and the hepatic affection in the absence of signs of hepatic insufficiency.

Fatal Hæmatemesis from Œsophageal Varices.—M. G. Müller reports a case of a man of intemperate habits who died from hæmatemesis. At autopsy, death was found to be due to the hæmorrhage from large varices in the œsophagus, one of which was located at the pharyngeal end of the gullet, the other at the cardia. The author believes alcoholic excess to be accountable for the varices, which were located at the two points in the œsophagus which would come into contact with the liquor most intimately. There was no cirrhosis of the liver, but this organ showed a marked fatty degeneration.

Lyon médical, May 20, 1900.

Physiological Intersystole and Overlapping of Systole. By M. L. Bard.—(Continued article.)

Contribution to the Study of Tri-acetyl of Morphine.—M. Chanoz finds by animal experimentation that this derivative of the alkaloid corresponds in its general physiological action to morphine, with some qualitative and quantitative differences.

Centralblatt für innere Medicin, May 12, 1900.

Nephritis in Varicella. By Dr. Hans Haenel.—A case is related which is remarkable only for the fact that the albuminuria preceded the outbreak of the rash, although noteworthy prodromes are rare in varicella except in cases of unusual severity. The occurrence of nephritis in connection with varicella is not in itself very rare, as the author shows by reference to the literature of the subject.

Wiener klinische Rundschau, May 13, 1900.

Two Rare Cases of Perforation into the Bladder.—Dr. J. Pollitzer narrates a case in which a sequestrum following a coxitis worked its way into the bladder of a boy of twelve years of age, who died of pyæmia. He was suspected to have had a gonorrhœa, but his history was negative in this respect, although some intracellular cocci were found in the profuse urethral discharge. The autopsy showed that the pyæmia had originated in paraurethral and periurethral abscesses which were evoked by the presence of a sharp, incrusted, sequestrum in the bladder, the end of which lay in the vesico-urethral opening. The sequestrum had come from a coxitis which had run its course. (To be continued.)

Surgical Treatment of Pulmonary Gangrene.—Dr. Fritz Bemdt relates a case in which a resection of the eighth rib was made and the underlying tissues incised for a distance of about two inches and a half. About a quart of foul, necrotic lung tissue at once poured out from the wound. The cavity was so large that its walls could not be reached by the hand. The cavity was packed with sterile gauze and the patient made an excellent recovery. The second patient died under a similar treatment, the pulmonary involvement being much greater. (To be continued.)

Uterine Perforation in Gynæcological Operations.—Dr. R. von Braun-Fernwald continues his review of the literature of the subject and finds that even in the recently introduced steam cauterization of the uterus a perforation of the uterine wall has been recorded. He believes that in the case of experienced operators the walls of the uterus are to blame for the accident. The puerperal uterus, especially if it is septic, is most easily perforated. This is particularly true of a uterine mole, as the vesicles sometimes extend up to the peritonæum itself. The author says that it is easy to understand the facility of perforating a puerperal uterus, or one the seat of a malignant growth, if the neoplasm extends through the wall to the peritonæum, but there are other cases in which the accident happens unexpectedly, as in a case of metritis, or in a retroflexion in which the stasis renders the wall succulent and soft. Some instruments are so constructed that a perforation is easy of achievement, and some authors regard subinvolution and atrophy of the uterus as predisposing causes. (To be continued.)

Wiener klinische Rundschau, May 20, 1900.

Artificial Ankylosis (Arthrodesis) in Flail Joints after Essential Paralysis.—Dr. H. Propper reports a case of a boy of seven years of age who, after an attack of anterior poliomyelitis, developed a pseudo-arthrosis of the hip and knee joints of both sides. There was paralysis of the entire right lower extremity. He was unable to move except by crawling. The reaction of degeneration was present in the muscles of both legs. Artificial ankylosis by fixation with needles was produced in the ankle and knee joints of both extremities in two sessions, the legs being subsequently enveloped in plaster of Paris. The result was satisfactory, the child being able to balance himself with some effort and to walk with the aid of crutches. In cases of this character the production of a stiff joint, either by the induction of suppuration in the joint or by the use of fixation needles, is the only means of enabling the patient to transport himself.

Uterine Perforation in Gynæcological Operations. (Conclusion.)—Dr. Richard von Braun Fernwald says that the diagnosis is always easy. When the sound or curette penetrates further than the known depth of the uterus the suspicion of a perforation must always be borne in mind. In an aseptic case, rest and watching of the patient may be all that is necessary. Even in a septic case, one may wait until threatening symptoms arise, when a total extirpation must be undertaken at once. An intra-uterine injection must never be given. If the intestine is drawn down, it may be returned if uninjured and the uterine cavity packed. If the intestine is punctured, laparotomy must be performed at once with repair of the gut. In septic cases, the uterus must always be extirpated by the vagina, in order that its septic contents may not soil the peritoneal cavity. The author reports four cases, one of them due to an adeno-carcinoma of the fundus. He urges great care in the minor operations involving the cavity of the uterus, as a perforation may take place most unexpectedly.

Perforation of the Bladder. (Conclusion.)—Dr. J. Pallitzer's second case is that of a young infant in whom there arose an inguinal adenitis after a ritual circumcision. This gland suppurated and the pus found its way into the bladder. The child died. The pus had burrowed into the pelvis and entered the bladder in this way. The author has collected four other cases from the literature in which the pus from suppurating inguinal glands found its way into the pelvis without, however, reaching the bladder.

Prager medicinische Wochenschrift, May 10, 1900.

Prophylactic Immunization of Sick Children against Diphtheria.—Dr. Hugo Kraus records that in the Children's Hospital in Prague a diphtheria epidemic broke out in the scarlatina ward. In all, forty-four children received immunizing doses of diphtheria antitoxine, and of this number but two contracted the disease. (To be continued.)

Voluntary Lid Closure with Simultaneous Movement of the Eyes. By Dr. H. G. Hering.

Additions to the Austrian Pharmacopœia. By Mr. Theodore Münzberger.

Wiener klinische Wochenschrift, May 17, 1900.

Psychic Disturbance of Defæcation.—Dr. A. Pick relates the case of a neurasthenic man who since the time of his youth was unable to defæcate if other persons were near. Later, the same inhibition attended his urination, and he found he was unable to have a stool if he thought about it. When, however, he counted or concentrated his mind upon something else, the stool came easily. Dr. Pick regards the symptom as an hysterical stigma. It may appear, however, in any form, from the mildest temporary inhibition in the presence of strangers to absolute impossibility of performance.

Resuscitation after Suffocation, Chloroform Poisoning, and Electric Shock.—Dr. J. Prus arrived at the theoretical conclusion that healthy human beings who were suddenly apparently killed by asphyxiation, electricity, chloroform, or other poisons, could be resuscitated by artificially imitating the conditions in which higher organisms are accustomed to live. These conditions can be simulated by artificial respiration and by an artificial circulation of blood. The former may be accomplished by the various well-known methods, while Prus found in his experiments that the circulation can be artificially stimulated most closely and most certainly by rhythmical pressure of the finger upon the *exposed* heart, for only in this way is it possible to evoke a systole and a diastole of the heart. By experiment, the author proved that his theory works in practice. He was able to resuscitate animals after suffocation after an apparent death of an hour by means of massage of the exposed heart, artificial respiration, and an infusion of normal salt solution into the femoral artery. Seventy per cent. of his experiments were successful. Of twenty-one experiments with animals in which the pulse and respiration were stopped by chloroform, the author successfully resuscitated sixteen, or seventy-six per cent. In some instances an hour had elapsed from the moment of death to the time of beginning the massage of the exposed heart. (To be concluded.)

Contribution to the Technics of Alexander's Operation.—Dr. Guido v. Török advocates opening up the inguinal canal whenever Alexander's operation is done, in order to secure perfect motility of the round ligament.

He passes the sutures as follows: through the aponeurosis of the external oblique, the deep muscular layers, the round ligament, a portion of Poupart's ligament and the cremaster muscle, and finally the aponeurosis of the external oblique. It is important to close the inguinal canal so that a hernia shall be avoided.

Berliner klinische Wochenschrift, May 14, 1900.

Fundamental Considerations of Pathogenesis.—Dr. F. Martins, in an elaborate review of the changing views of pathogenesis in this century, concludes that the problems of the twentieth century involve a critical "constitutional" pathology for the elucidation of the weighty considerations of heredity, diathesis, individual prophylaxis, and racial hygiene in their pathological relations to disease.

Production and Excretion of Oxalic Acid.—Dr. E. Salkowski shows that, aside from the oxaluria due to metabolism, alimentary oxaluria, the amount of oxalates in the urine can be appreciably increased by the ingestion of oxalate of calcium. In meat and liver, as well as in some wines, he has found oxalates, so that the presence of these salts in normal or in increased quantities may be due to the digestion of these foods, although the quantities contained are so small that he does not attribute importance to their ingestion.

Diagnostic Value of Bronchoscopy in Carcinoma of the Lung.—Dr. G. Killian reports a case of carcinoma of the right upper lobe of the lung in which the picture as seen by the bronchoscope agreed perfectly with the Röntgen picture. Some errors were made, but these he attributes to anatomical peculiarities, the main bronchus of the upper lobe not always taking a horizontal course, but sometimes dipping downward and outward. Killian is convinced that chronic focal diseases of the lung can be unmistakably diagnosticated by the aid of the bronchoscope.

Reflex Irritability of the Nasal Mucous Membrane in Anæsthesia.—Dr. F. Bruck denies the well-known assertions of Rosenberg that full cocainization—that is, anæsthesia—of the nasal mucous membrane can be achieved by a nasal spray, and that the nasal cavity in its entirety can be thus anæsthetized. He believes that if the cocainization of the nose is undertaken preliminary to anæsthesia (as recommended by Rosenberg as prophylactic of cardiac paralysis through anæsthesia of the peripheral ends of the trigeminus nerve in the nose), it is best achieved by packing both nostrils tightly enough to exclude the air, with cotton saturated with the ten-per-cent. cocaine solution. The author recommends this measure, although he does not appear to be firmly convinced that the danger of chloroform anæsthesia lies in the nose.

Wiener medizinische Blätter, May 17, 1900.

Surgical Treatment of Basedow's Disease. (Continued article.) By Dr. J. Schulz.

Treatment of Chlorosis and Anæmia.—Dr. Victor Reichsberg recommends sanguinal very highly in the treatment of anæmia and chlorosis. Sanguinal contains ten parts of chemically pure hæmoglobin, forty-six parts of the normal blood salts of the human blood, and forty-four parts of muscle albumin. Each pill represents about seventy-five grains of fresh blood, the preparation being sold in pill form. The author has achieved good results with sanguinal during the past four years not only in anæmia and chlorosis, but in scrofulous conditions, lymphatic diseases, in neurasthenia, and hysteria. It is a stable preparation.

Deutsche Medizinal-Zeitung, May 21, 1900.

Prophylaxis of Tuberculosis in Children's Hospitals.—Dr. W. Kühler says there are some minor points of difference in the treatment of tuberculous adults and of children in hospitals. He urges the separation of children suffering from pulmonary tuberculosis, in the wards as well as in the sun baths and the salt baths. Children with local tuberculosis are not dangerous companions if the local process is treated with strict asepsis. Their bed linen must be changed as soon as it is soiled by pus and the bath tubs they use must not be used for non-tubercular children. Sputum must be caught in basins or cups. The sun baths and salt-water baths are prophylactic in that weak and scrofulous children are rendered more resistant to the tubercle bacillus, and that sources of infection, such as fistulous openings, are often cured. He believes that children suffering from local tuberculosis should be kept in the hospital until they are completely cured.

Deutsche Medizinal-Zeitung, May 24, 1900.

The Abortion of Pneumonia.—Dr. J. Paffrath says that he has never failed to abort beginning pneumonia in two or three days, and the severest double pneumonias in from five to six days, by administering six to seven grains of acetanilide with three to four grains of Dover's powder every four hours day and night. He is inclined to disregard the bacterial origin of pneumonia and believes it to be purely an inflammatory process. The powders of acetanilide and Dover's powder are given according as the fever diminishes. They are stopped at once if there is a drop in the temperature, and given again if it rises. He has never seen collapse or other dangerous symptoms from the use of the acetanilide.

Influence of Mineral Baths on the Osmotic Pressure of the Blood. By Dr. Henry Hughes.

St. Petersburger medicinische Wochenschrift, May 19, 1900.

Characteristics of Paralytic Thorax.—Dr. David Rothschild describes the thorax paralyticus as a hereditarily poorly developed chest wall, which, according to experience, shows a tendency to the acquisition of phthisis, but it must not be confused with other forms of chest wall due to emaciation or disease. It is best determined by comparative measurements with a healthy chest. Thus, in a healthy chest, the circumference equals one half the bodily length—in phthisical persons it is less; in the former the height of the sternum is one fifth the circumference of the chest—in the latter it is less; in the healthy, the height of the abdomen is two fifths of the chest circumference—in those with a paralytic thorax it is the same; in the healthy, a line from the xiphoid to the umbilicus is equal to a line from the umbilicus to the pubes, while in the condition under consideration the former line is longer than the latter. In healthy persons, the sternal angle is from thirteen degrees to sixteen degrees, while in those with a thorax paralyticus it is never more than eight degrees.

Klinisch-therapeutische Wochenschrift, May 20, 1900.

Action of Oil of Gaultheria.—Dr. E. von Rottenbiller has tried the oil of gaultheria in a hundred and twenty-two cases of arthritis of various kinds, with uniformly encouraging results. When combined with suitable balneotherapy, the patients were cured more rapidly than when treated with baths alone. He administers the drug in capsules, each capsule containing eighteen drops of the oil. He gives two capsules at a time, beginning at the hour of retiring, two one hour later, and two more during the night. Not more than two drachms are administered during twenty-four hours.

Erythromelalgia.—Dr. Max Kahane says that the main features which characterize this disease, which is now to be regarded as a clinical entity, are a peripheral localization, attacks of congestive hyperæmia accompanied by neuralgic pain. Erythromelalgia belongs to the group of acropathies, which require (1) that the disease attack the most peripheral parts of the body, furthest removed from the centres of circulation and innervation; (2) that these parts shall be provided with very fine nerves and blood-vessels; (3) that the most intimate relations shall exist between the nerves and the vessels, so that changes in either shall influence the other, or that both may come under the simultaneous influence of a central lesion. Rest, elevation, and cold applications, hydrotherapy, massage, the faradaic and galvanic currents, and many internal drugs have been recommended for treatment.

Riforma medica, April 27, 1900.

New Menstrua for the Enumeration of Red Blood Cells by Thoma-Zeiss's Method. By Dr. Gaetano La Rosa.—The writer experimented with various solutions in order to determine what menstruum is best suited for mixing with blood for the purpose of counting the red cells in the Thoma-Zeiss apparatus. He used the following solutions:

1. ℞ Mercuric bichloride 1.00
Sodium chloride, pure 0.70
Distilled water 100.00
M. Ten drops in ninety of distilled water.

2. A 1-to-4,000 solution of osmic acid. 3. A 1-to-300 solution of picric acid. 4. A 1-to-150 solution of tannic acid. 5. Lugol's solution, as used by Petrone, for counting red blood cells. 6. Acquisto's fluid, first used by Dotti, which consists of:

℞ Solution of 1.5 gramme of chromic acid in one hundred of distilled water,
Picrosulphuric solution,
Solution of mercuric bichloride (1-to-1,000) in distilled water,
} of each, 1 part;
Shake and filter, then add—
Mixture of absolute alcohol and glacial acetic acid (1 to 3) .... 1 part.

The writer's observations included a large number of healthy individuals, as well as patients with anæmia, chlorosis, ankylostomiasis, and so forth. In all cases the outlines of the cells appeared distinctly when one of the before-mentioned fluids was used, a circumstance which considerably facilitated the count. Nearly all the solutions employed enabled the writer to count the blood plaques. In order to control his experiments, he examined the blood of the same cases, using normal salt solution to mix the blood in the pipette, and found that the same number, or a little smaller number, of corpuscles could be counted by this method. He concludes that the new menstrua are superior to the salt solutions, inasmuch as they do not alter the contour of the red cells, and serve to distinguish the blood plaques.

Riforma medica, April 28, 1900.

On the Visual Centres in the Brain Cortex. By Dr. Arnaldo Angelucci.

Vratch, April 22, 1900, O. S.

On the Treatment of Paralyses. By Dr. I. V. Zabloudovsky.—Methodical exercise, consisting of passive or active motions, is without doubt the essential part of the treatment of paralytic affections. Every method which tends to simplify these exercises and to popularize their use among physicians is a step in advance in the rational treatment of paralyses. The writer called attention to the value of massage and gymnastics in locomotor ataxia in 1883. He uses principally the interrupted pressure upon the affected parts, and makes the patient execute voluntary movements at the same time at the physician's command. At first these movements are scarcely perceptible to the eye, but gradually they grow stronger as the powers of the paralyzed limb improve. He insists on the interruption of every motion, however simple, into several stages, with momentary rests between each. The simultaneous massage increases the nutritive exchange in the part and removes the products of muscular activity. Passive motions are best obtained in the paretic or paralyzed limb indirectly; for instance, in active flexion of the hip and ankle one obtains indirectly a flexion of the knee. Massage combined with motions also has another function. If, for example, one hand pulls at the ankle and the other kneads the knee, or performs *tapotement* of the thigh, or if, kneading the knee with both hands, one tries to produce extension in the joint by pressing upon its extensor surface, the patient will suffer very much less pain from the procedure than if the same movement were attempted without massage. In addition, the patient is made to perform movements against resistance, the motions in each instance being interrupted, as described before. The sitting should last fifteen to twenty minutes, longer sittings having the disadvantage that willful impulses are not as strong toward the end, and the patient's attention can not be concentrated upon the exercise. In conclusion the writer discusses the lack of uniform terminology on the subject of massage and therapeutic gymnastics.

On the Diet of Farm Laborers. By Dr. V. V. Chijniakoff. — The writer points out that there is a large class of the population of Russia that consists of farm laborers who do not own a foot of soil, but are hired by one landowner or another, wandering about in search of work when they are not busy. This class of people is analogous to the hired "factory hand," and the writer believes that the economic and sanitary laws which exist for factory operatives should be made applicable to the hired "farm hands," with such modifications as the peculiarity of their life and occupation demand. At present the helpless position of the farm laborer toward his master and landowner is unbearable, and a reform is urgently needed. The writer then proceeds to describe the diet of the farm laborers in one of the provinces of southern Russia, which he takes as a type.

He finds that there is not sufficient variety in the diet of the farm laborers. The allowance for each person is not always sufficient, and the food lacks in fats and animal proteids, while they receive twice the amount of carbohydrates that is necessary under ordinary conditions of life. The result is that the intestine is overloaded with material which is digested with difficulty, and the organism is not supplied with the food which is required in persons who are engaged in such severe muscular labor as these farm hands. He also says that the quality of the food, the cleanliness of the vessels in which it is prepared, and the purity of the water which the laborers are obliged to drink leave a great deal to be desired, and recommends the regulation of these matters by law. A systematic sanitary inspection of the farms must be instituted, in order to secure the enforcement of such a law, in the same way as factories are now inspected to determine whether the sanitary conditions are such as are favorable for the employees.

Medical Statistics of Taschkent. By Dr. Schwartz. (Continued.)

Klinitchesky Journal, April, 1900.

The Operative Treatment of Ascites in Cirrhosis of the Liver. By Professor V. Chervinsky.—The writer speaks of the hopelessness of ordinary therapeutic measures in dropsy due to cirrhosis of the liver, and reports a case which was operated upon with the view of establishing collateral circulation from the portal system, and thus to relieve the congestion of the abdominal organs. The patient was a woman, aged thirty-eight, with atrophic cirrhosis of the liver. After all other methods had been tried, the author remembered that Talma, of Utrecht, suggested that new avenues be opened for the portal blood in such cases by means of operative interference. Von Eiselberg and Morrison have since then reported cases where such operations were performed with good results. Professor A. A. Boboff performed the operation on the present case in November, 1899.

Under cocaine anæsthesia a longitudinal incision about five centimetres in length was made, the peritonæum opened, and a quantity of fluid allowed to escape. The endothelial lining was then scraped from the surface of the peritonæum near the incision with a sharp spoon. The omentum was then sutured to the upper and lower angles of the wound, the suture going through the abdominal wall, the peritonæum, and through part of the thickness of the omentum. The abdominal wound was then completely closed by interrupted sutures. The operation lasted but fifteen minutes. The recovery was uneventful. After the operation the patient began to gain in weight and strength, and the superficial veins around the umbilicus became enlarged. There was a slight amount of fluid in the abdomen. The author concludes that a certain amount of collateral circulation has been established, and the portal vein relieved from a portion of its work by this operation.

The Present Condition of National Sanatoria for Consumptives. By Dr. F. A. Getje.—The author speaks of the great mortality from tuberculosis in Russia, and pleads for the establishment of more sanatoria for consumptives which should be accessible to the poor. At present there are but two in the whole empire—that at St. Petersburg, supported by the Society of Russian Physicians, which is free, but only contains twenty beds; and the large Imperial Sanatorium "Chalila," in Finland, which is in charge of Dr. J. G. Gabrilovitch. The author points out how much has been done in Germany in the way of establishment and maintenance of sanatoria for tuberculous patients in contrast to the inactivity which prevails in Russia on this question.

Psychoses in Twins. By Dr. S. Souchanoff.—The writer analyzes the cases of psychic disease in twins which are found in literature since the case reported by Rush in 1812. The form of insanity found in these patients varied considerably in the descriptions of the different authors. Mania, alternating melancholia and mania melancholia, maniacal dementia, melancholic dementia, hallucinatory insanity, delusions of persecution, circulatory insanity, idiocy, imbecility, congenital weak-mindedness with or without delirium, and progressive paralysis have been observed in twins. The author reports two cases of dementia præcox in twins, aged thirty-three years. The occurrence of such cases shows that nervous systems and brains which have the same physical constitution will act in the same way under given pathologic conditions. The writer also emphasizes the influence of heredity in psychic affections, an influence which is particularly well shown in many cases of insanity in twins.

Concerning the Influence of the Position of the Body upon the Frequency of the Heart's Action. By A. Langovogo.—The writer summarizes his findings in the following conclusions: 1. In a healthy person the pulse always increases in frequency after a change from the horizontal to the vertical position. 2. This increase in frequency is explained by the influence of (*a*) the contractions of those muscles which are necessary to maintain the body in the vertical position; (*b*) a fall of the intracardiac and arterial blood pressure, acting reflexly upon the heart ganglia; (*c*) a fall of intracranial blood pressure depressing the inhibitory centres in the medulla oblongata. 3. The great variations in the frequency of the pulse which are noted in convalescents are due to the considerable alterations in blood pressure, especially in the brain, which probably depend upon the loss of tone of the arteries in debility from any cause. 4. In patients with lesions of the heart or arteries the changes in the frequency of the pulse which result from an alteration in the position of the body are governed by the same laws that pertain to healthy persons as long as the ganglia of the heart are susceptible of excitation. 5. This is usually observed in those cases where compensation is still good. 6. In rare cases the heart ganglia retain their irritability, although compensation is lost. 7. In very rare cases the heart ganglia lose their irritability, although compensation is still good. 8. In such cases the absence of increase in frequency of the pulse when the patient rises from a recumbent position, or the diminution of the pulse rate under these conditions, is a premonitory sign of approaching loss of compensation.

Bulletin of the Johns Hopkins Hospital, May, 1900.

Urinary Anomalies. By Dr. Thomas R. Brown.—The author describes a form of urinary anomaly, which he has designated by the term "simulative nephritis," occurring after certain simple operations upon the kidney. The urine being normal before operation, it was found that the day after a nephrotomy it was of specific gravity 1.022, contained many red and some white blood cells and epithelial cells, enormous numbers of casts of all kinds, a considerable quantity of albumin, but no sugar. In six days the urine had cleared up considerably, and in ten was almost normal, becoming quite so a few weeks later. It contained no micro-organisms. Associated with this urinary condition there had been absolutely none of the symptoms of a nephritis, no œdema of the legs, no ascites, no retinal symptoms, no more headache and nausea than would be expected after ether anæsthesia; while the quantity of urine voided was about the same as is usual after ether. There was a marked disproportion between the casts and albumin, the amount of the latter being much less than would be expected from the number of the former.

Six other observations are referred to. Early examination is essential. "We have evidently four factors distinctly involved in the production of this condition: 1. The handling of the kidney, usually quite slight, except in the first case, in which a nephrotomy was also performed, and where the cylindruria and albuminuria persisted for a much longer period of time. 2. The taking of the stitches through the renal substance, and, in the first case, the trauma necessary in an exploration of the renal pelvis. 3. The irritation of the renal tissue by the ether, that is in part eliminated by means of the kidneys—a well-recognized condition, as shown by the fact that a definite nephritis occasionally develops after protracted operations under ether anæsthesia, this point having been gone into in detail very recently by Gallieazi and Grilo (*Giornale d. R. Accademia di Torino*, 1899, p. 293). 4. The diminution in the elimination of fluids which is almost invariably seen after ether anæsthesia, and which undoubtedly subjects the kidney to a greater chance of becoming diseased. Probably in development of this 'simulative nephritis' all these factors play a part, although the stitching and handling are probably of most importance, as evidenced by the fact that the urinary condition was so much more marked and persistent in the case where the trauma and handling were greatest—viz., the first case, where both a nephrotomy and a nephropexy were performed."

Post-operative Glycosuria.—The author next reviews the various forms of transitory glycosuria and reports three cases of transitory glycosuria following upon ether anæsthesia. He considers the condition a toxicogenic glycosuria, with possibly also a neurogenic factor in the two later cases, and suggests examination of the urine after operation to see what proportion of neurotic patients under ether develop the condition.

The author's third subject he terms "malingering mellituria." An hysterical girl, a hystero-epileptic, appeared to have diabetes mellitus, passing between four thousand and seven thousand cubic centimetres of pale urine of specific gravity between 1.030 and 1.050. Examination, however, led to the suspicion that the sugar was not glucose, but ordinary cane sugar.

"To determine this definitely, chemically, before attempting to discover its source, the following experiments were performed: The urine was concentrated and boiled with dilute hydrochloric acid for from twenty to forty minutes, when the resulting fluid, after being neutralized with bicarbonate of sodium, gave the following reactions: By Fehling's test the reaction was extremely marked and instantaneous, differing in this respect from the much slower and less characteristic reaction or the complete absence of reaction noted before; by the phenylhydrazin test the precipitation of the phenylglucosazon crystals was profuse; by the polariscopic test, on the other hand, the plane of polarization was turned slightly to the left; while in the fermentation tube the gas formation was much more rapid than before and the reaction was more marked than with the original specimen.

"All these tests showed conclusively that the sugar present was cane sugar, the reactions just given depending, of course, upon the fact that cane sugar when boiled with acids is converted into a mixture of glucose and lævulose (one dextro-rotatory, the other lævo-rotatory), and the reactions given above are exactly those that would occur in such a mixture, while the extreme slowness of fermentation of the original urine was explained by the fact that cane sugar, in the presence of the yeast ferment, was first converted into glucose and lævulose, the former of which then underwent fermentation.

"As the girl was extremely hysterical and neurotic, and as the passage of such large quantities of cane-sugar in the urine is practically unknown, it was thought that she herself probably introduced the sugar into the urine. All sugar was therefore carefully kept off her food tray, and for a time the sugar entirely disappeared from the urine and the specific gravity dropped to between 1.006 and 1.010, although the polyuria continued. In a few days, however, the sugar reappeared, although not in such quantities as before; a nurse was then detailed to watch the patient most minutely, when it was found that the patient would slyly remove the lumps of sugar from her tea or coffee and deposit them in the urinary vessel."

Eliminating this source of sugar supply, the mellituria ceased. The patient left in high dudgeon when confronted with the evidence of her deception, denying the nurse's statement. The author makes the following weighty comment bearing upon the perniciousness of the half knowledge so widely disseminated in the present day:

"In these days, when the advertising column of every newspaper is a treatise on diagnosis, and every hillside and vacant lot a manual of therapeutics, it is no wonder that the little and often the distorted knowledge that is so dangerous has proved a fruitful source of hypochondriasis, neurasthenia, and malingering among οἱ πολλοί; but, so far as I know, this is the first case in which it has brought about a malingering mellituria."

Acute Leucæmia in Childhood, with Report of a Case. By Dr. Thomas McCrae.—"In considering this case a striking feature is the rapid course. The patient, a boy aged three years, was admitted to the hospital almost accidentally—if one may so term it—on May 11th, and beyond the presence of enlarged tonsils and adenoids he seemed, on superficial examination, to be in ordinary good health. Had it not been for the results of the blood examination, no suspicion of leucæmia would have been entertained. There were no symptoms pointing to acute disease, and his father was sure as to his having been in his normal condition up to a few days before. From the time of admission to the hospital until death was less than three weeks. Including the few days of malaise previously, the whole course was not over four weeks. Even when the first blood examination was made, the possibility of the case being one of extreme lymphatism was considered, although the high percentage of lymphocytes (86.5) suggested leucæmia. In his condition any attempt to remove the adenoids and enlarged tonsils was thought unadvisable, even though they caused considerable obstruction. About May 18th the general condition changed and the symptoms were more severe. The blood showed 99.2 per cent. of lymphocytes and the hæmorrhagic rash had appeared. The temperature ranged higher, and from this to the time of discharge the downward course was rapid. Death occurred on May 30th.

"In regard to the blood condition a relatively high proportion of the hæmoglobin to the red corpuscles is seen."

Treatment at present can be only symptomatic. The author emphasizes the necessity of a careful study of the anæmias of early life.

Personal Experience in Plastic Operations for Stone in the Bladder. By Dr. A. T. Cabot.—The author argues from his own prolonged experience in favor of litholapaxy in preference to lithotomy whenever practicable, save as previously stated by him in 1889 in the presence of one of the following conditions: 1. A very large and hard stone may resist every attempt at crushing, especially if it is tightly grasped by the spasmodically contracted bladder. 2. A stone may have as a nucleus a foreign body, such as a piece of necrosed bone or a bullet, too hard to crush and too large to pass out through a tube. 3. An encysted stone may be out of reach of the lithotrite. 4. False passages may exist, which so interfere with the introduction of instruments that the dangers of the operation are greatly enhanced, and the question of lithotomy is to be entertained. 5. The hip may be ankylosed in a position which interferes with the use of urethral instruments. 6. A stone may be so lodged in the prostatic urethra that it can not be pushed back into the bladder where it can be seized by the lithotrite. 7. When the constant recurrence of the stone makes it seem probable that an ulcerated patch exists in the bladder and is leading to a calcareous deposit, the suprapubic operation is required for the removal of this local condition. 8. In the presence of an obstructing prostate the suprapubic incision will sometimes be advisable, with the object of removing the obstruction. The removal of the stone is merely an incident in this operation. He has seen no reason, with added experience, to change this opinion except so far as is set forth in the present paper, in relation to cases of coincident bronchitis or other condition making etherization dangerous. The author thinks that a mortality of four per cent. in a series of cases averaging sixty years of age is considerably less than could be expected from suprapubic lithotomy in a similar class of patients, and that the avoidance of fistulæ and the shortened convalescence add decided advantages to this method of operating.

University Medical Magazine, May, 1900.

Coccygodynia. By Dr. Barton Cooke Hirst.—Dr. Hirst's notable contribution seems likely to restore to coccygodynia something of the prominence that it held in the eyes of gynæcologists a few years ago. He regards the disease as almost always of traumatic origin, or at least as resting on some structural lesion, and seldom if ever either rheumatic or hysterical. The operation for its relief should be that of complete removal of the coccyx. His method of performing it is as follows: The patient having been anæsthetized and placed in Sims's posture, the skin over the bone is cleansed. A straight incision down to the bone is made in the median line, extending from base to tip. The lips of the wound are held apart with retractors, and with heavy scissors, sharp-pointed and curved on the flat, all the soft parts are cut loose from the bone. The left forefinger, inserted under the bone, acts as a guide and protects the rectum. If the bone is ankylosed to the sacrum, the alæ of its first vertebral segment serve as the best guide to the situation of the sacrococcygeal joint, and the dissection must extend above this point. A chain saw is slipped around the bone and pushed up so that it takes off the tip of the sacrum. Usually only the median sacral artery requires ligation, and that is tied with catgut. A drain of five strands of silkworm gut is laid in the wound, which is closed with five or six silkworm-gut sutures. After a few weeks the scar is scarcely distinguishable. In cases that are of obstetrical origin the author would be inclined to wait for six months after labor, in the hope of spontaneous recovery, which he has known to occur in several instances.

Tumors of the Vermiform Appendix. By Dr. Aloysius O. J. Kelly.

Perforation in Typhoid Fever from an Operative Standpoint, with a Report of Cases. By Dr. Gwilym G. Davis.

Rhythmical Hysteria. By Dr. James Hendrie Lloyd.

Miscellaneous.

The Prevention of Valvular Disease in Acute Rheumatism.—Dr. Richard Caton (*British Medical Journal*, March 17th), at a recent meeting of the Clinical Society of London, said that fifteen years ago he decided upon a definite treatment with a view to the prevention of valvular disease in acute rheumatism, which had been followed ever since, and had been applied in nearly five hundred cases. These were treated in the ordinary manner by salicylates, cholagogues, and a light diet; the whole body, excepting the head, was clothed in flannel, and the patient kept in bed for some weeks; any lingering pains were dissipated by small blisters locally. The proportion of cases of valvulitis was under twenty per cent. The following signs were considered to indicate affection of the valve: *assourdissement*, going on to the development of a *bruit*, usually mitral, mostly systolic, but sometimes præsystolic, heard in the axilla, followed by accentuation of the second pulmonary sound; more rarely a diastolic *bruit* at the aortic cartilage. Treatment consisted in: 1. Absolute rest in bed for several weeks. 2. The application of a series of blisters, in size somewhat less than a florin, one at a time, in the course of the first, second, third, and fourth dorsal nerves; after each blister a small poultice was applied. 3. Sodium or potassium iodide in eight- or ten-grain doses was given thrice daily; in some cases small doses of mercury. The object of the rest in bed was to protect so far as possible the softened and weakened valve cusps from pressure. The object of the blisters was to stimulate the trophic nerves of the heart through the sensory filaments of its related skin area, and so to hasten repair and absorption, just as the reparative process in a joint was unquestionably stimulated by blistering the adjacent skin. The purpose of the iodides or mercury was to help absorption of the, at first, imperfectly organized inflammatory products in the cusps and endocardium. The treatment was of use only if commenced within the first two or three weeks. In long-standing cases it was absolutely useless. Setting aside all cases of slight transitory *bruit*, all cases of hæmic origin, and all that seemed due merely to a weakened and dilated ventricle, eighty-five cases remained for treatment. These were divisible into two groups: First, those which on admission into hospital had a *bruit*, probably, but not certainly, of recent origin. They numbered fifty-four; of these, thirty-four left hospital with hearts apparently sound, while twenty were believed to have valvular disease. Secondly, those in which the *bruit* and other signs of valvular disease came on in hospital, or in which the onset had been recently observed by the practitioner who sent in the case. They numbered thirty-one; of these, twenty-seven left hospital with an apparently sound heart, three with valvular disease, and one remained under treatment. One unsatisfactory point should be noted: if in a case apparently cured rheumatism recurred at an early date, the endocarditis generally recurred also, and, though sometimes it was again removed by treatment, more frequently it persisted. The author's experience of rheumatic endocarditis caused him to insist strongly on the two following principles: First, that every case of acute rheumatism should be regarded first and before everything else as a case of impending peril to the heart, endangering the whole future life of the patient. Whenever the heart was sound at the outset the practitioner should examine it daily. Secondly, in all forms of acute endocarditis there was a brief stage during which, if treatment was begun promptly, the disease was usually curable. In adults this stage probably lasted only two or three weeks; in children it was longer. In children, and to a less extent in adults, by persistent rest alone some cases recovered. In the author's opinion the proportion of recoveries was larger if the three measures above described were adopted and persevered in for at least six weeks. The *bruit* usually became soft, and, after being for a time variable, finally vanished. After disappearance of the *bruit* and other symptoms, avoidance of all active exertion was desirable for at least two months further.

Letters to the Editor.

THE ANTITUBERCULOSIS CRUSADE IN FRANCE.

16 West Ninety-fifth Street, New York, *June 1, 1900.*

To the Editor of the New York Medical Journal:

Sir: For light and example in the endeavor to solve the tuberculosis problem, we have been in the habit of looking to England and Germany as the countries where the combat against the Great White Plague is carried on with greatest vigor and energy. Recently, however, France has taken a great stride in the direction of fighting tuberculosis, and well may we endeavor to emulate her example. There has been a sudden great awakening to the danger of this dreadful disease, and to the fearful mortality from it among all classes of society. "Tous les ans, la Tuberculose tue 150,000 personnes en France: population égale à celle de Rouen ou de Nantes" (every year tuberculosis kills 150,000 people in France; a population equal to that of Rouen or Nantes) has become the battle cry. These words are printed as a motto on the title-page of a new journal which appeared as a result of the united efforts of a few enthusiastic laborers in the antituberculosis crusade. It is called *L'Œuvre antituberculeuse, Bulletin trimestriel des sanatoriums populaires et des sociétés de bienfaisance fondés en France pour la lutte contre la tuberculose et l'assistance aux tuberculeux pauvres,* and is published by Carré et Naud. The first number, dated April 30th, has just reached me. Among its editors and collaborators we read the names of Armainguad (Bordeaux), Arloing (Lyons), Spillmann and Hausalter, of Nancy, Landouzy, Dumarest, Letulle, Plicque, and Sersion, of Paris; and as patrons of the enterprise, Brouardel, Potain, Monod, Vallin, and Richard are mentioned.

On the second page the *Bulletin* outlines the method of the proposed combat in the following original manner, which I beg leave to reproduce in the form in which it appears in the journal:

NOS DÉFENSES		NOS ARMES
destruction des crachats (*destruction of sputum*)	LA TUBERCULOSE EST CONTAGIEUSE	logements salubres (*sanitary tenements*)
isolement des tuberculeux	LA TUBERCULOSE EST ÉVITABLE	anti alcoolisme
vie à la campagne	LA TUBERCULOSE EST CURABLE	sanatoriums populaires

Then comes an enumeration of the various societies of which the journal is the official organ—viz.: Bordeaux: Œuvre du Sanatorium girondin pour le traitement de la tuberculose. Cannet (Alpes-Maritimes): Colonie agricole pour indigents convalescents de tuberculose pulmonaire. Le Havre: Comité de Sanatorium Havrais. Le Mans: Œuvre du Sanatorium populaire manceau. Lille: Ligue de Nord contre la tuberculose (Society for the Prevention of Tuberculosis). Lyon: Œuvre Lyonnaise des tuberculeux indigents et du Sanatorium d'Hauteville. Nancy: Œuvre lorraine des tuberculeux. Orléans: Ligue de défense contre la tuberculose dans le département du Loriet (Society for the Prevention of Tuberculosis). Paris: Société anonyme des Sanatoriums populaires pour les tuberculeux adultes de Paris. Paris: Œuvre des enfants tuberculeux d'Ormesson. Paris: Œuvre de Villepinte. Bois-Colombes: Œuvre pour la prophylaxie de la tuberculose et le placement gratuit des indigents tuberculeux dans les Sanatoria. Rouen: Œuvre du Sanatorium Rouennais.

The first article is a warm appeal for help and unison in the work about to be undertaken. Of it I will translate only two sentences, but they speak volumes: "No enlightened mind can remain disinterested in the efforts which our country is making in the struggle against the disease which causes so many victims and carries with it so much misery, unhappiness, and ruin." "Whatever help can come to us we shall treasure highly, for our task is very difficult indeed."

Of other articles I will mention La Commission extraparlementaire de la tuberculose, by its secretary, Dr. Faivre. It speaks of the work and importance of this commission which will present its report to the French Government on the best means of combating tuberculosis.

There is one more article in this new journal which I must refer to, and I do so with pleasure. The article treats of the work of l'Œuvre Parisienne dite Société des Sanatoriums populaires pour les tuberculeux adultes de Paris, and publishes a subscription list, which was opened December 6, 1899, and has now reached the sum of 326,100 francs. The first subscribers were thirty-eight physicians, who contributed a total sum of 26,100 francs. In the institutions to be built by the Parisian society for the creation of popular sanatoria, the treatment will be entirely free to the consumptive poor.

Well might we be proud to emulate our French *confrères* who have thus given a noble example of their unselfishness and devotion to the cause of humanity.

S. A. Knopf, M. D.

UNILATERAL BRONCHITIS.

498 CLASSON AVENUE, BROOKLYN, *May 25, 1900.*

To the Editor of the New York Medical Journal:

SIR: Having had recently under my care a case of lateral bronchitis, I thought I would bring it to the attention of the medical profession, for, so far as my reading goes, no author has described such a condition. I saw Mrs. F. on May 7th, and found, on physical examination, an acute catarrhal inflammation involving the larger and medium-sized bronchi of the left side *only*. Sonorous and sibilant râles were well marked.

On the right side a normal condition was present, but there was slightly exaggerated respiration. The cough was severe and prolonged. By the third day subcrepitant and mucous râles were superadded to the affected side, and then the cough lessened in severity. Improvement gradually took place, and at the end of two weeks all abnormal symptoms had disappeared. During the course of the sickness the disturbance of the circulation was very slight. S. B. CHILDS, M. D.

BOOKS, ETC., RECEIVED.

Diseases of the Intestines. A Text-book for Practitioners and Students of Medicine. By Max Einhorn, M. D., Professor of Medicine at the New York Post-graduate Medical School and Hospital, etc. New York: William Wood & Co., 1900. Pp. xiv–391.

Crime and Criminals. By J. Sanderson Christison, M. D., formerly of the New York City Asylums for the Insane, etc. Second Edition. With an Appendix containing Analyses of the "Luetgert" and Other Noted Cases. Chicago: J. S. Christison, 1900. Pp. 3 to 177.

Brain in Relation to Mind. By J. Sanderson Christison, M. D., formerly of the New York City Asylums for the Insane, etc. Chicago: J. S. Christison, 1900. Pp. 7 to 143.

Christian Science Dissected. By A. D. Sector. St. Louis: The Christian Publishing Company, 1900. Pp. 61.

Traité de médecine et de thérapeutique. Publié sous la direction de MM. P. Brouardel, Doyen de la Faculté de médecine de Paris, etc., et A. Gilbert, Professeur agrégé à la Faculté de médecine de Paris, etc. Tome septième. Maladies du nez, du larynx, de la trachée, des bronches et des poumons. Par MM. Cartaz, Castex, Barbier, H. Barth, P. Claisse, Mosny, L. Landouzy, H. Triboulet, Grancher, Balzer, Méry et Le Noir. Paris: J.-B. Baillière et fils, 1900. Pp. vii–931.

Transactions of the New York State Medical Association. For the Year 1899. Volume XVI.

Eighteenth Annual Report of the Provincial Board of Health of Ontario. For the Year 1899.

Reparation to the Injured; and the Rights of the Victims of Crime to Compensation. A Paper prepared by Request for the Quinquennial International Prison Congress, Brussels, 1900. By William Tallack, of London.

Non-malignant Gastric and Duodenal Ulcers. With Illustrative Cases. By Thomas E. Satterthwaite, M. D. [Reprinted from the *Medical Record.*]

The Climate of Puerto Rico. By Charles J. Proben, M. D. [Reprinted from the *Atlanta Journal-Record of Medicine.*]

Ileus durch Strangbildung; Laparotomie, Lösung der Stränge. Nach drei Tagen wieder Ileus; zweite Laparotomie, Ileocolostomie, Heilung. Von A. Köhler. [Sonderabdruck aus der *Deutschen Militärärztlichen Zeitschrift.*]

The Treatment of Venereal Ulcers. By N. E. Aronstam, M. D. [Reprinted from the *Medical Age.*]

Miscellany.

Prizes of the French Academy of Medicine Open for 1901 to Foreigners.—The following list of prizes open for competition to physicians other than French is compiled from the *Presse médicale* for December 30, 1899. Essays must be sent in to the French Academy of Medicine before the end of February, 1901. They must be written in French or Latin. They should, with the exceptions denoted by an asterisk, be marked with a device and accompanied by a sealed envelope marked with the same device and inclosing the name and address of the author, the competitor's identity being strictly concealed. The same essay must not be submitted in one year to more than one competition. MSS., printed matter, and instruments submitted will not be returned to the author.

Prix de l'Académie: 1,000 francs. Subject: Partial epilepsy from a clinical and experimental point of view.

Alvarenga Prize: 800 francs. For the best unpublished work on any medical subject, at the option of the author.

*Prix Barbier: 2,000 francs. For the discovery of a perfected mode of cure of any disease commonly considered incurable—*e. g.*, cancer, epilepsy, etc. Awards will be made to those who, without having attained the end in point, have most nearly approached it.

*Prix Mathieu Bourceret: 1,200 francs. For the best work on the circulation of the blood.

*Prix Adrien Buisson: 10,500 francs. This prize will be awarded to the author of the best discoveries resulting in the cure of diseases recognized up to date as incurable.

Prix Capuron: 1,000 francs. Subject: On rigidity of the cervix uteri during accouchement, excluding that caused by cancer and fibroma.

*Prix Chevillon: 1,500 francs. For the best work on the treatment of cancerous affections.

Prix Civrieux: 800 francs. Subject: The rôle of alcohol in mental pathology.

*Prix Clarens: 400 francs. For the best manuscript or printed work upon hygiene.

Prix Daudet: 1,000 francs. Subject: The best surgical methods for employment in cancer of the breast.

*Prix Desportes: 1,300 francs. For the best work on practical medical therapeutics.

*Prix Ernest Godard: 1,000 francs. For the best work upon external pathology.

*Prix Théodore Herpin (of Geneva): 3,000 francs. For the best work upon epilepsy and nervous maladies.

*Prix Hugo: 1,000 francs. For the best work, manuscript or printed, upon some point of the history of the medical sciences.

*Prix Jacquemier: 1,700 francs. For the work effecting the most important progress in some obstetrical subject.

*Prix Laborie: 5,000 francs. For the most notable advance in the science of surgery.

*Prix du baron Larrey: 500 francs. For the author of the best work on medical statistics. This prize may be divided.

Prix Louis: 3,000 francs. Subject: Thyreoid medication.

Prix Mège: 900 francs. Subject: Pathogenesis of simple ulcer of the stomach.

*Prix Meynot: 2,600 francs. For the author of the best work upon diseases of the eyes.

Prix Portal: 600 francs. Subject: The lesions of the nerve centres caused by the tetanus toxine.

Prix Pourat: 700 francs. Subject: The circulation of the blood in the lung.

*Prix Philippe Ricord: 600 francs. For the best work that has appeared in the preceding two years upon venereal diseases.

*Prix Vernois: 700 francs. For the best work on hygiene.

The prizes marked with an asterisk are exempted from the regulation respecting secrecy, as published works as well as manuscripts are eligible in competition.

The Lancet on Proprietary Preparations. — The *American Practitioner and News* for April 15th quotes the following from the *Lancet* of unspecified date. The contribution is an interesting one to the vexed question of how far proprietary preparations may be justifiably used by physicians: "A correspondent draws attention to the real or supposed dangers of the frequency with which proprietary preparations are prescribed in lieu of the equivalents of the British Pharmacopœia. He says that wherever the fashionable physician goes he finds such preparations are taken by patients with as little hesitation as they take their meals. He considers this ruinous to the interests of the medical man, the dispensing chemist, and the patient. It is of course possible to argue that the interests of the medical man and the dispensing chemist suffer from the frequency with which the laity attempt to treat slight ailments without skilled assistance; but this natural tendency of every man to attempt to be his own medical adviser commonly entails subsequent prolonged medical attendance owing to an initial error of diagnosis. In other words, it might be argued from interested motives, that proprietary preparations are blessings in disguise, a contention which we should deem unworthy of any professional man. It is perfectly true that many of the advertised preparations can not in ignorance be used with impunity, and it is the duty of every practitioner to speak with no uncertain voice of the possible dangers of self-medication. On the other hand, it is probable that the growth of the use of such proprietary preparations by medical men was in the past fostered by the difficulty of remembering the pharmacopœial doses, a difficulty which was evaded by employing proprietary articles. Careful consideration of the current British Pharmacopœia will show that this hindrance to the employment of official preparations has to a large extent been removed, and that pharmacopœial drugs can now be prescribed with as much facility as proprietary articles. Whether the average dispensing chemist can compete with the wholesale manufacturer in rendering the results of his labor equally attractive in appearance scarcely concerns the prescriber. It can undoubtedly be done by a skillfully trained pharmaceutist; it is for him to determine what profit accrues from the trouble involved. So far as the benefit of the patient is concerned, it appears to be the duty of the prescriber to order the remedy demanded by the nature of the complaint, and to indicate the form in which it is to be dispensed, and, provided that the drugs supplied by the chemist are of the pharmacopœial standard of purity, the prescriber should be perfectly indifferent as to whether the actual preparation sent to his patient is proprietary or official. A prescription which indicates the name of a maker is necessarily an advertisement."

The Massachusetts Medical Society.—The one hundred and nineteenth annual meeting will be held in Boston on Tuesday, June 12th and 13th, under the presidency of Dr. Edwin B. Harvey, of Westboro. The section meetings will be held in the Mechanic Building on Tuesday. The programme for the Section in Medicine, under the chairmanship of Dr. Frederick C. Shattuck, of Boston, includes the following papers: Variations in the Clinical Course of Pneumonia according to the Bacterial Ætiology, by Dr. Frederick H. Baker. of Worcester; The Local and General Treatment in Uncomplicated Severe Cases of Pneumonia—Special Consideration of the Use of Alcohol and other Stimulants in Pneumonia—Delirium and Delirium Tremens as Complications of Pneumonia, by Dr. Norman F. Chandler, of Medford; The Peculiarities in Pneumonia of Children and Elderly People, by Dr. Alfreda B. Withington, of Pittsfield; The Prognosis of Pneumonia, and the Treatment of the Family, by Dr. Edgar H. Guild, of Springfield; The Contagiousness of Pneumonia, by Dr. John N. Coolidge, of Boston; Delayed and Prolonged Resolution in Pneumonia—Special Treatment—Prognosis, by Dr. Stephen A. Mahoney, of Holyoke; Serum Therapy in Pneumonia, by Dr. William H. Smith, of Boston; and Hydrotherapy in Pneumonia, by Dr. Simon Baruch, of New York. The order for the Section in Surgery, under the chairmanship of Dr. Walter P. Bowers, of Clinton, is as follows: Carbolic Gangrene, by Dr. Francis B. Harrington, of Boston; Suppurative Pericarditis, by Dr. Charles B. Porter, of Boston; The Treatment of Retro-displacements of the Uterus, by Dr. Charles H. Hare, of Boston; The Treatment of Prolapse of the Uterus, by Dr. Walter L. Burrage, of Boston; The Operative Treatment of Uterine Displacements by Vaginal Fixation, by Dr. William N. Swift, of New Bedford; and a discussion of papers on uterine displacements by Dr. John W. Elliot, Dr. Edward M. Greene, and others. The Shattuck Lecture will be given on Tuesday by Dr. William H. Welch, of Baltimore, on the subject of Diseases Caused by the *Bacillus aerogenes capsulatus*. The general meeting will be held in the Mechanic Building on Wednesday, at which the following papers will be read: Traumatic Joints (Sprains and Bruises), by Dr. Homer Gage, of Worcester; Septic and Gonorrhœal Joints, by Dr. Charles B. Porter, of Boston; Rheumatism (Acute Articular), by Dr. Ernest S. Jack, of Melrose; Neuropathic Joints, by Dr. Sidney A. Lord, of Boston; Arthritis Deformans (Osteoid, Rheumatoid), by Dr. Joel E. Goldthwait, of Boston; To what Extent do Rheumatic and Gouty Diatheses enter into the Foregoing Conditions as Ætiological Factors? What is the Scientific Basis for such a Term? by Dr. William H. Porter, of New York. The annual discourse will be delivered at noon by Dr. Arthur T. Cabot, of Boston.

The Association of Military Surgeons held its ninth annual meeting on May 31st, June 1st and 2d at the New York Academy of Medicine, under the presidency of Colonel Charles H. Alden, Assistant Surgeon, United States Army. Colonel Alden, in his address, referred to the services rendered by the association through its members, of whom over one hundred and fifty, or more than half the strength of the association, served during the Spanish war. He vindicated the work of the medical department, which, he said, had done its duty faithfully and nobly, referred to the satisfactory conditions in the Philippines as illustrating the value of discipline and experience, and spoke of the need and prospect of a closer connection between the State and regular forces. A committee was appointed to take the necessary steps for the establishment of a military medical journal. Captain W. C. Borden, Assistant Surgeon, United States Army, was announced as the winner of the medal established by Dr. Enno Sanders, of St. Louis, for the best essay on military surgery. Among the papers read were one by Captain Myles Standish, advocating the correction of vision in candidates up to a certain point, as was allowed in many European armies, rather than the arbitrary rejection of many otherwise eligible recruits. Assistant Surgeon F. W. Kemp gave some experiences of Field Work in the Philippines, and especially advocated the employment of Chinamen in tropical countries as bearers. Camp sanitation was the subject of many communications.

An Organization of Woman Physicians. From the *New York Times* for June 3d we learn that it was proposed to form an organization of women physicians on the first day of the meeting of the American Medical Association at Atlantic City. Dr. Mary D. Hussey, of East Orange, is stated to be the promoter of the scheme.

The American Proctological Society held its second annual meeting at Washington, D. C., on May 2d and 3d. The presidential address was delivered by Dr. Joseph Mathews, of Louisville, who said that the bane of specialism to-day lay in the "blooming out" of a class of men to practise specialties, who had no practical knowledge of the same. Such action should receive the strongest censure from the entire profession. He took it that the object of this assembling together was mainly to encourage the better understanding of the diseases of the rectum, by the reading of papers and free discussion thereon. He would suggest that the membership be made up of those who desire a better knowledge of proctological subjects, whether they were general or special surgeons, gynæcologists, or obstetricians. Indeed, it was by the diffusion of such knowledge in a general way that the profession was to profit. Considered from a special standpoint, it might be well to try and demonstrate that it was just as difficult to excise a rectum as to remove an ovary; that it required as much surgical knowledge to anastomose the colon around a stricture as it did to sew up a lacerated perinæum; to do colopexia as to remove a fibroid tumor; or to do a colostomy properly as to do a trachelorrhaphy.

Dr. S. T. Earle, Jr., of Baltimore, read a Report of a Case of Excision of the Rectum through the Vagina. The case was one of adeno-carcinoma; there were about five inches of the rectum removed, the centrifugal end of the rectum was drawn down and stitched to the anal margin, and the vaginal and perineal incision closed, the wound uniting by first intention. The results were most satisfactory, and the patient had fair control of her evacuations.

Dr. Samuel G. Gant, of New York, reported Some Unique Cases of Rectal Surgery. *Case I. Congenital Absence of the Coccyx and Lower Sacral Vertebra.*—This case was referred to Dr. Gant to be treated for anal fissure. The patient was thirty years old and a very strong man. Examination revealed the absence of the coccyx and the lower sacral vertebra, which made the broad end of the bone stand out, easily noticeable through the skin because of the fact that the tissues below it were dropped, making a concavity large enough to hold a goose's egg. He had been that way since birth, but had suffered no inconvenience from it, having perfect control over his bladder and anus. The fissure was relieved by divulsing the sphincter, incising the rent, and stimulating it thereafter with a mild silver solution. *Case II. Stricture of Rectum in a Little Girl Eleven Months Old caused by Swallowing an Open Safety Pin.*—This case was of unusual interest because of the child's age. At the time the pin was swallowed it caused considerable pain and suffocation. It was passed imbedded in a mass of fæcal matter just one month later. Several days preceding this she suffered great agony and passed frequent bloody stools. From this time on, the child continued to have bowel trouble, suffering from constipation, occasional diarrhœa, and the discharge of pus, blood, and mucus with the stools. Digital examination revealed a tight stricture three inches above the anus, which appeared to be the result of inflammatory action and adhesions. It was easily dilated with first one and then two fingers. The ulceration was curetted, the rectum irrigated, and the little patient sent home. After-treatment consisted of stimulating applications and occasional divulsion with the finger. This little patient was discharged cured in eight weeks. *Case III. Closure of Artificial Anus of More than Three Years' Duration.*—A left inguinal colostomy was made in the case of a young woman, eighteen years old, suffering from tuberculous ulceration, which would not succumb to less radical means. As a result of treatment, local and general, she fully recovered in a year, having in the meantime supported herself as a waitress. She desired to have the opening closed, but she was advised to wait. Three years from the time the operation was performed she became engaged to be married and insisted upon the closing of the opening in the side. Thorough examination demonstrated that the ulceration had healed, and further that there was no constriction of the bowel. A No. 10 Wales bougie passed through the anus and out at the anal aperture in the groin. The opening was included in two elliptical incisions, which were carried inward until the bowel was separated from the parietes. Because of the spur both legs of the original loop were firmly adherent and required resection. A purse-string suture was thrown around each, a Murphy's button inserted and locked, and the gut dropped into the abdominal cavity. Peritonæum, muscles, and skin were united with catgut. Primary union was obtained, the button passed on the tenth day, and the patient left the hospital at the end of three weeks. This patient made a complete recovery. She was under observation for two years after the closure and her bowels moved naturally during this time.

Dr. B. Merrill Ricketts, of Cincinnati, read a paper on Submucous Ligature for Hæmorrhoids. A large needle, he said, was made to describe more than a semicircle, carrying a moderate-sized kangaroo tendon submucously around the varices, which occupied the rectum as much as three inches above the muco-cutaneous border. The three hæmorrhoidal vessels, arterial and venous, entered the rectum and perforated the rectal muscular tissue about three inches and a half above the sphincter ani. Great difficulty had been experienced in passing the needle to complete the entire circle submucously. To overcome this the needle was brought out at a point corresponding to one half of the circle, to again enter at its point of exit, and then to pass out at the point of primary entrance. In cases of but one or two hæmorrhoids one ligature of this character was sufficient. If there were many hæmorrhoids occupying the entire circumference of the rectum as many of these submucous ligatures might be applied as necessary. Then, too, it was not necessary to incorporate all of the varices within the ligature, because many of those which were not so constricted by the ligature would become so as a result of the trophic changes which ensued. Sometimes it would be found most convenient to introduce all of the ligatures before making them taut. By doing this the introduction of the needle was made with greater ease. Before this work was attempted the sphincter ani should be divulsed to the fullest degree with the finger. Divulsion once completed, the hæmorrhoids would at once protrude, and were most easily encircled by the ligature. As soon as the ligatures were made taut the hæmorrhoids were inverted into the rectum. Sometimes it was desirable to puncture some of the larger hæmorrhoids that the distention might not be so great, and for the purpose of lessening the amount of hypertrophied tissue within the rectum. After a few weeks atrophy had taken place to such a degree as to allow the sphincter ani to resume its normal tonicity and to have completely destroyed all the objectionable varices which formerly existed. The advantages of this operation were: First, the impossibility of secondary hæmorrhage; secondly, there was no tissue destroyed or sacrificed; thirdly, the loss of time was but little, if any, greater than when they were removed by the clamp and cautery; fourthly, thus far there had been no infection; fifthly, there had been no fistula, abscess, or fissures resulting therefrom; sixthly, the pain was no greater, but less, perhaps, than in other methods of ligaturing; seventhly, there was absolutely no stenosis.

Dr. James P. Tuttle, of New York, read a paper on Temporary Artificial Anus. He gave as the indications for temporary artificial anus: 1. Obstruction with removable cause. 2. Cases of excision of the rectum where the sphincter was involved. 3. Intractable ulceration of the rectum. 4. Stricture of the rectum with large area of ulceration, which did not yield to local treatment readily. 5. Neoplasms in the sigmoid and colon that could not be found through the rectum. 6. Malformations and imperforate rectums, where the gut could not be easily found in the perinæum. 7. Chronic membranous colitis. 8. Certain forms of recto-vesical, recto-vaginal, and recto-urethral fistulas. With these numerous and clear indications, the operation was comparatively seldom recommended because of prejudice against it, and the false impression that once one had an artificial anus he must always have it. Doctors hesitated to advise it, because they knew that by the older methods closure was uncertain, and more dangerous than the operation or the disease for which it was made. The operation advised was a modification of the Rectus-Maydl method. It was quick, simple, effectual. The opening was by a T-shaped incision, made so that the transverse flap fell into the distal and effectually closed it, while the two triangular ones rolled outward and curled up like a dry leaf, thus leaving free exit from the proximal leg of the convolution. No part of the gut was removed or destroyed. The closure was made by simply unrolling and suturing back into position these flaps, first with sutures through mucous membrane and then with Lembert sutures of chromicized catgut. After the gut was thus closed, the partial parietal peritonæum was dissected away for an inch or more all round the abdominal incision, so that the gut would drop back into the abdomen, but not into the peritoneal cavity, thus eradicating the spur. The muscular fascia and skin were then sutured over the gut with silkworm gut.

Dr. J. Rawson Pennington, of Chicago, read a paper on Chronic Interstitial Proctitis as a Factor in Obstinate Constipation and its Radical Treatment. He demonstrated that the sigmoid flexure in the distended state frequently extended into and occupied the right iliac fossa. He also gave what he considered to be conclusive evidence of the existence of the rectal valve and of its structure. He asserted that deformity of the rectal valve and hypertrophy of its muscular layers were the two principal primitive causes of obstinate constipation. He exhibited his automatic valve clip for dividing these structures when pathologic.

Dr. Thomas Charles Martin, of Cleveland, gave a demonstration of the rectal valves in the living subject by means of his method of proctoscopy. Without the use of an anæsthetic and by means of the author's chair the subject was put into a posture equivalent to the knee-chest posture, the rectum inflated, and its entire length exposed to direct view. The rectal valves were rendered conspicuously visible and palpable to the members of the society and the fact of their existence generally was agreed upon by the society.

The same gentleman then proceeded to describe the new radical operation for valvular obstipation. A normal valve might be effaced under pressure of the test hook; a valve situated on the fixed posterior wall of the rectum was much more obstructive than one situated on the anterior wall, for the reason that the descent and backward excursion of the anterior rectal wall placed the fæces more securely in the pocket afforded by a posterior valve. A valve situated on the anterior wall, if of the same condition and dimension as one situated on the posterior wall, was less obstructive to defæcation for the reason that the backward and downward excursion of the rectal wall threw the fæces out of the valve pocket and over its free border. If the number of the valves was more than the normal there it could be readily understood that such an addition of obstructive features increased the obstruction. For instance, four or five relatively shallow valves placed close together were more obstructive than two somewhat deeper valves, if these two valves were placed at some distance from one another. Anatomical coarctation or physiological juxtaposition of the valves might contribute to the establishment of obstipation whether the valves were diseased or not. If two valves were so closely situated that their borders were seen to overlap, or if it was seen that on the patient's bearing down two valves then did overlap, it might be assumed that these valves constituted an obstruction to defæcation. A valve situated at a direct right angle to the axis of the rectum was more obstructive than one that was obliquely situated. However, an oblique valve might contribute to the establishment of an obstruction *in* a transverse valve immediately below it, for the reason that the oblique valve might deflect the fæcal column directly into the pocket formed by the next lower and transversely situated valve.

Therefore (1) the resistance which any given valve afforded to the test hook, (2) to the propinquity of other valves to a given valve, and (3) the direction of the valve next above a given valve, together with (4) the number of valves in the rectum, and (5) the precise situation and direction of each valve, were all features which should be studied as possible component factors contributing to the obstipation. Hypertrophy of the rectal valve due to a rectitis, local or general, was characterized by evident thickening of the free border of the valve. Fibrosis of the rectal valve was not characterized by an increased size of the valve, though its resistance to the hook might be as great as in the case of the hypertrophied valve. There was always noticeable in cases of valvular obstipation a very conspicuous redness of the mucous membrane which began at the obstructing valve and extended downward toward the anus. The rectal mucosa above the obstructing valve was usually of pale complexion except in those cases where there was invagination of the upper gut. Dr. Martin then outlined his operation for division of the valve, and detailed the precautionary measures to be employed to insure safety and secure success.

Dr. A. B. Cooke, of Nashville, spoke of Moot Questions in Proctology. He called attention to a number of the more prominent points of disagreement among proctologists. These were: 1. Anatomy: The existence of the rectal valves being not yet generally admitted, when in truth they constituted the most conspicuous features of the normal rectum. 2. Physiology: Many points in this connection had yet to be worked out. The mechanics of defæcation was a much-disputed subject. 3. Pruritus ani: Is this a disease or merely a symptom? The etymology of the term itself offered the readiest solution of the problem. Pruritus means simply *itching,* and itching could not be regarded as other than a symptom. Though sometimes difficult to locate, the lesion which gave rise to it was practically always a macroscopic one. In searching for it the reflexes were to be borne in mind. 4. Simple ulceration: One prominent author (Mathews) stated that this disease was very uncommon above the sphincter muscle. Dr. Cooke's experience had been the very opposite. This difference of opinion was probably due to different conceptions of the meaning of the word. Properly considered, ulceration and ulcer were synonymous terms, and the rectal ampulla was a frequent site of such disease process. 5. Benign stricture: The author called attention to the different views held as to the frequency of syphilis as a causative factor. Sixty per cent. was far too high an estimate. The rectal valves had much to do in the ætiology of this disease. 6. Cancer: Discussion of this disease was limited to the question of the justifiability of colostomy as a means of prolonging life and giving comfort. As compared with the hypodermic syringe the author deemed it greatly to be preferred, and when total extirpation was impossible strongly advised resort to this procedure.

Dr. L. H. Adler, Jr., of Philadelphia, spoke of Pruritus Ani, with especial reference to its local treatment. It was important, he said, to see that the patient had a daily evacuation of the bowels, and, if necessary, medicines were to be used for this purpose. In all cases, more or less varicosity of the hæmorrhoidal vessels existed; at all events, he was in the habit of seeing the patient daily for a time, and he employed an injection into the cavity of the rectum of one, or two, or two and a half drachms of the following prescription: ℞ Fluid extract of hamamelis, one ounce; fluid extract of ergot, two drachms; fluid extract of hydrastis, two drachms; compound tincture of benzoin, two drachms; carbolized olive or linseed oil (carbolic acid, five per cent.), one ounce. M. Sig.: Shake well before using. The patient was advised, prior to using this injection, that a desire to have the bowels evacuated would occur as a result of its employment, but that if he would remain quiet upon the examination table, the sensation would quickly pass away. The author painted the entire surface around the anus for several inches outward with a strong solution of nitrate of silver. If any break on the continuity of the skin existed as a result of previous scratching, a little of a two-per-cent. cocaine solution applied to the abrasion would prevent the suffering incident to the use of the silver salt. In his experience the use of a strong silver solution was not nearly so painful, under the circumstances surrounding its use in the class of cases under consideration, as the weaker solutions. So soon as the silver had dried, and from the first visit and thereafter, he smeared over the anus and the cutaneous surface of the parts for a distance of about two inches around the orifice, the official citrine ointment or unguentum hydrargyri nitratis. He used the ointment in its full strength. Over the salve he placed a wad of absorbent cotton, the quantity of cotton varying with the patient's wishes and comfort. The dressing was kept in place with a T-bandage. If the itching should annoy him during the night he was directed to bathe the anus with water as hot as could be borne with comfort, but under no circumstances was he to rub the parts. He was also told that the application of the hot water would momentarily increase the itching, but that he was not to scratch. He was directed, after he had used the water, to use either black wash (lotio nigra) or, what was better in some cases, calomel ointment, either of which was to be applied locally to the affected parts.

Dr. George B. Evans, of Dayton, read a paper on Fistula. The inefficacy of all remedial measures except the knife for curing fistula still remained unquestioned, unless by inaccurate observers. A fistula which was not due to ulceration and perforation of the rectal wall from within was the result of a previous abscess, due to an inflammation, and was the result of traumatism. He had sometimes found fistula due to caries of the lower portion of the sacrum and the coccyx. He believed it to be a safe rule to operate on phthisical patients as upon others. During the past ten years there had been over six hundred phthisical patients admitted to St. Elizabeth Hospital, Dayton, Ohio; during the past six years he had operated on one hundred and ninety-eight cases of various rectal disease in the charity wards; forty-two had been for fistula; seven of the forty-two having been without doubt tuberculous. Two of the seven died after several months of comparative comfort.

The New York Academy of Medicine.—At a stated meeting, on Thursday, June 7th, the order for the evening included the following papers: Memorial Address on the Life of Dr. Fessenden Norton Otis, by Dr. T. Gaillard Thomas, with remarks by Dr. L. Bolton Bangs and Dr. E. L. Keyes, and resolutions by Dr. Richard H. Derby; The Pathology of Insolation, by Dr. Ira Van Gieson, and the Treatment of Sunstroke, by Dr. Alexander Lambert. In the discussion which followed Dr. George M. Parker and Dr. Charles A. Whiting took part.

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Original Communications.

A CONTRIBUTION TO THE TECHNIQUE OF MODERN URANOPLASTY.*

By JAMES F. McKERNON, M. D.,
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[Presented as a candidate's thesis to the American Laryngological Association at its twenty-first annual congress, May 22, 1899.]

SOME few years ago the writer had occasion to close a congenital cleft in the hard palate, and before doing so attempted to find some modern reference that would aid in this procedure, but was unable to obtain anything but a very meagre description of this operation in the text-books at hand. In fact, several well-known and up-to-date books on the nose and throat were consulted without finding the slightest reference to this operation, so that but little knowledge was gained that could be of help, and the result was that the case in question was not cured, the cleft being only partially repaired.

In talking afterward with a general surgeon about closing these congenital defects, he said: "Why would it not do to perform a tracheotomy, administer the anæsthetic through the tracheotomy tube, and, after you are through with the repair of the palate, treat it as you would any other wound, by packing or dressing, leave the tracheotomy tube in for eight or ten days, and nourish by the rectum?" The idea seemed a practical one, and I determined to carry it out in my next case of cleft of the hard palate, which I did, together with three other cases since, with gratifying results in all four.

Three of my patients were adults beyond the age of twenty; the last was three years old. In all these cases the cleft extended, not alone through the hard palate, but through the soft palate also, so that in describing this operation we shall have to describe both uranoplasty and staphylorrhaphy, as, where a complete cleft exists in the same patient, both operations should be done at the same sitting, as the technique differs but little in each.

As a preliminary to the operation we should see both in the adult and child if any lymphoid hypertrophy exists in the pharynx or vault; and, if present, remove it prior to the operation, as, if done at the time of the operation, we have not alone the bleeding to interfere with our work, which prevents us from packing the soft palate firmly against the posterior wall in dressing, but also in a child we have the reaction arising from the removal of hypertrophied lymphoid tissue—a factor to be considered, especially should we have a surgical field closely adjacent.

Enlarged tonsils should also be removed if they coexist with adenoids in the child, and their removal should be done prior to operation also, and time enough should have elapsed to completely heal and cicatrize over their base.

When inferior or middle turbinated bodies encroach or fall into the cleft, their pendent portions should be removed and the base allowed to heal some time before the major operation is done.

The Operation.—The antiseptic precautions for patient, instruments, and attendants should be the same as those for any other successful operation. The first step is to administer the anæsthetic in the usual way, chloroform being used. Second, to perform the tracheotomy, which takes but a few moments; then connect with the tracheotomy tube a long rubber tube covered at the distal end by a membrane of gauze on which the chloroform can be dropped. Ether can also be given in this way if desired, though it is not so satisfactory an anæsthetic if so given as chloroform. Next, a gag is inserted between the teeth, preferably the Smith gag, as in connection with it we have a tongue depressor that holds the tongue well downward. The gag, when separated, opens the mouth to its widest extent and is self-retaining, which in itself is an important factor, as here we need all the room that it is possible to obtain for digital and instrumental manipulation.

A large, flat, thick piece of plain sterilized gauze, with a string attached, is now placed below at the base of the tongue, covering the entrance of the larynx and œsophagus, thus shutting off all possibility of foreign substances, such as blood, solutions, etc., from being carried into the larynx and the parts below, or into the stomach by way of the œsophagus. The string attached to this piece of gauze is allowed to hang out of the mouth, with a clamp attached to it, so that it can, if necessary, be quickly removed at any time. There should be several of these pieces of gauze on hand in case the one in position has to be removed, as sometimes occurs when it becomes saturated with blood.

The face, lips, teeth, tongue, pharynx, and the hard and soft palate, as well as the nose, are now thoroughly cleansed with a warm boric-acid solution, or a warm normal salt solution. The latter is preferable. After thoroughly going over these parts with this solution, borolyptol is used in full strength to mop the surfaces again, and make them as sterile as it is possible to do in this region and not injure any of the tissues.

The next step is to prepare the edges of the cleft, and this is done by beginning below at the soft palate, using a long-handled volsella to grasp the tissue about to be removed; the cutting can be done with either a long, narrow, curved scissors or a long-handled curved scalpel with a small blade. As a rule, the scissors are preferable, as in severing the tissue they leave a beveled surface, so that when the edges are brought together there is more accurate approximation, owing to this beveling, and a thicker base is left beneath.

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* Read before the Section in Laryngology of the New York Academy of Medicine, October 25, 1899.

After freshening the edges of the soft palate, we can pass directly upward on that side and prepare the edges of the hard palate in the same manner. When close to the angle, and directly back of the teeth, I have found it better to continue the incision in the form of an ellipse rather than a circle around the angle to the opposite side, as it gives us a better approximation when sutured than if the incisions had ended in the apex of the cleft.

The opposite side is proceeded with in exactly the same manner, beginning below and working upward. When a rudimentary uvula is present, great care should be taken to destroy as little as possible of this muscle, as its presence helps very materially when the time comes to introduce our sutures. All the time the edges are being freshened an assistant (and there should be two present) should mop up the blood with gauze sponges on long-handled sponge holders, and between times press the gauze against the bleeding surface to control the flow of blood.

Next, a curved incision is made in the hard palate close to the alveolar border of the jaw, this incision extending through mucous membrane and periosteum to the bone. The extent or length of this incision should be guided by the extent and length of the cleft. When a complete cleft is present, then it should extend from directly behind the teeth in front as far backward as the hard or bony palate extends. A small, rather sharp and curved, pointed periosteal elevator is now used to separate the periosteum from the bone. This separation must be done slowly and carefully, in order not to injure unnecessarily the palatine vessels. The periosteum should be completely separated from all its attachments to the hard palate, except a small portion directly behind the front teeth, so that with its covering it forms a muco-periosteal flap that can be slid easily into the median line without tension of any kind, and when both sides are loosened it forms a perfectly loose apron, easily approximated in the centre.

To relieve the possibility of any tension being exerted by the soft palate, an incision should always be made on either side, internal to the hamular process and carried well backward. As a rule, this incision is made after the edges are sutured. This will prevent tension at the junction of the hard and soft palates, as well as prevent tension of the soft palate alone, which it was formerly supposed to relieve. Before introducing the sutures, the bleeding from the edges should be stopped by sponges of gauze wrung out of a hot normal salt solution and applied to their surfaces.

The next step is the introduction of the sutures, and I have found the needles shown here in Fig. 1 of the greatest help in their introduction. They are made by the W. F. Ford Company, and consist of a right and left, and a suture can be easily introduced, no matter how abrupt the angle or small the space.

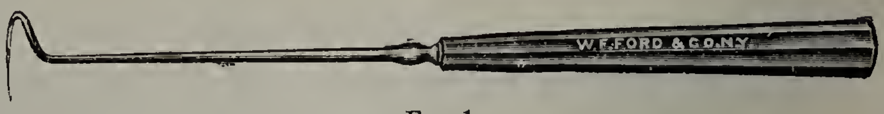

Fig. 1.

The material for sutures can be either a medium-sized silk, a silkworm gut, or a silver wire. In all my cases I used iron-dyed silk, except in one, and in this I used silver wire with a gratifying result. The sutures should be passed from before backward—that is, beginning directly behind the front teeth, and extending backward to the end of the soft palate. As a rule, the sutures should be about a third of an inch apart, and, if of silk, can be tied by the slip-knot method or the ordinary surgeon's knot. The edges should approximate perfectly and there should be absolute freedom from tension. After the oral cavity has been cleansed again by the normal salt solution and the pad removed and replaced by a fresh one, a thin strip of sterilized gauze, about an inch and a half wide, is passed between the under surface of the repaired palate and the posterior pharyngeal wall. Plain, sterilized gauze is then used to pack the lateral incisions, and here the packing should be quite firm. Sterilized gauze is also used over the whole of the operative field, the cavity of the mouth is filled completely to the front teeth, and the gauze is pressed rather firmly against the under surface of the new palate.

The patient breathes perfectly free through the tracheotomy tube, and we are enabled to treat the wound exactly as we would were it on any other surface of the body.

Should vomiting occur and soil the dressings while the patient is recovering from the anæsthetic, then we must redress. This happened twice in one of my cases, and not at all in the others.

Nourishment is carried on entirely by the rectum, and consists of peptonized milk, four ounces given every four hours. After the first twenty-four hours this is alternated with liquid beef peptonoids, and later malted milk, given in the same quantity and at the same intervals. A patient can be nourished in this way with perfect ease for ten or twelve days and lose but very little weight. In giving the nourishment by rectum, the nurse should always apply a pad after the introduction of the fluid, and hold it firmly in position for at least half an hour to insure its absorption, for many times the bowel will become very irritable and often reject the smallest quantity introduced if this precaution is omitted.

If no vomiting has taken place the packing should be removed at the end of forty-eight hours, and the parts gently sponged with either a hot saline solution or a weak solution of formalin, and the wound gently repacked.

Owing to the salivary secretions, which are now increased by the mechanical irritation of the dressing, we should remove the packing each day and cleanse as before, at the same time inspecting our sutures; and if any are found drawing they had best be severed at once, but not removed until the next dressing, as then they will have become loosened and easy to remove and have helped to hold the parts together several hours longer than they would otherwise have done had they been removed at the time of the cutting, and this in itself is an advantage in promoting the healing.

The length of time for the sutures to be left in depends entirely upon how the case does. They should not be removed all at one time, but one removed here and there as seems best from the inspection. Silk sutures can rarely be left in over eight days, and that is time enough, for if they have not served the purpose for which they were used by this time they never will. Silver wire can be retained much longer, and in a recent case which I operated upon it was left in for fourteen days.

The tracheotomy tube should be retained until the patient is able to take food by the mouth, which is usually about the tenth or twelfth day. It can then be removed and the wound left by it will quickly heal by granulation in a very few days. As an adjunct to the nutrition, I have found of very great value the introduction into the bowel at night of ten to twelve ounces of a warm saline solution. This also materially diminishes the thirst and adds to the general comfort of the patient.

The history of my cases operated upon in the manner detailed is briefly as follows:

F. M. L., a man, aged twenty-two years, youngest of four children, was referred to me in February, 1895. Family history negative. Was operated upon when nine years of age, for cleft palate, with unsuccessful result.

Upon examination I found a thin, anæmic young man, with high cheek bones and long features. Examination of the mouth disclosed a cleft extending as far forward as the front teeth, and backward through the soft palate in the median line, a rudimentary uvula being present on the left side. The mucous membrane covering the periosteum of the hard palate was pale; the mucous surface of the pharynx and nasopharynx was covered with dry, hard crusts of mucus, and inspissated mucus was present at the orifices of both Eustachian tubes. On the right side, the middle and posterior portion of the inferior turbinated body was œdematous and hanging down in the opening left by the cleft. The two front teeth were irregular, the one on the right of the median line extending back into the mouth considerably farther than the other, making an uneven muco-periosteal border. He could with great difficulty make himself partially understood, but in attempting to talk a marked facial contortion was present. The operation of closing the rent in both hard and soft palates was advised and accepted, and, as a preliminary, the pendent portion of the right inferior turbinated body was removed under cocaine at once.

Five days later the operation was done, a tracheotomy being performed the day before under cocaine. Chloroform was given through a long tube and the operation done in exactly the manner described. Silk sutures were used throughout, and the cleft in both closed. There was no vomiting. The dressing was removed at the end of the second day, the parts moistened with sterile water and repacked. The packing was then removed each twenty-four hours, and at the end of the fifth day two sutures at the junction of the hard and soft palate were severed and allowed to remain in until the next day, at which time there had been a slight separation of the edges at the beginning of the soft palate. This later healed readily under the application of fused chromic acid applied with an applicator. The last suture was removed on the ninth day, and there was complete union throughout, except at the part spoken of at the junction of the hard and soft palates.

The patient was nourished during convalescence by the rectum and did well. On the tenth day some warm milk was given by the mouth, and two days later the tracheotomy tube was removed, the resulting wound healing quickly in a few days. The patient was kept under observation for four months, and during that time there was a marked improvement in his general condition. The catarrhal changes cleared up in the pharynx to a great extent, and his speech was decidedly improved, though not what one would expect in a patient of younger years. Nearly all facial contortion, that was so marked before operation when he attempted to talk, was cleared up, and altogether there was decided general and local improvement.

The last time I saw this man was twenty months after operation, and he then weighed twenty-seven pounds more than before he was operated upon, and there was a marked improvement in his articulation and speech. Two months ago I received a letter from his mother, in which she said his speech had continued to improve and that he now talked fairly well.

Case II.—J. R. K., a woman, aged twenty years and four months, was referred to me April 5, 1896, to see if anything could be done to relieve a cleft in both the hard and soft palate, as well as a congenital harelip, extending through the upper lip to the outer angle of the nose on the right side.

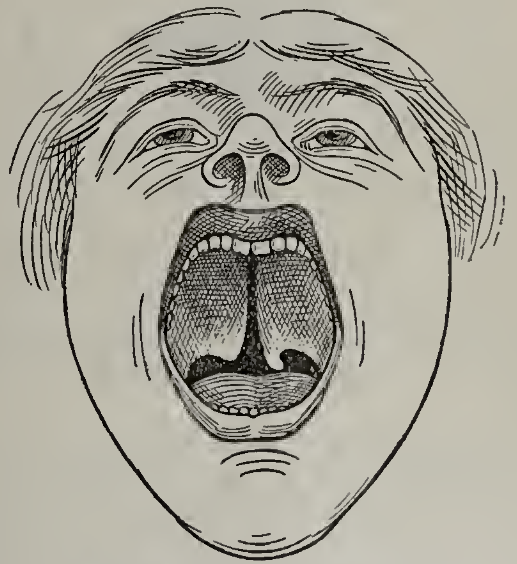

Fig. 2.—Before freshening edges.

The history given was that she was the youngest of five children, all the others well and healthy. Her deformity had existed from birth, and at the age of four years the cleft in the lip had been operated upon, but the stitches tore away, leaving, it was said, a larger gap than had existed before. No attempt had been made to close the rent in the hard or soft palate. The young woman was healthy, except for periodical attacks of headache, very violent in character. These would occur once every two weeks, and she would be obliged to remain in bed for about four days with each attack. She was slight in stature, weighing only ninety-four pounds.

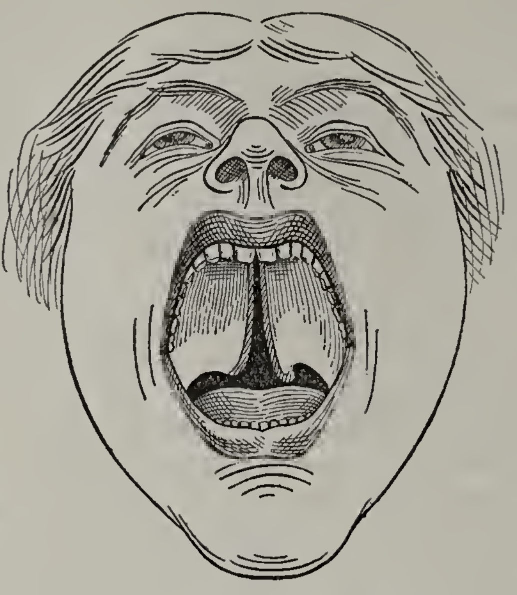

FIG. 3.—After freshening edges.

It was with the greatest difficulty, and only after the utmost persuasion, that I could get the patient to attempt to talk, and the effort was such mental pain to her that I gave it up. She could articulate only a few words imperfectly, and then always with the face turned aside or hidden by a handkerchief. The father said she had always been decidedly sensitive in talking, and never saw any one but the members of her immediate family, nor could she be induced to speak with strangers.

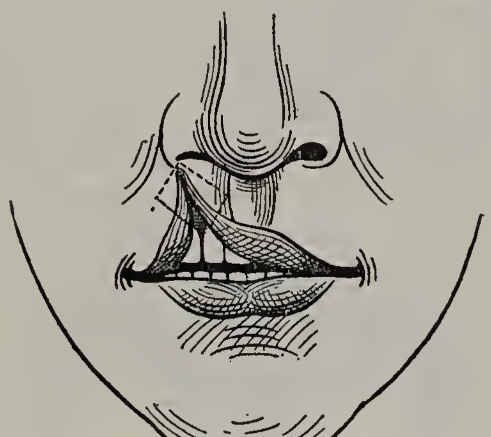

FIG. 4.—Before suturing, showing line of incision.

Upon examination, a cleft was seen extending from half an inch to the left of the median line of the upper lip, diagonally across and upward to the outer angle of the right nostril. This cleft extended through the soft tissues, leaving the bone exposed beneath.

Examination of the pharynx disclosed a cleft in the hard palate extending forward to within a third of an inch of the posterior surface of the front teeth. This cleft extended backward through the soft palate. There was no uvula present. The posterior pharyngeal wall was dry, glazed, and covered with mucus as far down as one could see. There was marked hypertrophy around each Eustachian orifice, and at times she had complained of severe and persistent tinnitus, especially upon taking cold. The turbinated tissue was also hypertrophied and covered with mucus, and the under surface of the left inferior turbinated body rested on the edge of the muco-periosteal covering of the hard palate on that side. The extent in width of the cleft in the hard palate was a little over three quarters of an inch at its point of junction with the soft palate. This gradually diminished in size toward its apex behind the front teeth.

The operation of closing the rent in both hard and soft palates as well as in the harelip was advised and, after some hesitation, accepted.

A tracheotomy was done at the time, and the closure of the hard and soft palates was carried out in exactly the same manner described in the earlier part of this paper. Medium-sized sutures of silk were used, and somewhat freer incisions made, internal to the hamular process, than in the preceding case, as there was less of the tissue of the soft palate present in this case. The wound and mouth were packed as before detailed.

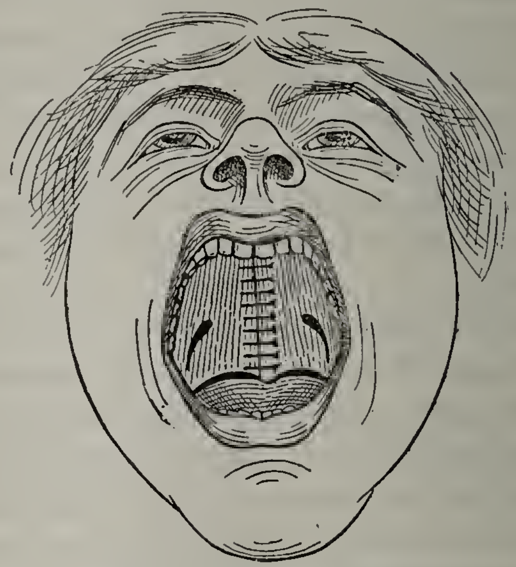

FIG. 5.—After suturing.

An elliptical cut was then made completely through the lip from the vermilion border below to a point just above the extent of the irregular cleft. This cut was made with the scissors, and extended directly through the whole of the tissues. The bleeding was easily stopped by pressure with cotton sponges wrung out of a hot saline solution, and the edges were brought together by three lines of sutures, two buried and of catgut, the third external and of very fine silk for the skin. The first or deep layer of sutures extended only through

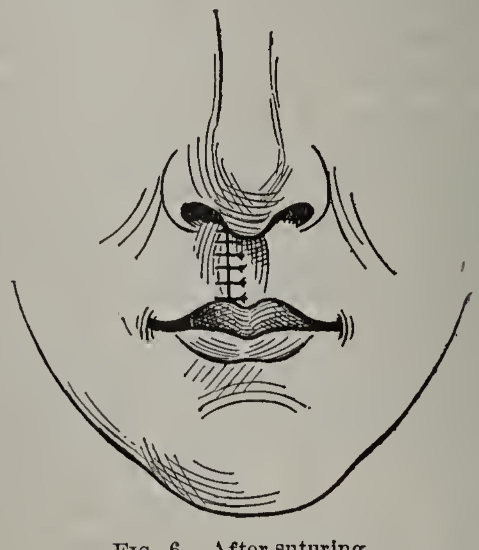

FIG. 6.—After suturing.

the mucous membrane, and here very fine catgut was used. The second layer above this brought the muscular structure of the lip together, and catgut of a coarser grade was used. The skin was then brought in apposition and sutured with interrupted stitches of very fine iron-dyed silk, close together, so that when completed there was a perfectly straight line from a little to the right of the centre of the nose down to the vermilion border of the lip.

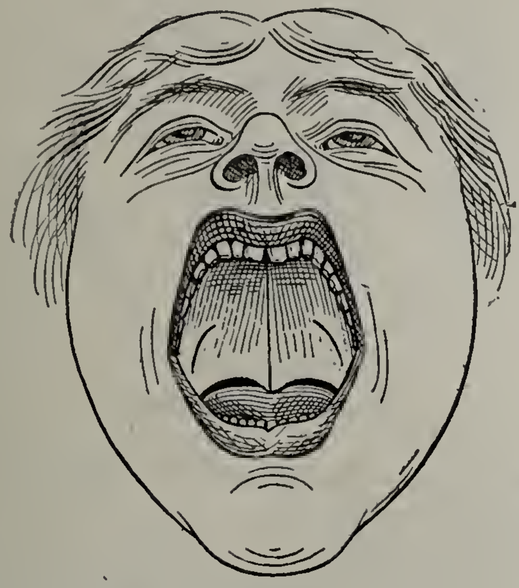

Fig. 7.—Three weeks after operation.

This was dressed by dusting aristol powder over it, and by covering with successive layers of gauze made to adhere by soaking the strips in sterilized flexible collodium, and the dressing left in place for five days. It was then removed, and the silk sutures were cut and allowed to remain for two days more, when they were all removed, the union being perfect.

The sutures in the palate were inspected every day after the first forty-eight hours, and on the seventh day here and there one was cut, but allowed to remain in until the next day. The last sutures were removed on the eleventh day, when there was complete union throughout, and it has remained so.

Nourishment was carried on by the rectum as before, and the tracheotomy tube was removed on the twelfth day, the wound healing rapidly after its removal. Three weeks after the operation an attempt was made to teach her to talk, and this was persisted in for four months. At first she could pronounce indistinctly only certain letters or words, having more trouble in articulating the liquids and vowels than the consonants; but as time went on and she persisted practising an hour twice a day in her room, and later meeting people and attempting to carry on a conversation, it was remarkable to note the improvement she had made. I saw her a few weeks ago, and, save for the imperfect pronunciation of certain of the liquids, she could carry on a conversation as well as any one; and from a weight of ninety-four pounds, which, up to the time of operation, was the heaviest she had ever weighed, she now weighs one hundred and twenty-two pounds. There has been no tinnitus for over a year, even though she has had several colds of long duration. The headaches have also become a thing of the past, and, as she expressed it, she now lives as a human being among other people.

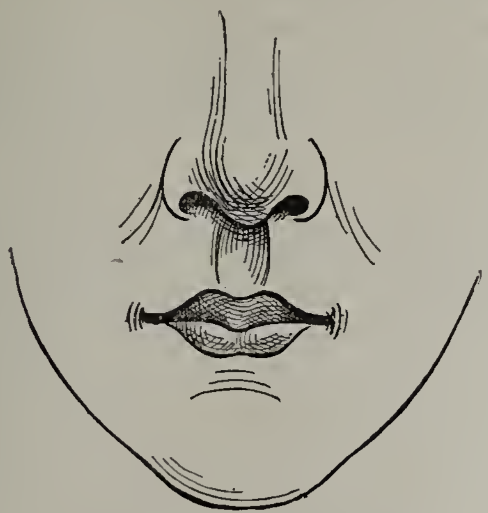

Fig. 8.—One month after operation.

Case III.—L. C. R., aged thirty-three years, widow, and mother of two healthy children, was referred to me May 3, 1898, for a fissure, congenital in origin, of both hard and soft palates. She complained of deafness and marked tinnitus in the left ear for the past five years, and said that recently the right ear had become deaf, with the presence of subjective sounds, and it was principally for this that she wished to obtain treatment, as her only means of livelihood would be seriously interfered with if the hearing on the right side became as bad as on the left. Her speech was very slow and indistinct, and one could scarcely understand anything she said without asking her to repeat it several times, and the embarrassment in the repetition would cause her to burst into tears and bemoan her sad fate that she had been afflicted in this way. Her family history was good. She had had the usual diseases of childhood, but with no sequelæ. Twelve years before (at the time of her marriage) she had had the four front teeth drawn and an artificial set attached to a plate, with obturator to fit over the cleft in the hard palate and a portion of the rent in the soft. When this plate was removed scarcely a sound could be understood. On examination of the mouth and pharynx, a cleft was seen extending through the centre of both hard and soft palates from end to end. The soft palate was more or less rudimentary and shortened very much. There was no uvula present on either side. The cleft in the hard palate extended anteriorly to the alveolar border, where the front teeth had been drawn, and was an inch in width at the greatest point of separation and came to an irregular and jagged point at the apex. The roof of the mouth was arched, and the distance between the gums on either side was considerably less than in the ordinary adult. The muco-periosteum was rather more thickened than in the other cases and paler. The mucous membrane of the pharynx was dry and atrophic, with thick strings of mucus covering its surface. There was marked atrophy of the membrane and submucous tissue around the orifice of the Eustachian tubes, and at the entrance to both tubes there was a plug of dry, inspissated mucus. The tongue was also dry, with a brown coating, and several lymphoid hypertrophies were present at its base.

Physical examination of the ears disclosed marked retraction, with thickening of the membrana tympani, and some congestion around the tympanic ring and along the ossicular chain on the right side.

Functional examination showed a marked diminution in the hearing of the left side, as the acoumeter of Politzer was heard at only four inches, and at twelve inches on the right. The bone conduction was slightly diminished on the left side and normal on the right.

I advised closure of the cleft by operation, but the patient wanted to think it over for a few days; so the mucus from the pharyngeal orifices of the tubes was removed and both ears inflated, with the result of finding the left tube markedly stenosed and capable of admitting but a very small volume of air. The right tube transmitted a fair volume, but less than that of a normal tube.

The patient returned three days later, saying the hearing had improved for about twenty-four hours after the treatment, but then lapsed into its former condition. She was told that this would probably be the result, and that with the tubes in such an exposed condition treatment would avail her but little as regarded permanency. In the face of this she requested that an operation be performed. She was operated upon two days later, tracheotomy being done while ether was administered by the mouth.

As soon as the tracheotomy tube was inserted and a long tube attached for giving chloroform, she began to breathe badly. The chloroform was continued for about five minutes, the respiration being decidedly unsatisfactory during this time. It was thought best to change to ether, which was done, and the respirations at once resumed their normal character, and ether was used throughout the remainder of the time it was necessary to keep her under an anæsthetic. The operation was done exactly as described in the foregoing cases, but on account of the rudimentary condition of the soft palate longer lateral incisions had to be made internal to the hamular process so as to avoid tension.

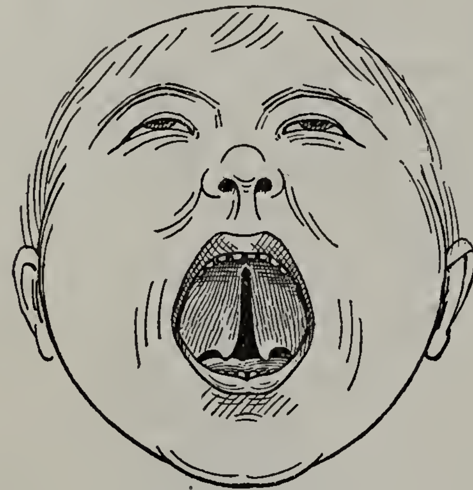

Fig. 9.—Before suturing.

Owing to the thickness of the muco-periosteal flap, heavier silk was used in suturing, the individual sutures being placed a little farther apart than when the finer silk was used. The wound was packed, as in the other cases, nourishment carried on as before, and the wound was dressed each day after the second. The sutures were allowed to remain in somewhat longer than those in the other cases, the last being removed ten days after the operation.

Healing in this case was perfect throughout, and the tracheotomy tube was removed on the twelfth day, the wound in the trachea healing quickly after.

One month after the operation, the patient had her four front teeth removed from the old plate, and a bridge was inserted holding these teeth in place permanently. She can now articulate plainer than before and can be quite readily understood, a marked change compared with her conversation previous to the operation. As the age of the patient was such that very little was promised in the way of improvement of speech function, she, as well as myself, was gratified at the result obtained, and at the present time she has a far better voice than I believe could have been given by any other method of treatment.

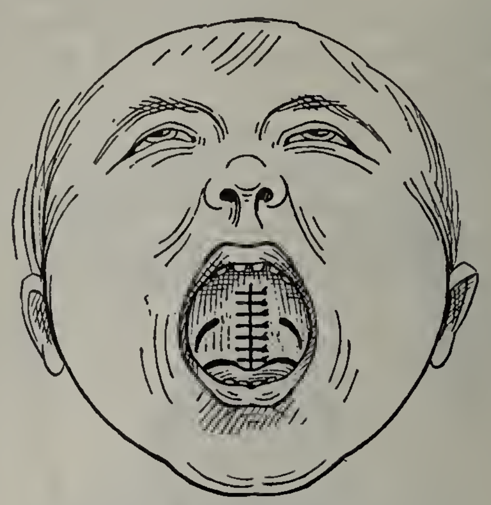

Fig. 10.—After suturing.

Six months after operation she heard the same acoumeter that she was tested with before at a distance of twenty-one inches, an improvement of seventeen inches, and her tinnitus had disappeared. She heard the acoumeter on the right side at twenty-four inches, a gain of twelve inches. This marked increase in the hearing had probably been augmented by the occasional inflation and vaporization of the middle ears. The left tube now admits a fair volume of air, showing that the stenosis formerly existing was caused by hypertrophy of the membrane lining the tube.

Case IV.—B. F., child, aged three years, was seen January 9, 1899. There was a congenital defect, complete, of the soft palate, and a defect in the posterior two thirds of the hard palate; the widest point of separation of the hard palate was little more than a third of an inch. There was a rudimentary uvula on both sides attached to the soft palate. There was also a large group of adenoids present. The pharynx was covered with stringy mucus, and the child was continually snuffling. The mother said it was with the greatest difficulty they could feed her, as quantities of the food, milk, etc., would regurgitate through the nose and cause the child to vomit. There was a purulent discharge from both ears, caused, no doubt, by the presence of the lymphoid tissue in the pharyngeal vault. Since birth there had always been a croupy cough at night while lying down. There was no distinct or definite sound the child could make except the word "mamma," and this was not fully intelligible except to her parents.

I advised removal of the lymphoid tissue in the pharynx under ether, and treatment of the ears at first, to be followed later by an attempt to close the congenital defect in both hard and soft palates. The adenoids were removed under ether, the auditory canal of each side irrigated with a solution of bichloride, 1 to 5,000, and at the end of two weeks the discharge had ceased from both ears, and they have remained well since.

One month after the removal of the adenoids a low tracheotomy was done, chloroform administered through the tracheotomy tube, and the operation of closing both hard and soft palates was done. It was a little more difficult here on account of the small space to manipulate in, but by the aid of the needles shown, the sutures, which were of silver wire, were quite easily passed. My object in using the silver wire in this case was because I had but recently had the pleasure of listening to a paper by Dr. Lester (American Laryngological, Rhinological and Otological Society, Washington, January, 1899) on closure of rents in the soft palate by this method of suturing, and, as his results were uniformly good (and also owing to the fact of the incomplete cleft in the hard palate), I decided to try the wire sutures. The only difference in the suturing was that with the wire the needle was not threaded until after it had been passed through the flap, then threaded and the needle withdrawn, still threaded, in precisely the same manner as in sewing up the several layers of the abdomen. The sutures were placed about a third of an inch apart, and were drawn together and twisted with the ordinary wire forceps, the usual shield being used to regulate the amount of tension. The wound and mouth were dressed in the usual manner. There was marked vomiting while the little one was coming out from under the anæsthetic, and the dressing, which was soiled, had to be replaced. The child was very restless for two days, sleeping only a few moments at a time. Nourishment was given by the rectum, the quantity being about one third of that given in the adult cases. The stitches were allowed to remain in for twelve days before any were removed, and it was two weeks from the time of operation when the last one was taken out. Healing in this case was perfect, the line of union being firmer than when the silk sutures were used. I attributed this partly to the use of the wire suture and partially to the contour of the palate, and the fact that the cleft was not so widely separated as in the other cases, and also to the age of the child, the tissues being more pliable.

The tracheotomy tube was removed on the fourteenth day, the wound healing quickly after its removal.

One month after the operation an attempt was made to teach the child to talk, and, though only four months have elapsed since the operation, the speech has improved to such an extent that we are justified in believing that, owing to the age of the child, speech function will ultimately be perfect.

There are many things to be taken into consideration when contemplating this operation and its successful outcome; and, at the risk of being wearisome, I shall enumerate and dwell for a moment on some of them.

When a cleft occurs in both hard and soft palates in the same patient, we should do the complete closure at one sitting, as the time required for both is but a trifle longer after preparation has been made; and, where a congenital defect of the lip exists, in connection with the cleft of both hard and soft palates, it can be closed at the same time, provided there is no contraindication in the patient's condition—that is, weakness or collapse. Also, when closure of both the hard and soft palates is done at the same sitting, we are sure to get less tension than where either is done separately. Adenoids and enlarged tonsils, when present, should always be removed at least several days before the closure in the palate is attempted, for if done at the time the increased oozing and secretion may interfere to a great extent with a successful healing, to say nothing of the increased discomfort to the patient.

The removal of a sufficient portion of the redundant turbinated tissue, should it encroach upon the operative field, is also to be remembered. We should never operate while there is present any acute inflammatory condition of adjacent structures, but wait until it subsides.

In removing the sutures we must be governed entirely by local conditions, as tension, healing, etc. As a rule, a silk suture will have done the work required of it in from seven to ten days, while wire or silkworm gut can be left in several days longer.

Care should be taken, when making the lateral incision along the alveolar border and also in using the periosteal elevator, that we do not injure the palatine vessels, as forcible use of the elevator, well anterior or backward, will cause such an injury. The lateral incisions should be packed lightly with gauze, as it helps retain, for the first forty-eight hours, the edges of the wound together.

The most favorable time for closure of these clefts is during the first two to four years of a child's life. If done at this age and before a child has begun to talk very much, it will be far easier to teach the little one the proper method of articulation, as few children begin to pronounce words with any degree of distinctness before they reach the end of the second year.

Too much should not, however, be promised in the way of articulation in our adult cases, as the speech function will not be as good as if the operation were done earlier; still, great strides can be made even with adult patients if they only persist in trying to articulate and talk.

Regarding the danger in doing a preliminary tracheotomy as an adjunct to this operation it is without foundation as properly done, and if the anæsthetic is administered by a competent man the danger is far less to the patient than by the old method of operation, as here no foreign substance whatever is allowed to enter the parts below the operative field, and we are permitted to treat the wound as though it were on the external surface of the body; and in this lies its superiority, as danger by the old method resulted nearly always from allowing substances to enter the œsophagus, the larynx, trachea, and its ramifications, and infection was liable, owing to exposure of the field operated upon.

In brief, then, the benefits to be derived from such an operation are as follows: The restoration of speech function, complete or partial. It allows the patient to eat without regurgitation of food, giving little or no trouble thereafter, so far as deglutition is concerned. It allows the patient to mingle on a par with his fellow beings. It does away to a very great extent, if not entirely, with the facial contortion while trying to speak. It lessens the catarrhal inflammation of nose and throat and improves the deafness, when existing, as well as relieving the distressing subjective sounds so frequently complained of by these patients. There will be a decided increase in weight, and where persistent headaches have been present and can be attributed to no other cause, and have received treatment without avail previous to the operation, they will often clear up completely when the cleft is closed, allowing a normal nasopharyngeal function to take place. In closing, I would emphasize this fact: that we operate on the cases while young, rather than allow them to go on to a later age, thus insuring the chances of a perfect articulation as well as a satisfactory surgical result.

116 WEST FORTY-EIGHTH STREET.

PERIMETRIC DIAGNOSIS.

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KANSAS CITY, MO.

THIS subject has been selected, in view of its importance and practical value, on account of the large amount of original research which has of recent years been devoted to it, the changes in detail which have improved the methods of examination on which it depends, and on account of the important relation of the visual field to a number of diseases which in earlier years were not recognized.

The examination of the visual field has been so perfected that it now yields many facts valuable to diagnosis, and not only to the diagnosis of the general ocular condition, but also to the more difficult diagnosis of intracranial lesions.

We have long been familiar with the gradual reduction of peripheral vision in retinitis pigmentosa, with typical hemianopia, with the perturbations of the color fields in hysteria, and with the vacillations of the field in glaucoma; but perimetry now contains much more, and seems on the threshold to knowledge of the distinguishing symptoms of primary optic atrophy, optic neuritis, and certain purely functional disturbances, as well as to their prognosis and treatment.

The field may be taken in three ways: 1. With the hand. 2. With a blackboard. 3. With the perimeter. In emergencies the hand may be used. There are serious objections to the blackboard. The perimeter should have a wide arc to afford a dark background. To give the most perfect results where fine work is necessary, as in diagnosticating minute scotomata, all the surfaces toward which the patient faces should be dull black, including instrument and wall or curtain.

A long, black rod carrier for the test object is better than a slide on the arc, since the noise the latter makes apprises the subject of its location. On the perimeter of Dr. Percy Dibble, of Kansas City, the test object is moved by a cord and pulley from the pivot—a very desirable improvement. In the periphery the object must be waved to and fro. Here the retina exhausts very rapidly, and moving objects are recognized while stationary ones are not.

The test object required will vary with the case. Ordinarily one five millimetres square is used, but ten or even twenty centimetres square may be required in amblyopic cases; while for small central defects three, two, or even one millimetre square may be necessary. Schweigger reports a case of homonymous hemianopia which he was enabled to demonstrate by employing an object no larger than the head of a needle. In semiconscious persons the winking reflex can often be utilized. A bright light is brought into the field from the periphery, and blinking watched for as it approaches the centre and is brought nearer the eye.

Physiologically the field is circumscribed by the limits of the retina, the anatomical structures of the face, the palpebral orifice, the size and plane of the pupil, and the depth of the anterior chamber. Thus in myopia the field is smaller because the anterior chamber is deeper, the plane of the pupil further back, and the optic axis longer, so that the retina does not reach so far forward. In hypermetropia the reverse is the case. The field expands with the use of strychnine. A larger field is secured by testing from the centre to the periphery, and by using brighter objects.

The limits of the field for colors can not be arbitrarily stated, since the transition from light perception only at the periphery to saturated color nearer the centre takes place gradually. The color sense varies with the individual; but in women, who have a keener color sense, the color field is generally larger than in men. The peripheral zone (beyond 45°) lacks color entirely. Normally yellow has the widest extent, then blue, then red, and green least. In hysteria the greatest mutations in the color fields may occur.

For these examinations the eye should be in the adapted state; the non-adapted eye, as understood by Aubert, being one in which the retinal nerve elements, which are decomposed by the action of light, have not been restored to the normal. Especially should the eye repose briefly before testing the color sense, for the non-adapted eye does not appreciate colors nearly as well as the adapted eye.

In order to secure uniform results, Heidelberg flower-paper is taken as the standard in color tests. It should be clean and in strong daylight.

Early in optic-nerve atrophy and in morbid processes connected with pressure on the optic tract or Gratiolet's radiation the color fields contract, the field for white and form remaining the same. The normal limits for form and white will be secured accurately by either a dull gray object in strong daylight, or by a bright white object in a partly darkened room.

These precautions being taken, if the field for white is found normal, with great reduction of the color fields, one of three conditions is present: 1. Idiopathic hemeralopia. 2. The early stage of progressive optic atrophy. 3. A purely functional nerve disorder. In symptomatic hemeralopia, on the other hand, the whole field is contracted in diminished light, or to a gray test object in bright daylight, and zonular defects and ring scotomata may be discovered.

A typical case of idiopathic hemeralopia is reported by Wilbrandt which is very interesting. The field for white was almost normal by strong daylight, but by reduced light, in which a healthy eye still read $\frac{6}{6}$, the color sense was lost entirely and the field for white contracted to near the twentieth-degree circle. This hemeralopic field may be symptomatic of retinitis pigmentosa, chorioiditis syphilitica, chorioiditis disseminata and other chorioiditic conditions, and also more rarely of myopia and senility.

In absolute central scotomata there may be difficulty in outlining the fields. If there are bilateral central scotomata the physiologically best-developed point near by should be used as the fixation point. If the scotoma is unilateral and the visual axes are concurrent, the patient may be asked to fix with the sound eye, and then, telling him to hold the eye steady, the sound eye covered. Of course, the cover must be removed at intervals to refresh the patient's memory, and the eye be narrowly watched lest it rotate.

In large, bilateral, absolute central scotomata the field may sometimes be secured by having the patient locate the fixation object with the forefinger, and telling him to direct the eye as though looking at the finger-tip. If the scotoma is for one or more colors, and not for the smallest white object, it is *relative*. When, in a scotoma, the colors are not correctly recognized, the tints being modified erroneously, the scotoma is called *indistinct* or *inaccurate*. Besides this there is Förster's classification of central scotomata into positive and negative. In positive the patient sees a dark spot. In negative he perceives a hazy, blurred image. There are also pericentral and paracentral scotomata. It is important to note whether scotomata are unilateral or bilateral, and, if the latter, whether they are symmetrical, homonymous, binasal, or bitemporal.

Usually chorio-retinal changes in the macular region cause the positive, and disease of the papillomacular fasciculus in the optic nerve causes negative, scotomata. In relative scotomata sketching the field with small black points is better than using large colored objects, and is extremely important to prognosis, since this gives in advance the form the field will have after the disease has progressed.

Central scotomata contract or expand, become paracentral, may disappear or be permanent. This is also true of hemianopic scotomata, with the proviso that they must remain limited to the half field in which they occur. In rare instances the physiological scotoma of Mariotte may become so large as to be subjectively noticeable. It is increased in size by choked disc, peripapillary chorio-retinitis, retained medullary sheaths on the optic-nerve fibres spreading to the retina, and coloboma.

The intermediate zone (15° to 45°) shows ring scotomata. Here isolated scotomata appear which gradually merge, forming first a semilunar crescent and then a complete ring. They may result from chorio-retinitis luetica, chorioiditis syphilitica, retinitis pigmentosa, and sometimes from multiple sclerosis involving the optic nerve, as in a case reported by Uhthoff. In these cases the field is found contracted.

In certain optic-nerve atrophies an absolute central scotoma may occur with a ring-shaped field of vision left occupying the intermediate zone, which is gradually encroached upon as complete blindness develops. In the visus reticulatus or cribriform field, many scotomata are scattered over the field, generally the larger ones being in the periphery and the smaller nearer the macula.

Very greatly contracted fields make the patient act as though looking through a tube; he orientates largely by memory, his eyes have a peculiar roll, and his tapping gait makes his helplessness easily recognized. The tapping gait may also be caused by loss of the lower part only of the binocular field.

Insular, sectoral, planelike, or concentric contraction defects in the peripheral zone can be recognized by examination only, the vision here being so poor that the patient does not notice them.

I. THE FIELD IN DISEASES OF THE FUNDUS.—In lesions of the retina the symptomatology of the visual field differs as the *inner, nerve-fibre, or conducting layers, or the outer, epithelial, or perceptive layers* are involved. In the former the failure of vision depends on two things: 1. Obstruction to the transmission of light. 2. Obstruction to the transmission of nervous impulse. Consequently it will be understood why in diseases of the *inner layers* we find the field the same in reduced as in full daylight, negative scotomata frequent, the field often limited concentrically, with peripheral scotoma forming sector-shaped re-entering angles, nyctalopia, and failing color sense; while in diseases of the *outer layers* we find hemeralopia, a concentrically contracted field, and, failing direct vision by reduced light, a reticulated field of irregular, zonular, or circular, perhaps central, positive scotomata, torpor retinæ, metamorphopia, and imperfect color sense.

The colors by strong daylight appear as to the normal eye in reduced light. Green looks bluish, yellow looks reddish, and violet looks gray.

In *congenital malformations* of the fundus, as medullated nerve fibres extending from the disc and coloboma of the retina or chorioid, or both, the perimeter gives the most reliable information as to the extent of the defect. Although the ophthalmoscope is invaluable in diagnosticating the presence of retained medullary sheaths, the perimeter only can be relied upon to fix the amount of deviation in function. This will vary with the degree of opacity of the sheaths.

"The exact size of *colobomata of the retinal tunic* can be established only by the perimeter" (Wilbrandt). The white test object should not be used for this purpose, since it may not be discerned as a result of chorioidal disease; but the Lindsay-Johnson lamp, emitting parallel rays of light, carried on the arc of the perimeter will show the exact amount of deficiency of the retina.

In the degeneration of the retina known as *retinitis pigmentosa,* red and green depreciate early (Oliver), the vision and the field are typically hemeralopic, and the latter slowly contracts concentrically to the fixation point, which, too, may finally disappear. Rarely broad, ring scotomata form, or the field contracts irregularly.

In the hypertrophy of the retina known as *retinitis proliferans* the perimetric findings do not agree with the ophthalmoscopic. The field is much better than would *a priori* be expected. The periphery of the field contracts in a serrated manner, or Mariotte's spot expands accordingly as the disease originates in one or the other place. The field may eventually become extinct. In the rare *central relapsing syphilitic retinitis of Alexander* central vision fluctuates until a central scotoma forms.

In accentuated cases of *retinitis albuminurica* scotomata for colors, or for white and colors, sometimes form; or the field may become that of an optic neuritis. In retinitis serosa there is concentric contraction of the field, and in retinitis parenchymatosa the same, with positive scotomata (de Schweinitz).

The central punctate retinitis of Mooren, which occurs in advanced years, has an unaffected peripheral field, and often central scotomata. In *retinal hæmorrhages* generally the field is disturbed less when they are due to hæmic disease, as leucæmia, than when due to vascular disease, as atheroma. The blood usually lies between the retina and lamina vitrea, and hence affects the field by impeding light and by impairing the nutrition of the retina by pressure. The field is not commonly affected unless the lesion is central or nearly so, when the scotoma is frequently positive. When the extravasated blood follows the course of a vessel the resulting scotoma has a tendency to be tongue- or sector-shaped.

In *embolism* of the *central artery* of the *retina* the field is changed according to the part of the retina which is deprived of blood. Generally the presence of a cilio-retinal artery preserves the macula and an oval area around it. Even when the trunk is occluded part of the nasal retina may survive. Central scotomata rarely occur.

In *ablatio retinæ* there are corresponding scotomata in the field, generally surrounded by an area of failing vision. Here again, as in several affections mentioned above, the loss of vision is by no means always commensurate to the lesion visible with the ophthalmoscope. Almost half of the retina may be detached with comparatively slight lapse in function for a time, as in a case reported by Leber.

In *traumatic lesions of the retina* the perimeter may show much greater defects than the ophthalmoscope. In the *traumatic anæsthesia* of Leber the field is contracted and the vision reduced. The defect may persist indefinitely. In *perforating wounds* with a small visible lesion a very large positive scotoma, shaped like a longitudinal section of a truncated cone, may occupy the field, extending from the lesion outward to the periphery over the area supplied by the severed fibres.

In *commotio retinæ* with œdema (R. Berlin) and *ruptured retina* (Loring), as well as some non-traumatic diseases, as *solar retinitis* (Mackay, Duane) and scotomata from malnutrition (Förster), the fields are changed according to the lesion.

The perimetry of *diseases of the chorioid* possesses the characteristics of diseases of the epithelial layers of the retina as given above, as these are quickly affected. Usually there soon develops a chorio-retinitis, involving all the layers of the retina. However, in quite extensive chorio-iritis disseminata the field may be normal.

Early in *chorio-retinitis syphilitica* by bright daylight the field may be normal or slightly concentrically contracted (Förster). In reduced light island-shaped and zonular defects appear. Central scotomata sometimes occur. Ring scotomata and zonular defects are not infrequent in the syphilitic type, although Schoen thinks annular defects at least partly due to the arrangement of the venæ vorticosæ. Perlia adduces data showing 56.5 per cent. of all cases of annular scotomata to be due to chorio-retinitis syphilitica. The field may become riddled—the retiform field. In *sclero-chorioiditis posterior* there is a tendency for the blind spot to increase in size.

In *glaucoma* the field varies greatly with the progress of the disease. Generally, the field contracts, central vision becomes impaired, and the color sense is gradually lost as the disease advances. In *glaucoma* the rule is for the *fields for form, white, and colors to contract proportionately.* In optic atrophy, whether neuritic or gray, it is otherwise. The difference in the perimetry of these conditions is of priceless worth in differentiating them in certain cases which are otherwise apparently indistinguishable. Thus cases of simple, chronic glaucoma may present themselves for diagnosis at times when the eye is quiescent, with none of the symptoms by which glaucoma is ordinarily diagnosticated, but with a history of attacks of pain, photopia, and dim vision, and with negative or inconclusive objective findings.

The diagnosis of such a case will be materially assisted if it is borne in mind that the early cases of slow atrophy in which the ophthalmoscopic findings are negative or inconclusive have color fields which are reduced greatly *out of proportion to the form field.* The first loss of color may or may not be central if perchance the case is neuritic.

Schmidt-Rimpler has reported a case of glaucoma of ten years' standing which possessed a normal field. Vision tends to linger longest in the upper and lower outer quadrants of the field. In papillitis, as in glaucoma, if the process develops slowly the field may be very slightly affected.

The nerve fibres seem to have time to move aside or become accustomed to pressure, so that their conductivity is not impaired. If the cause of the *papillitis* is an intracranial tumor, the field may be hemianopic. As the disc swells Mariotte's spot becomes abnormal; there may be regular or irregular peripheral contraction and defective color sense, red and green disappearing first. The latter may or may not be accompanied by change in the field for white and form. Of course, as atrophy develops the field becomes irretrievably lost. Before leaving this group of diseases with irregular field manifestations it may be well to state that they may cause a variety of scotomatous defects.

It is not in the foregoing group of diseases, which yield such well-defined ophthalmoscopic findings, that the perimeter finds its peculiar value, although it is still indispensable. Of all the diseases of the retina, retinitis pigmentosa only yields a typical field, and above all ablatio retinæ is the disease in which perimetry is more important.

II. THE FIELD IN DISEASES OF THE NERVE.—Of intraocular optic-nerve affections enough has been said. Concerning the retrobulbar portions of the optic nerve, primary or progressive atrophy will first be considered. The perimetry of primary atrophy, of secondary atrophy, and the chronic neuritis of toxic amblyopia affords such diagnostic data as are of great value in differentiating these conditions. Often the ophthalmoscopic findings are normal, confusing, or positively similar, so that the field assumes magnified importance to the physician.

In *true primary* or *progressive atrophy,* that in which the disc grows gray, which is due to spinal sclerosis, as tabes dorsalis, the field concurs with the fact that all the nerve fibres are attacked uniformly, and consequently that part of the retina most feebly innervated, that corresponding to the periphery of the field, succumbs first. However, it is contended by some observers that the periphery of the nerve degenerates earliest (Deyl).

Although the typical primary atrophy of which I speak is that which is probably most frequently found as a result of tabes dorsalis, there is sufficient clinical evidence to show that it may arise from other scleroses of the cord, multiple and lateral; also from general paralysis of the insane and various deleterious agencies acting on the nervous system, as cold, venery, malnutrition, syphilis; certain diathetic conditions, as the rheumatic, diabetic, and gouty; the toxines of some diseases, such as malaria; and the action of some drugs, such as tobacco, alcohol, and quinine.

The equally proportionate manner in which peripheral and central vision, form and color sense, fail is of the extremest value. In typical tabetic atrophy a central, absolute scotoma is never found, and the absence of such a scotoma in simple progressive atrophy may generally be relied upon as a safe guide. These patients, however, if they are abusers of tobacco or alcohol, may present a central scotoma of neuritic origin.

Ordinarily as central vision declines the field diminishes. As the field diminishes the color fields contract, the smallest, that for green, disappearing first. Only rarely does red vanish first. In order to secure these data the field must be properly taken. A gray test object should be used, such as will just show the normal field limits of a healthy eye in full daylight. Then the atrophic field will be found contracted. *Per contra,* with a bright, white object in full daylight no contraction is discernible.

Since colored light makes less impression on the retina than white light, the color fields shrink earlier than does the field for white and form; hence the color fields are found reduced while the field for white is still normal.

This leaves a color-blind zone wider than normal surrounding the colors as a *diagnostic feature* of uniform degeneration of the nerve.

The eyes are affected bilaterally, but a considerable time may elapse between the inauguration of the process in the two eyes. Although the proportionate failure of all the visual functions is of the greatest value in diagnosticating primary atrophy, still there is another and much smaller class of cases of primary atrophy in which clearly defined defects occur in the field while other parts of the field appear normal.

However, the weight of clinical evidence justifies us in considering the above-described field as the rule in primary atrophy—a rule which is not very often deviated from. In addition there is generally a positive ophthalmoscopic change.

In *secondary atrophy* with the lesion far back the disc may be normal, while in certain neuritic conditions a papillitis may be seen. In *primary atrophy* it is very unusual to find scotomata, central, peripheral, or ring, or very good central vision with a greatly reduced field, or very much reduced central vision with a comparatively well-preserved field for white and colors.

In primary atrophy, as well as in secondary and in neuritis, the defects depend, as intimated above, on the brightness of the test object, and also very largely on its size. Thus in the more advanced stages, after color blindness has supervened, a reduced field can be secured with a large object, ten centimetres square, where none is obtainable with the ordinary five-millimetre-square one. Later still, when the patient can not even count fingers, a field can be secured with a bright light, as the Lindsay-Johnson lamp.

In any case, successive examinations should be made. They will determine the progress of the case. It should be known whether the patient is using strychnine, on account of the power of this drug to strengthen vision and extend the field. If central vision is found to fail more rapidly than the peripheral, a central scotoma can be prognosticated. In the same way any irregularity in the field will indicate greater involvement of particular nerve bundles.

If central visual acuity and color vision remain normal while the disease is seen to advance in other regions, the papillo-macular bundle is known to be unaffected, a condition which may be maintained. It is even possible for sectoral defects to appear. In these cases of unequal involvement of the nerve, which, I repeat, are rare, close inspection of the disc may reveal part of it unatrophied. This is more likely to be perceptible when the papillo-macular bundle escapes on account of its relatively large size. Uhthoff has reported two cases bearing on this point. In one, a case of primary atrophy, the color limits almost coincided with the field limits, and in the other there was bilateral inferior hemianopia—not, as is usual, from a tract or cortical lesion, but from symmetrical disease of the nerves. Both were cases of tabes dorsalis and illustrate the fact that certain fibre bundles may be attacked and destroyed, and others not suffer in this process, which ordinarily spares none.

Probably most of these cases with the general appearance of progressive atrophy which have anomalous fields are dependent on neuritis far posterior in the nerve. It is quite important to the welfare of the patient that this be recognized. If the perimetry of both conditions is understood there is little danger of a mistake. The vision can probably be saved if it is neuritis, but the prognosis is absolutely bad if it is primary atrophy. The former may be dependent on some malevolent influence which can be removed or, being gummatous or syphilitic, will yield to iodide or mercurial inunctions. But primary atrophy, at least when it is tabetic, as is generally the case, is metasyphilis, according to Möbius, and mercury is contraindicated.

It is well known to expert oculists that in those cases in which the disc is unusually far advanced in atrophic pallor and still retains a remarkably good field, the disease runs a very slow course—in fact, in some cases almost remains stationary indefinitely. A normal correspondence between the color and form fields has the same favorable significance. If the colors fail with disproportionate rapidity (Knies) or develop sectoral defects the prognosis is dubious.

Wilbrandt's modification of Jacobsohn's rules in primary atrophy may be epitomized as follows:

1. If central vision and the field are proportionately impaired, the whole nerve is equally attacked.
2. If central vision is reduced and the field shows sectoral scotomata, the whole nerve is attacked, but irregularly.
3. If central vision is much reduced and the field almost free, a central scotoma is forming.
4. With central vision intact and the field disappearing, the papillo-macular fasciculus is free.

(To be concluded.)

TYPHOID INFECTION OF THE UTERUS.*

By AUGUST JEROME LARTIGAU, M. D.

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As a natural sequence and derivative of the study of the experimental side of typhoid infections, and coexistent with the evolution of the conception of typhoid fever, may be traced the development of our knowledge of the ubiquity of the typhoid bacillus in human pathology. Appreciation of its rôle in various pathological processes finds ample expression in the abundance of literature upon this subject, largely as examples of post-typhoid lesions. But notwithstanding the rapidly augmenting number of reports of atypical typhoid infections, instances of invasion of the uterine cavity by this micro-organism are limited to a few recorded examples published within comparatively recent date. The great interest recently manifested in the pyogenic attributes of the typhoid bacillus and the rarity of its localization in the uterus have led me to report the two cases which form the chief subject of this paper.

Regarded as an anticipation of the subsequent bacteriological realization of this form of disease, Kühnau's † case is not without interest. The patient was a woman, aged thirty-two years, who was admitted to the hospital on April 29, 1895. For some time previous she had been under observation in the outdoor department. She was taken sick on April 20th, and labor set in April 26th; the delivery was normal, and the child was born alive and healthy. The day preceding entrance into the hospital there were somnolence and delirium. On admission, the temperature was 39° C., the abdomen was distended, and some ileo-cæcal gurgling was noted. The spleen was not palpable, and the liver apparently not enlarged; there was some diarrhœa. An examination of the urine showed the presence of some albumin and the diazo reaction. On May 6th a few rose spots were detected; the spleen was just palpable. The following day several foul-smelling clots were removed from the uterus. Three days later a culture taken from the blood contained typhoid bacilli. Finally, on June 17th, the patient died. At the autopsy no intestinal lesions were observed; the mesenteric glands were swollen, and showed areas of necroses and abscesses; the kidneys also contained abscesses, and the left ovarian vein contained a partially softened thrombus. The cervix was covered with a hæmorrhagic membrane.

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* An abstract of this paper was read before the New York Pathological Society, February 14, 1900.

† Kühnau. Ein Fall von Septicopyaemia typhosa. *Berlin. klin. Wochenschr.*, July, 1896, p. 667.

The bacteriological examination of the pus from the mesenteric lymph glands, kidney abscesses, thrombus in the ovarian vein, and splenic pulp demonstrated bacilli morphologically similar to and culturally behaving like the bacillus of typhoid fever. In the discussion of his case Kühnau argues two possible sources of infection—one from the uterine cavity and the other from the intestine. For neither has he any positive evidence in the form of bacteriological support.

In contradistinction to this observation may be cited the more conclusive examples studied by G. W. Dobbin * and George Blumer,† who were able to demonstrate the presence of the bacillus of typhoid fever in the cultures taken in one instance from the lochia and in the other from the uterine cavity proper. Both cases occurred in puerperal women, unlike our own in that respect.

The case of Dobbin was in a woman, aged twenty-four years, who was admitted to the Johns Hopkins Hospital on November 17, 1897, complaining of fever following confinement. Five days before she had given birth to a child, that lived a day and a half. Up to the time of her confinement she had been well. On the second day post partum, November 13th, she was found to be suffering from bronchitis, with a temperature of 103° F. The following day several clots and pieces of placenta were removed from the uterus. When admitted to the hospital her temperature was 103.1° F., and the physical examination revealed a papular eruption on the lower thorax and abdomen, which in places simulated rose spots. There was no enlargement of the spleen, but some iliac gurgling and tympanites were present. The uterus was large and movable. The fever was irregular, running as high as 107° F. for the first week after admission, but it gradually declined from this time. Blood obtained on the fifth day gave a well-marked positive Widal reaction; cultures from the median basilic vein remained sterile. The bacteriological examination of the uterine lochia showed the presence of the *Streptococcus pyogenes*, the *Staphylococcus pyogenes aureus*, typhoid bacillus, and an unidentified bacillus. Dobbin thinks that the source of infection was from without. I am constrained to regard this, however, as extremely improbable.

More recently Blumer published his case, which was that of a married woman who was confined by a midwife. On the sixth day of the puerperium the patient, shortly after a hearty meal, was taken with dyspnœa and incoherency of speech, and rapidly became delirious and semicomatose. When seen by a physician, about four hours after the appearance of her trouble, the temperature was 100.8° F., pulse 120; the tongue was almost black and swollen to two or three times its normal size. The heart and lungs seemed normal. The abdomen was greatly enlarged, but nowhere tender; the liver dullness reached one third of the way down from the costal margin to the umbilicus. The spleen dullness was much increased. The uterus was as much contracted as could normally be the case thus soon after labor. The urine was constantly passed involuntarily. Bowels constipated. Scattered over the chest and abdomen was a fine, papular rash, in places suggestive of rose spots. Two days after the onset of her sickness the patient died. The child remained alive and showed no signs of any illness resembling typhoid fever. At the autopsy there were found swelling and ulceration of Peyer's patches in the lower end of the ileum, acute spleen tumor, swelling of the mesenteric lymph glands, subinvolution of the uterus with partial retention of the placenta, multiple gas cysts in the small intestine, and emphysema of the subcutaneous tissues of the neck and back. The cultures from the heart's blood, liver, spleen, and uterus contained the bacillus of typhoid fever and the *Streptococcus pyogenes*. It is also probable that the *Bacillus aerogenes capsulatus* was associated with these micro-organisms. The *Bacillus typhosus* existed alone in the mesenteric glands.

The problem of bacterial transmission from mother to fœtus is so inseparably connected in some of its phases with the question of uterine infection in this group of cases that explanation, at all events a part of it, will necessarily be sought for in the results of experimentation and observations along these lines. That bacteria filter through the placenta into the blood of the fœtus, with or without demonstrable placental lesions, has received final proof. Although the passage of micro-organisms from the mother to the fœtus has been abundantly proved by the researches of Malvoz,* Wolff,† Birch-Hirschfeld,‡ Simon,# Lubarsch,‖ and others, it can not be said that the ultimate conditions underlying its occurrence have been shown. Chantemesse and Widal,[*] Hildebrand,[†] Eberth,[‡] Ernst,[#] Frascani,[||] Janiszewski,[△] Freund and Levy,[◊] Dürck,[‡] Étienne,[↕] and Speier[‡] have contributed a small number of observations of the transmission of the typhoid bacillus from mother to fœtus in human beings—suggestive facts which lend additional weight to the internal origin of this type of infection, certainly for the two cases reported by Dobbin and Blumer. The presence of typhoid bacilli in the intestinal dejecta and their frequent occurrence in the urine of patients already suffering from typhoid fever will probably be shown to be important considerations in the determination of the mode of invasion in another still rarer category of cases.

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* George W. Dobbin. A Case of Puerperal Infection in which the *Bacillus typhosus* was found in the Uterus. *American Journal of Obstetrics*, August, 1898, p. 185.

† George Blumer. A Case of Mixed Puerperal and Typhoid Infection in which the Streptococcus and the Typhoid Bacillus were isolated both from the Blood and the Uterine Cavity. *American Journal of Obstetrics*, 1899, vol. xxxix, No. 1.

* Malvoz. Sur la transmission intraplacentaire des microorganismes. *Annales de l'Institut Pasteur*, 1888, p. 121.

† Wolff. Ueber Vererbung von Infectionskrankheiten. Virchow's *Archiv*, Bd. cxii, p. 196.

‡ Birch-Hirschfeld. Ueber die Pforten der placentären Infection des Foetus. Ziegler's *Beiträge zur pathol. Anatomie*, etc., Bd. ix.

# Simon. Beiträge zur Lehre von dem Uebergang pathogener Microorganismen von Mütter auf Frucht. *Zeitschr. für Geb. und Gyn.*, Bd. xvi, Heft 1. Speier's Inaugural-Dissertation.

‖ Lubarsch. Uebertragung von Infectionskrankheiten von Ascendenten auf Descendenten. Lubarsch und Ostertag, *Ergebnisse*, 1896, Bd. i.

For the clinical histories of the following cases I am indebted to Dr. Howard Van Rensselaer and Dr. Willis G. MacDonald, of Albany, New York.

Case I.[**]—Mary L. J., married, aged thirty-one years, American, entered the Albany Hospital, March 11, 1899, complaining of general abdominal pain and tenderness, most marked in the region of the left iliac fossa.

Family History.—Father died of tuberculosis. Mother alive and well. Two brothers died of meningitis in infancy. One brother and four sisters alive and well.

Personal History.—As a child she suffered from measles, chicken-pox, and mumps. During the month of November, 1898, the patient was sick for three weeks with an acute febrile malady, which was diagnosticated typhoid fever.

Present Illness.—This began about five weeks ago, when she was taken ill with sharp, paroxysmal pains, starting behind in the lumbar region and extending forward on either side toward the umbilicus. For the first two weeks the attacks were infrequent, but since have progressively increased both in frequency and severity—so much so that at the time of admission the pain is constant, and referred in large part to the iliac region on the left side. The last menstruation occurred in the first week in January, 1899.

On entrance into the hospital the temperature taken in the mouth was 102.4° F.; pulse 118, regular, of fair volume, and not dicrotic; respirations, 27. The build is slim, body moderately well nourished; intelligence good. Pupils are normal and react to light; conjunctivæ normal. Tongue is covered on the dorsum with a thin white fur. No œdema. No eruption on the skin. Examination of the heart is negative. The lungs give no evidence of any abnormity. Spleen is not palpable; the liver is apparently normal. The abdomen is tender, more particularly on the left side in the iliac fossa. Palpation is negative. Vaginal examination shows a normal cervix. Bimanual palpation: Uterus about normal in size, the body directed forward, and freely movable. On the left side an indefinite mass the size of a hen's egg, not freely movable, and firm to the touch. The examination of the opposite side is negative.

March 12th.—An abdominal section was done at 12.25 p. m. Diagnosis of ectopic pregnancy confirmed, and removal of left tube and ovary with pregnancy. The patient returned in good condition; pulse, 125; respiration, 30. At 6 p. m. complained of pain in abdomen; pulse, 115 and intermittent; temperature, 101° F. Urine normal.

13th.—Considerable nausea and vomiting; evening temperature, 100.6° F.; less pain in abdomen.

14th.—Nausea and vomiting persist. Complains of headache; restless; temperature, 100.1° F.; pulse regular, of good volume; heart sounds normal. Lungs showed nothing abnormal. Slight blood-stained discharge from uterus.

15th.—Dyspnœa during the night; mind clear; respirations, 36; pulse, small volume, intermittent, 150 to the minute; temperature at 8 a. m., 100.2° F.; at 1 p. m., 102.6° F. Died at 2 p. m.

Autopsy (an hour and a half after death).—Anatomical diagnosis: Typhoid fever without intestinal lesions; laparotomy wound (removal of left tube and ovary for extra-uterine pregnancy); acute splenic tumor; cloudy swelling of the liver and kidneys; endometritis; triple-phosphate calculus in pelvis of right kidney.

Body a hundred and sixty-one centimetres long, of slim build and sparely nourished. Surface of the body generally pale. Rigor mortis absent in upper and lower extremities. Slight livor mortis of the dependent parts. Pupils midwide and equal. Mucous membrane pale. In the midline of the abdomen is a linear incision eleven centimetres long, extending from the pubis upward, which appears perfectly healthy.

Brain and cord not examined. Abdomen: Parietal peritonæum presents a normal appearance; the visceral layer is smooth, glossy, and moderately injected, especially that portion over the lower third of the ileum. Omentum contains a few discrete pinhead- to pea-sized hæmorrhages. Foramen of Winslow not patent; diaphragm on the right side, fourth space; on the left side, fifth space, in the mammary line. Thorax: Both pleural cavities are free from fluid. The pericardium is normal; the heart is distended with fluid blood and some red clots and shows no abnormity. Both lungs are free from adhesions, crepitant, and on section light pink in color. Bronchi and pulmonary blood-vessels normal.

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[*] Chantemesse and Widal. Bacille typhique et étiologie de la fièvre typhoïde. *Archives de physiologie*, 1887, p. 19.

[†] Hildebrandt, G. Zur Casuistik des placentären Ueberganges der Typhusbacillen von Mutter auf Frucht. *Forts. d. Med.*, 1889, Bd. vii, No. 23.

[‡] Eberth, C. J. Geht der Typhusorganismus auf den Foetus über? *Fortschritte der Medicin*, 1889, Bd. vii, No. 5.

[#] Ernst, P. Intrauterine Typhusinfection einer lebensfähigen Frucht. Ziegler's *Beiträge zur path. Anat.*, etc., Bd. viii.

[||] Frascani. Osservazioni cliniche e ricerche sperimentali sul passagio del bacillo del tifo dalla madre al feto. *Rivista generale ital. di clinica med.*, 1892, pp. 282, 348.

[△] Janiszewski, Th. Uebertragung des Typhus auf den Foetus. *Münch. med. Wochenschrift*, 1893, No. 38.

[◊] Freund und Levy. Ueber intrauterine Infection mit Typhus abdominalis. *Berliner klinische Wochenschrift*, 1895, No. 25.

[‡] Dürck. Ueber intrauterine Infection mit Typhus abdominalis. *Berliner klinische Wochenschrift*, 1895, No. 25.

[↕] Étienne. *Gaz. hebdom. de méd. et de chirurg.*, 1896, No. 16.

[‡] Speier. *Zur Casuistik des placentären Ueberganges der Typhusbacillen von der Mutter auf die Frucht.* Inaugural Dissertation, Breslau, 1897.

[**] This case has already been reported in connection with another subject. *New York Medical Journal*, July 29, 1899.

The spleen is adherent to the omentum by a few old bands; the organ measures 15 × 9 × 5.5 centimetres; the capsule is smooth and not wrinkled; consistence diminished; the cut surface reddish-brown; the trabeculæ are normal and the pulp is apparently augmented; Malpighian bodies are prominent. Liver: Increased in size; capsule smooth; consistence softer than normal; on section, of an opaque, grayish color and the lobules indistinct. Gall bladder: Moderately distended with thick, dark-colored bile. Kidneys: Slightly swollen, especially the cortical portion of the organ; consistence about normal. The pancreas, suprarenal capsules, and retroperitoneal glands show nothing abnormal. The same may be said of the aorta, stomach, bladder, and vagina. The mesenteric lymph glands are not swollen. The intestine shows absolutely no evidence of past or recent changes; the mucous membrane is normal in appearance. The uterus measures 5.5 × 4 × 3 centimetres; the consistency is normal; the peritoneal surface is smooth, glossy, free from adhesions, and moderately injected. The walls are not increased in thickness; cavity patent; endometrium soft, red, congested, markedly so in fundus of the organ. Covering the mucosa is a considerable quantity of thick, sticky hæmorrhagic mucoid material.

Microscopical Examination. — The tissues studied were all hardened in ninety-five-per-cent. alcohol. The sections of hardened tissue were stained with hæmatoxylin and eosin, Van Gieson's picro-acid-fuchsine, and by Flexner's methylene-blue and Gram-Weigert methods.

Histological examination of the heart shows nothing beyond a slight degree of fragmentatio myocardii, with dilatation of the capillaries and small veins, in both of which blood may be seen showing a leucocytosis of polynuclear forms. The sections from the lung, intestines, pancreas, and adrenals add nothing to the macroscopical findings. In addition to well-marked cloudy swelling and some more or less localized areas of fatty degeneration, the liver shows no other changes. The "lymphomata" commonly found in the liver of ordinary cases of typhoid fever were entirely absent, as were also any areas of focal necroses. In the sections of the spleen some hyperplasia of the lymph cells was noted, with considerable congestion. In the kidney the epithelium of the convoluted tubules was markedly swollen, granular, and often devoid of nuclei; some of the epithelial cells were desquamated. Uterus: The superficial strata of epithelial cells were desquamated; those remaining, swollen; submucous and mucous tissues filled with polynuclear leucocytes, small round cells, *débris*, and partly broken-down cellular elements. Musculature normal.

Sections of the kidney and lung stained with Weigert's fibrin stain showed very few diplococci, limited to the small blood-vessels. In sections of the liver, ileum, and uterus, stained by Flexner's method, occasional bacilli (a few clumps in the liver), morphologically similar to the *Bacillus typhosus*, could be distinguished; in the sections of the uterus the bacilli were only made out in the mucosa. Cocci were likewise detected in the mucosa of this organ.

Bacteriological Examination. — Agar and gelatin plate cultures were made from the blood of the heart, left lung, spleen, liver, gall bladder, kidney, operation wound, peritoneal cavity, and uterine cavity. The cultures from the lung, operation wound, and peritoneal cavity remained sterile. From the heart's blood and spleen a pure growth of an oval or elongated coccus, sometimes in pairs, more often single, was isolated, corresponding in its tinctorial and cultural reactions to the *Diplococcus lanceolatus.* It was pathogenic for rabbits, both in subcutaneous and intravenous inoculations.

The plate cultures from the uterus contained two sets of colonies—about twenty-five to thirty small pin-point, gray, translucent, discrete colonies in the depths of the medium. Under the low power they appeared finely granular, oval in form, with a regular outline; the second set consisted of seventy or eighty discrete pin-head-sized or slightly larger white colonies, which by transmitted light had a yellow tinge. The latter were made up of not very long, rather thick bacilli, while the former consisted of round cocci, sometimes single, grouped, or in short chains. Culturally, the colonies made up of bacilli have behaved as follows:

Slants of agar-agar: A profuse, slightly elevated, moist, white growth with regular margins.

Blood serum: The growth was equally rapid with that on agar-agar, and presented a similar appearance.

Gelatin stab: A fine, somewhat scanty, white growth along the line of inoculation. No liquefaction of the gelatin at the end of sixteen days.

Potato: A moist, glistening, scanty growth, which was just perceptible to the eye.

Litmus milk: Very slight acidification of the medium, but no coagulation of the milk.

Alkaline bouillon: The medium became uniformly cloudy at the end of twenty-four hours.

Dunham's peptone solution: The appearances were identical with those of the bouillon. No indol reaction could be obtained.

Stab inoculations into glucose, lactose, and saccharose agar showed a white growth along the line of inoculation, but gave no evidence of gas formation.

Hanging-drop preparations from twenty-four-hour-old bouillon cultures contained bacilli which were actively motile. In cover slips from similar young cultures stained by Pitfield's method might be seen bacilli having ten to twelve flagella (peritrichal arrangement). Tested with sera from known cases of typhoid fever, positive Widal reactions were obtained. Blood taken from the subject post mortem gave a positive Widal reaction with this bacillus as well as with other known cultures of the bacillus of typhoid fever.

Bacteriological diagnosis: *Bacillus typhosus* (Eberth-Gaffky). Pure growths of the typhoid bacillus culturally and morphologically similar to the above were isolated from the liver, gall bladder, and kidney. The coccus associated in the uterus with the typhoid organism was identified as the *Streptococcus pyogenes.* One cubic centimetre of a young bouillon culture of the streptococcus subcutaneously injected into a three-quarter-grown rabbit produced no untoward effects beyond a moderate local reaction.

Case II.—Belle M., American, aged twenty years, was admitted to the Albany Hospital suffering from pain in the head and limbs.

Family History.—Both parents are alive and well. Two brothers and one sister are also living and in good health. Maternal grandmother died of pulmonary tuberculosis.

Personal History.—Mumps and measles as a child. Began to menstruate at seventeen years; irregular. No other illness.

Present Illness.—Ten days ago she was taken ill with severe pain in the head, back, and limbs, accompanied by anorexia and vomiting. For the first three or four days there was some diarrhœa. Nose-bleed two or three times a day for the first week.

At the time of admission she was feverish, skin hot and dry; pulse 100, regular, and not dicrotic. The temperature in the mouth was 103° F. The patient is a well-built, well-nourished woman; face heavy and apathetic; responds to questions slowly. Pupils equal; conjunctivæ slightly diffused. Dorsum of tongue coated with thick brown fur. No glandular enlargements; no œdema. Heart and lungs normal. Abdomen somewhat distended and tympanitic. Spleen just palpable on deep inspiration; splenic dullness augmented. Liver dullness apparently increased. Some tenderness and ileocæcal gurgling on the right side. A few discrete papules similar to rose spots may be seen over the abdomen.

March 22d.—Condition about the same. The urine is dark amber in color, fairly clear, of acid reaction, and does not contain sugar or albumin. No casts were found in the sediment.

25th.—The temperature has ranged between 103° and 104° F.; the pulse between 70 and 89; the respirations between 20 and 28. Heart and lung clear; abdomen less distended.

30th.—Two days ago the temperature rose to 105° F., and has practically remained there since. Pulse 112, irregular, and dicrotic. Abdominal distention very marked; spleen easily palpable below the costal margin. Heart sounds muffled.

April 2d.—Pulse more rapid (140); temperature still up to 105° F. last evening. The patient was delirious and restless during the night. Tympanites about the same.

5th.—Delirium persists. Takes nourishment badly. Sponging has brought the temperature down some; has been passing urine frequently.

8th.—A culture taken from the median basilic vein on the 4th contains an abundant and pure growth of typhoid bacilli. The Widal reaction tried on the same day was positive; dilution, 1 to 30, in fifteen minutes; 1 to 50, in twenty-seven minutes; and 1 to 100, in an hour and five minutes.

9th.—Tip of the nose, face, and fingers markedly cyanosed; pupils dilated; temperature, last evening, 104.2° F. Coarse and fine moist râles over the base of both lungs. Abdomen tense. Death at 9.10 A. M., April 10th.

Autopsy (five hours after death).—Anatomical diagnosis: Typhoid fever, with ulceration and swelling of Peyer's patches; swelling of the solitary follicles of the ileum; swollen and hæmorrhagic mesenteric lymph glands; broncho-pneumonia of left lung; atalectasis of right lower lobe; œdema of lungs; cloudy swelling of the liver, with focal necrosis and fatty degeneration; acute spleen tumor; acute cystitis; cystic ovary; acute laryngitis; and hæmorrhagic endometritis.

Body a hundred and fifty-five centimetres long, moderately well built, and well nourished. Rigor mortis well marked in upper and lower extremities. Body still warm. The abdomen is distended, tense, and tympanitic on percussion. Pupils midwide and equal. Mucous membrane pale. Post-mortem lividity of the dependent parts. No subcutaneous œdema; surface of the body generally pale. Subcutaneous fat moderate in amount; muscles of a homogeneous reddish-brown color.

Brain and cord not examined. Abdomen: Peritoneal cavity free from any excess of fluid; both layers of the peritonæum are smooth, glossy, and free from any injection. Omental glands are not enlarged. The intestines are distended with gas. Foramen of Winslow patent. Liver visible for about three centimetres below the costal border. Thorax: Both pleural cavities are free from fluid. Pericardial cavity contains about one hundred cubic centimetres of clear yellow serum; both layers of the pericardium are normal in appearance. Both sides of the heart contain fluid blood, and red and chicken-fat post-mortem clots; no valvular lesions; coronary arteries smooth; myocardium normal in consistence and, on section, of a homogeneous brownish-red color. Both lungs are free from adhesions; consistence augmented. The left lung contains several broncho-pneumonic areas surrounded by œdema; the right upper and middle lobes are œdematous, the lower atelectatic. Mucous membrane of bronchi intensely congested and covered with a small quantity of muco-pus. The spleen is free from adhesions, much swollen, measuring 16 × 10 × 6 centimetres. Capsule is smooth, consistence very soft; on section, the color of the organ is dark reddish-brown; pulp is increased; trabeculæ are apparently normal in amount, and the Malpighian bodies prominent. Liver: Swollen; measures 31 × 22 × 11 centimetres. Capsule smooth, consistence normal. On section, the surface is a dull gray, with irregular areas of yellow. Here and there small pinhead-sized discrete areas of yellow are made out, presumably points of necrosis. The gall bladder is distended with clear yellow bile; mucous membrane normal in appearance. Pancreas, adrenal glands, tonsils, ureters, tongue, and bone marrow show nothing particularly noteworthy. Kidneys: Fatty capsule moderate in amount; fibrous capsule strips off easily; surface smooth; stellate veins prominent; consistence firm. On section, the color is red; cortex markings distinct; cortex about normal in amount; glomeruli visible and congested; medulla and pelvis appear normal. The mesenteric glands are very much swollen and hæmorrhagic; now and again a small area of necrosis is detected. Œsophagus: Mucous membrane injected. Stomach: Contains a small quantity of partly digested food; the walls of the viscus are not increased in thickness; mucous membrane is pale and covered with sticky mucus. Submucous pin-point to pinhead-sized hæmorrhages are apparent over the surface. Pylorus normal. Intestine: Mucous membrane of the duodenum is bile-stained and congested; that of the jejunum similar in appearance; the congestion, however, is more intense in the lower part of the organ. The solitary follicles are swollen in the ileum, markedly so in its lower half; mucous membrane is congested and the serosa appears normal. The last eighteen inches of the ileum contain a few considerably swollen Peyer's patches, irregularly raised about the surface, capped by irregularly round or oval ulcers with sloping, often undermined, margins and clean bases. Appendix shows also some congestion of the mucosa, as well as a few submucous hæmorrhages. Large bowel is congested in places, but otherwise is normal in appearance. Bladder: Not augmented in size; walls not increased in thickness; mucous membrane acutely congested. Tubes and ovaries adherent to one another by firm fibrous adhesions; the ovaries contain several marble-sized cysts filled with clear yellow fluid. The uterus is not enlarged; measures 6.5 × 4.5 × 3 centimetres; peritoneal covering is smooth; walls not increased in thickness; lumen patent; endometrium smooth, and injected in the fundus of the organ. A number of pinhead-sized hæmorrhages are seen in the mucosa.

Microscopical Examination.—The tissues were hardened in ninety-five-per-cent. alcohol, and the sections studied were stained with hæmatoxylin and eosin, Van Gieson's picro-acid fuchsine, Weigert's fibrin stain, and by Flexner's methylene-blue method.

The microscopical study of sections of the myocardium shows nothing noteworthy beyond a moderate fragmentation of the muscle fibres. Sections from the lung, beyond confirmation of the macroscopical findings, add little information. The spleen presented the ordinary appearance of acute spleen tumor—hyperplasia of the lymphoid elements with intense congestion of the organ. Scattered throughout the sections are almost circular areas of necrosis. Collections of bacteria may be seen, sometimes bearing a definite relation to these areas.

Liver: The capsule is everywhere normal. The connective tissue is not increased in amount. The liver cells are greatly swollen and finely granular in appearance. At various points in the sections are more or less circular areas presenting different appearances, according to the stage of development. Some show purely a necrosis of the liver cells; others, in addition to the necrotic process, are infiltrated with round cells of the lymphoid type, while in still others the infiltration is made up of lymphoid cells and cells of an epithelioid character. No giant cells can be made out. No anatomical relation apparently exists between these areas and the portal spaces. Masses of bacilli are made out in the sections. The histological study of the mesenteric glands, kidneys, and intestine adds little to the anatomical diagnosis, but study of the uterus shows a certain amount of desquamation of the epithelial cells of the mucosa, a moderate polynuclear and round-cell infiltration of it and the submucosa, dilatation of the small vessels, but no abnormity in the musculature of the organ.

In sections of the liver, spleen, and uterus treated by Flexner's method for staining typhoid bacilli, microorganisms morphologically similar to Eberth's bacillus were observed; in the uterus, the bacilli apparently were limited to the mucosa.

Bacteriological Examination. — Agar plates were made in the usual manner from the blood of the heart, broncho-pneumonic areas, liver, spleen, gall bladder, mesenteric glands, bone marrow, uterine cavity, kidney, and urine in the bladder at the time of the autopsy.

The plate from the uterus contained thirty-six pinhead or slightly larger, discrete, white colonies which, under the lower power, were generally round, yellowish, and finely granular. Cover slips from the growth contained short, rather thick bacilli. On media the behavior was as follows:

Agar slant: Thin, translucent, gray, filmy, moist growth on the surface of the agar.

Blood serum: Growth equally rapid to that on agar slant, and having the same general appearance.

Potato: Moist, glistening, almost invisible growth along the line of inoculation.

Gelatin stab: White growth along the line of inoculation. No liquefaction of the gelatin at the end of three weeks.

Litmus milk: No apparent change in the medium.

Bouillon and Dunham's solution became diffusely cloudy at the end of twenty-four hours. No indol reaction in Dunham's peptone solution.

Lactose and glucose agar: Stab inoculations give a somewhat scanty white growth along the line, but no evidences of gas formation.

Preparations of hanging-drop specimens from young bouillon cultures (twenty to twenty-four hours) show actively motile bacilli. In cover-glass specimens stained by Pitfield's method bacilli may be seen having five to ten flagella (peritrichal arrangement). This organism was tested with several specimens of blood from known cases of typhoid, and a positive Widal reaction was obtained in each instance in dilutions varying from 1 to 30 to 1 to 75.

Bacteriological diagnosis: *Bacillus typhosus.*

The typhoid bacillus was likewise cultivated in pure culture from the heart's blood, liver, spleen, gall bladder, mesenteric glands, bone marrow, kidney, and urine. It was also isolated from the broncho-pneumonic areas in the lung associated with a coccus identified by all the usual tests as the *Streptococcus pyogenes.*

Unlike the already published cases of this type of infection, these, as previously referred to, occurred in non-puerperal women—one in the course of a typical typhoid fever, the other as an uncommon focus in a remarkable class of typhoid cases, whose chief interest becomes centred in the absence of any anatomical lesions of the intestine. They are, however, comparable in that the source of infection lacks obvious demonstrable evidence. It is not improbable that the source for both was from within, an assumption which receives some support from the pathological findings and the bacteriological study. Over against this the presence of typhoid bacilli in the urine of the second case is important in a determination of the mode of infection; at most, in the absence of exact knowledge, attempts at explanation can but be tentative. Knowing the occurrence of bacillary transmission in experimental investigations, and, indeed, in human beings, it seems likely that most examples of typhoidal infection of the uterus will be included in that category of pregnant or puerperal women already suffering from typhoid fever.

HERNIA ABDOMINALIS.

By H. A. DUEMLING, M.D.,
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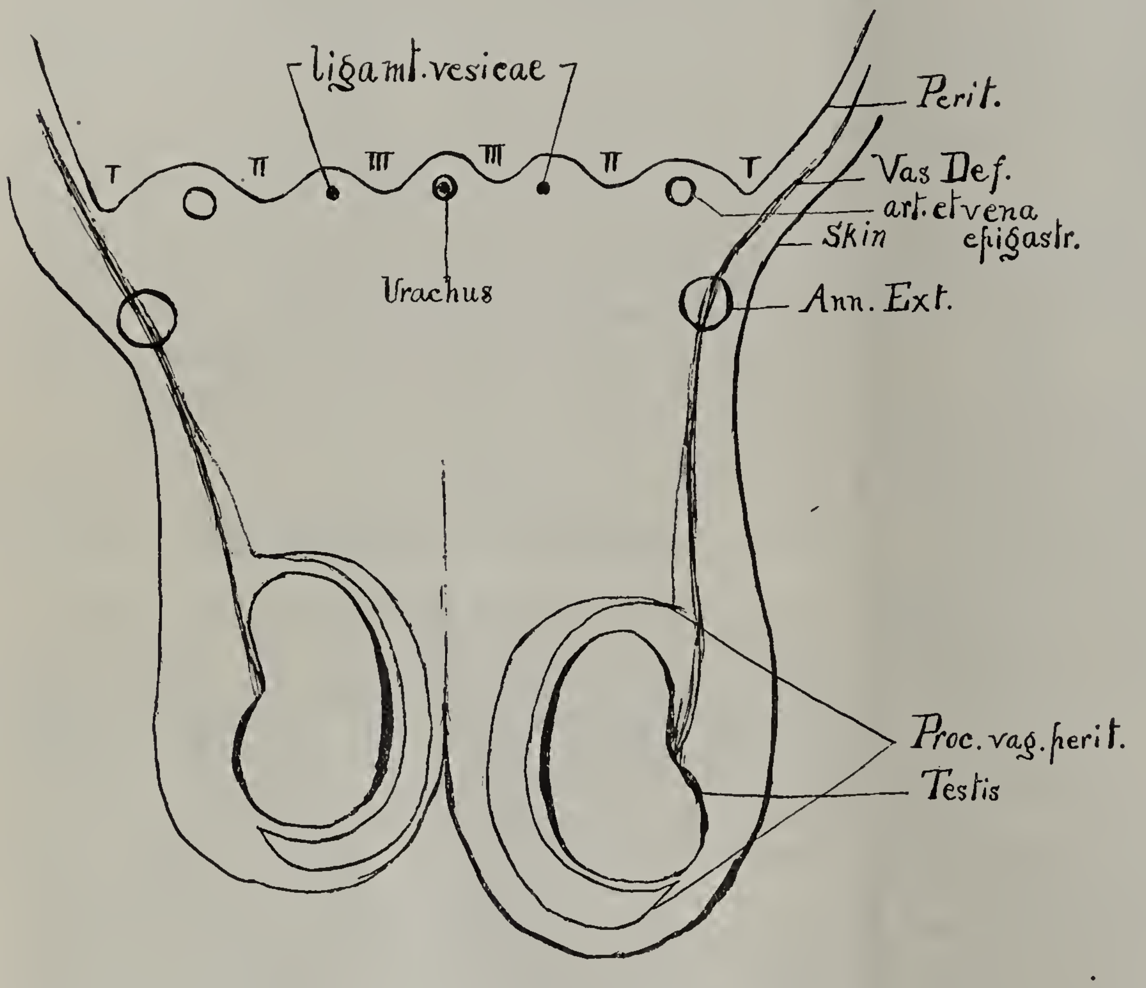
Many and varied are the definitions of what constitutes a hernia, and common as the condition itself are the methods offered for its cure. The proper definition of hernia in a way points to the condition which must be obtained in effecting a cure, and this condition is the *sine qua non* of permanent success. In defining the term hernia, it is not sufficient to say that a hernia is the escape of any of the viscera of the abdominal cavity through an abnormal opening—that is only a part of the true definition—or that a hernia is the protrusion of any viscus from the cavity which contains it, for both these definitions lack the salient feature which marks an escaped abdominal viscus as a hernia. The term hernia should never be used to designate the escape of other viscera than abdominal ones. A definition which covers all points, in a measure descriptive, and withal as concise as is compatible with clearness, is the following: The escape of a viscus, *covered by the structures peculiar to its point of exit,* from the abdominal cavity is a hernia. With the structures peculiar to the point of exit we have to do when an attempt is made at radical cure. The structures which give the hernia its coverings need to be restored to their normal condition and relationship, if we wish to establish the *status quo ante.* Whether a hernia is produced by a slow distention of these structures, or these tissues give way suddenly (and they may, as I will show) to the pressure exerted on the abdominal contents, does not alter the fact that whatever variety of hernia we are dealing with, it is invariably contained in a sac formed by the layers of tissues designed to form the abdominal wall.

Never does a hernia occur through openings in the abdominal wall. There are no openings in the belly wall normally. The points, however, where herniæ usually appear are termed weak points in the abdominal wall, and they are such relatively speaking only. Both the external and internal abdominal rings are well fortified, and the fact that the inguinal canal transmits the cord or round ligament does not *per se* weaken this part of the belly wall. But the vessels accompanying particularly the cord, subjected to varying blood pressure, and more readily compressible than the solid structures, form the necessary weak point for the entrance of a loop of intestine or a bit of omentum. The rôle played by the emptying and ever refilling vessels in creating this weak point should not be underestimated. Indeed, the fact that the cord in men is much more abundantly supplied with vessels than the round ligament in women, in connection with other peculiarities, explains the frequency of oblique inguinal hernia in men as compared with that in women.



The folds into which the peritonæum is thrown by the epigastric vessels, the cord and ligaments of the bladder, and the depressions thereby resulting, form a positive invitation for the production of hernia. The accompanying sketch is intended to illustrate this. The possible entrances for a hernia (portæ herniarum) are marked i, ii, iii, respectively. The porta i is the internal abdominal ring (annulus internus) and is formed by the depression in the peritonæum occasioned by the fold over the epigastric vessels. The second porta is formed by the depression between the epigastric vessels on the outside and the lateral ligament of the bladder on the inner side—it is the entrance for the direct inguinal hernia. The depression occurring between the lateral ligament of the bladder and the urachus is marked iii. This depression affords entrance, though rarely, to a hernia, which is called hernia supravesicalis. The frequency with which these portæ become real doors for the entrance of intestine or omentum is, of course, in the order named.

The presence of a weak point is, however, not sufficient to allow the escape of a viscus. Not infrequently cases of hydrocele of the cord (or canal of Nuck) are seen, which are readily reducible, and yet no hernial tumor is found. An elongated mesentery plus a weakened, distensible porta are prerequisites for the formation of a hernia. Whenever both these conditions—namely, a weak point in the abdominal wall and an elongated mesentery—occur, we have the condition of hernia. A loop of intestine or a too long portion of omentum, impinging constantly on the parietal peritonæum and underlying structures, will not itself produce a hernia, but if the point of attack is directly over or very near a yielding, distensible, and elastic point of the belly wall—*e. g.*, the porta i or ii, or the femoral ring—then the production of a hernia is simply a question of the power of resistance that the yielding peritonæum with its varying resistance can offer the ever-attacking and never-resting viscus.

Usually a hernia is produced gradually, and some time is consumed in its descent from the abdominal cavity. There are, however, cases on record, and I wish to add one more, in which the hernia appeared quite quickly as the result of a sudden compression of the abdominal contents. A loop of intestine may be forced suddenly against one of the so-called portæ, push the peritonæum and the other structures peculiar to its point of exit before it, and appear on the external surface. A case of this kind was the following, which occurred but recently:

A male child, a year and a half old, well nourished, and apparently in good health, fell a distance of some five feet down into a cellar. In falling he drew his head between his shoulders and landed with his body arched forward on his neck and shoulders. He was unconscious for a very short time, and complained of severe pain, which he referred to his abdomen. On close examination, I was able to find a right oblique inguinal hernia. The tumor was very tense, exceedingly tender, and irreducible. No swelling had previously been noticed in the groin of this child, and this, together with the fact that the hernia could not be reduced and was very tender, convinced me of the recent occurrence of this hernia, which was afterward reduced under an anæsthetic.

Whether the peritonæum or any of the other structures concerned suffer any solution of continuity, or, in other words, are torn and lacerated, is, I think, a matter of conjecture. The fact that these herniæ (produced suddenly) are always strangulated goes to show, however, that the laceration, if present at all, is only slight, and not sufficient to prevent incarceration.

An ideal operation for the cure of hernia would contemplate the removal of the sac of peritonæum, the return of the distended tissues to the normal, and the reestablishment of their mutual relationship. The planes of the muscles and of the fibrous structures in their normal elasticity are the principal safeguards against the occurrence of hernia anywhere. When the endeavor is made to prevent the descent of bowel by a plug of scar tissue, as in the McBurney operation, the attending success is at once a criterion of the merit of the operation. Lorenz Heister, in his *Chirurgie* (Nuremberg, 1779), describes a method (chapter cxiv, page 710) like the McBurney operation—*i. e.*, ligation of the sac (in Heister's work described as subcutaneous ligation) and healing of the wound by cicatrization artificially enhanced. Unfortunately, Heister gives no statistics!

Of all methods now in vogue, the Bassini and Halsted method is apparently attended with the largest percentage of cures. There are a number of valuable additions to the technics of the original Bassini, Halsted's modification being the first effort in this direction. In recurrence after any method it is noted that the hernia appears through the internal ring first, and Fowler * advocates the ligation of the epigastric vessels, division of the posterior wall of the canal, and suture of the internal ring, allowing the cord to escape through the external ring. This method, which contemplates the destruction of the canal, leaves the muscular and fibrous planes in normal relationship, and transplants the cord into the abdomen, is, theoretically at least, ideal. The success obtained by a radical operation depends on several conditions which are absolutely necessary in order to make the cure a permanent one. The principal one among these conditions is the restoration of the parts to their normal relationship. The destruction of the inguinal canal is but an accident in the technics, and by no means necessary for the accomplishment of the desired cure. The avoidance, so far as possible, of the production of scar tissue, which, in abundance, will frustrate the cure, must be an object of great importance. This means complete asepsis, the close approximation of severed tissues, each to its fellow, and the use of non-irritating, absorbable suture material. The incision advocated by Hugh Ferguson in his excellent paper on the cure of inguinal hernia is valuable, since it permits of the painless wearing of a truss in the event of failure. It is not within the scope of this paper to compare or to describe the various methods offered for the cure of hernia, but the writer hopes to have brought out some points not heretofore mentioned on which, in a measure, the theories for the surgical cure of hernia rest.

In conclusion, the writer would offer the following deductions: 1. A hernia is the escape of a viscus from the abdominal cavity covered with the structures peculiar to its point of exit. 2. The folds and depressions of the peritonæum, occasioned by the passage of various structures under it, create weak points in the belly wall. 3. The success of a radical cure depends on the restoration of the muscular and fibrous tissues to their pristine relationship and elasticity. 4. The production of scar tissue, artificial or accidental, lessens materially the possibility of a permanent cure. 5. Destruction of the inguinal canal and suture of the external abdominal ring do not prevent recurrence. 6. Destruction of the inguinal canal and of the internal abdominal ring (or its fortification) offers the largest percentage of cures.

A CASE OF TETANUS TREATED WITH ANTITETANIC SERUM.

By JAMES FREDERICK CLARKE, A. M., M. D.,
FAIRFIELD, IOWA.

Frank S., aged thirty-nine years, had always been well, and presented nothing of medical interest in his family history. On February 18, 1900, his hand was crushed in the cog gearing of a horse-power corncutter. The machine stood in a lot where stock was kept, and the exposed cog wheels were not clean. The second finger and contused tissue were at once removed. The wound was washed with a bichloride-of-mercury solution, and then freely irrigated with boiled water and closed, with large rubber drainage tubes in place. It was thought that the first finger could be saved. On February 20th the first finger became gangrenous and the temperature 104° F. The finger, two metacarpal bones, and all gangrenous tissues were at once removed. The wound was freely opened and again washed with bichloride and the drainage tubes replaced. The skin was brought together with sutures, except at the lower side of the thumb, where the open wound was packed with iodoform gauze.

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* *Annals of Surgery*, December, 1897.

Twice a day, following this operation, the wound was freely irrigated with peroxide of hydrogen and the gauze packing changed. There was free admission of air and irrigation fluid to all wounded surfaces, and free drainage from the tubes and gauze packing. The temperature became 100.4° F. on the morning of the 21st, and 101° F. in the evening, and so remained, varying from 100° to 101° F. until the 25th. There was no pain in the wound at any time. There was no redness or œdema, but some discharge of serum and pus. The patient slept well and had a good appetite.

On the morning of the 25th, at breakfast, he complained of the jaws being a little stiff, and he thought he was developing amygdalitis following a bath and change of clothing. Tetanus was at once suspected by the writer, and antitoxine was telephoned for from Chicago. By evening the stiffness of the jaws had increased. The mouth could not be opened, and an attempt to pry it open produced a spasmodic closing, with pain in the temporal muscles. The teeth would so grip a spoon handle that it could not be removed from the mouth. The evening temperature was 101.5° F. and the pulse 100. There was no pain, redness, or swelling of the wound.

Dr. L. J. Baker and Dr. C. G. Lewis, of Ottumwa, Iowa, were called in consultation. Amputation was at once done at the middle of the forearm. By the neglect of a Chicago druggist the antitoxine did not reach us until 8 P. M. on the 26th, when ten cubic centimetres of antitetanic serum were injected in the thigh. Sodium bromide and morphine had been employed to control the developing nervousness until the antitoxine arrived.

The following from the nurse's notes shows the hours of giving the serum:

	Temperature.	Pulse.	Antitoxine.
26th, 8 P. M.	101.6°	104	10 c. c.
11.30 P. M.	102.4°	92	10 c. c.
27th, 3 A. M.	102.6°	94	(Morphine, gr. ¼.)
6 A. M.	103.2°	100	20 c. c.
9 A. M.	102.2°	102	
11.45 A. M.	103.2°	104	20 c. c. (morphine, gr. ¼).
3.30 P. M.	103.2°	116	20 c. c.
4.45 P. M.	103°	120	10 c. c. (morphine, gr. ¼).

Since, from the evening of the 25th, swallowing produced spasm of the pharyngeal muscles, and but little water or nourishment could be taken by the mouth, nutritive enemata were given every six hours, and injections of normal salt solution in the intervals (every six hours). The urine had to be drawn with a catheter. It was normal in amount. On the evening of the 26th and the morning of the 27th there was marked retraction of the head and rigidity of the muscles of the back. The voice gradually changed, as did the facial expression. The patient wanted the top of his head rubbed continuously with cold water. At times he would become very restless. The restlessness was relieved by morphine. Frequently he would sleep for a few minutes, and on the 27th he would start from the sleep as if greatly frightened, calling for help. By two o'clock on the 27th the jaw was so relaxed that the tongue could be protruded an inch or more.

After each injection of antitoxine the pulse became slower and stronger. The injections gave no pain, and the patient begged for them oftener than they were given. The mind was at all times clear and the hearing very acute. The patient, though not knowing his condition, was, when awake, anxious and excited, and kept several attendants continuously busy with a fan, or cold cloths, or other means of increasing his comfort.

On the 27th there appeared to be an improvement from six to eight o'clock, when the patient started suddenly from sleep, calling for air. He attempted to get out of bed and gasped. The pulse became imperceptible, and he fell back in syncope. A nitrite-of-amyl pearl, which was at hand, revived him for a few minutes, but a second attack occurred, in which he died suddenly, the pulse failing before the respiration.

This case seemed unusual to the writer because tetanus developed in a freely drained and antiseptically treated wound. It was the first use of antitetanic serum known to the consulting surgeons in this part of Iowa. It was the judgment of these surgeons that the serum prevented general convulsions and relaxed the spasm of the temporal muscles. The death came at an altogether unexpected time and in an unexpected manner.

Having had no experience in the use of the serum, the writer asked the makers, by telegram, how much antitoxine could be given without danger from the trikresol used as a preservative. Their reply may be of interest to others having occasion to use the serum.

February 28, 1900.

"DEAR DOCTOR: We had your telegram last night, asking how much tetanus antitoxine can be used with safety, and whether it contains carbolic acid, to which we reply as follows:

"Can give a hundred cubic centimetres of antitetanic serum daily. Contains 0.4 per cent. trikresol.

"Here and there very large doses of this serum have been given, in some cases much more than what we have indicated in the above. Trikresol is claimed to be much less poisonous than carbolic acid. In one case that we have now in mind, over a pint of antistreptococcic serum, which also contains 0.4 of one per cent. trikresol, was given in the course of a few days with recovery of the patient and no harmful effects."

I regret that the serum was not obtained more promptly, for much valuable time was lost through the druggist failing to ship it as promised, and of course one can not expect good results after the toxines have produced marked destruction of tissue.

JUVENILE HYSTERIA AND NEURASTHENIA.

By CHARLES L. DE MERRITT, M. D.,
WEST HOBOKEN, N. J.

THE common existence of these neuroses among children, though long recognized by specialists, has only just begun to interest the mass of general practitioners. Recently a number of able writers have brought the subject into deserved prominence.

It has too long been our habit, when consulted about a cranky, irritable, highstrung child, to treat the matter lightly. To appease the parents, we give some commonplace advice about diet, rest, etc., and generally tell them that "the child will outgrow it," which, let me remark at once, it assuredly will not. We make no proper examination of the case, no inquiries into its antecedents. We fail to recognize the urgent need for treatment. And the neurotic child, for want of timely moral and hygienic restraint, reaches maturity with nervous force already exhausted, another recruit for the great army of neurological wrecks whose existence is one of the most appalling problems of present-day society.

I believe that the majority of adult cases of hysteria and neurasthenia have their insidious beginning in childhood. In many cases heredity is a factor, both directly and indirectly. By indirectly I mean this: Neurotic parents, being in a constant state of irritability themselves, scold and nag their children incessantly, yet have not the will power to enforce real discipline, thus destroying what little mental equilibrium their unfortunate offspring may have been born with.

When school children "break down" (and the number of them who do so is alarming), overstudy is the commonly accepted cause. Yet I believe it to be the real factor in very few cases. German children study harder than ours, yet they collapse much less often, because their home life is more sedate and precocity is suppressed, not encouraged, as is too often the case in American homes.

Not long since I had occasion to call on the parents of a mature individual of four who had just accompanied his father on a short trip. . For my edification, and to satisfy the senseless vanity of the father, the boy was put through a category of questions about his trip that would have scared a civil-service examiner. He described in painful detail the places visited, the people met, the flattering things they said to him, his brilliant replies, etc., and if by any chance he missed a point his asinine parent would impatiently recall it. When the ordeal ended the child was in a state of nervous exaltation that was pitiable to one who could comprehend its true import. It is this sort of thing—flattery, turning a child's thoughts ever toward itself, interesting it beyond its natural capacity in the affairs of adult life—that is undermining the nerves of our young people to a far greater extent than is sensible study.

Lack of exercise is another prolific cause of neurotic troubles among children. This is especially true of New York city, where the almost universal custom of living in flats deprives them of the playground afforded by the back yards of private houses. In Baltimore, where I practised until recently, the rising generation is certainly sturdier, less anæmic, and of more robust development of the nervous system than in the metropolis. Baltimore is a city of private houses, flats being almost unknown, and nearly every house is occupied by a single family. Each house has its back yard, generally spacious, sunny, and well turfed, and here, in warm weather, the children romp from morning till night.

Of other causes, such as poor food, anæmia, infectious fevers, etc., I shall not speak. This article is too brief to deal with ætiology in detail.

The symptoms of hysteria and neurasthenia in children are so common that an enumeration would be superfluous, did not so many practitioners persistently ignore them. Nocturnal terrors; marked insomnia; great irritability; a tendency to lie and impose on people for no apparent reason but love of so doing; masturbation; fits of crying and paroxysms of passion upon the least provocation, or often without any; habitual feigning of illness; undue love of sympathy—any or all the symptoms which mark adult cases may be detected in the juvenile sufferer, and the experienced observer will know well enough where to draw the line between them and the natural "cussedness" of a healthy child. Masturbation is the symptom we are most apt to be consulted about. The common mistake is to treat it as a primary neurosis instead of as a symptom (often a trivial one) of deep-seated nervous derangement.

Now, as to treatment: I am not ambitious to prescribe any complete method, but will only mention a few points my experience has specially impressed me with. First look to the parents: it may be necessary to treat them as a preliminary. If they are neurotic, irritable, or hypochondriacal, we must get them into some sort of trim before we can hope to secure a proper regimen for the child. By explaining how their defects react upon their children we furnish them with the greatest incentive to overcome their own deficiencies and a double cure may be our reward.

The profession will agree that drugs must play a secondary part, yet tonics and hæmic reconstructives are generally indicated. And sedative drugs, like the bromides and hyoscyamus, while not called for as routine practice, are helpful in tiding the patients over periods of unusual irritability. Bathing is a useful adjuvant, particularly the warm sponge bath at bedtime, followed when indicated by a small dose of hyoscyamus.

If the child is attending school, our first impulse is to order a cessation of study. In aggravated cases this is no doubt the proper course; in those of slighter degree I doubt the wisdom of it. To withdraw a child from school often means to deprive it of the companionship of other children and throw it into contact with adults exclusively. This, with the relaxation of mental discipline, may have a most unfortunate effect and produce, instead of a cure, a young hypochondriac. Besides, if the school includes gymnastics in its curriculum, we may be depriving the child of its only means of physical exercise.

I have omitted much. I have not tried to distinguish between hysteria, neurasthenia, and allied states. Such a distinction, in the case of children, is often difficult and has to be quite arbitrary; besides, it does not affect treatment much. My hope is that this article may be the means of interesting some practitioners in a class of cases which are in crying need of treatment, and which they have hitherto been disposed to overlook.

447 PALISADE AVENUE.

Therapeutical Notes.

Copper Ointments for Use in Eye Diseases.—*L'Ufficiale sanitario* for November, 1899, gives the following for use when copper is indicated in diseases of the eyes, to be applied to the internal border of the lid:

℞ Sulphate of copper	1½ grain;
Glycerole of starch	75 grains.

M.

Or—

℞ Sulphate of copper	1½ grain;
Camphor	15 grains;
Fresh butter or vaseline	150 "

M.

Dujardin-Beaumetz and Yvon recommend the following:

℞ Sulphate of copper, from 3 to	12 grains;
Camphor	1½ grain;
Extract of opium	$\frac{3}{100}$ of a grain;
Vaseline	150 grains.

M.

This prescription is said to be most useful in chronic conjunctivitis, vascular keratitis, and ulcers, and is superior in its results to mercurial solutions in granular conjunctivitis.

Bloebaum adds salicylic acid and cocaine to the copper salt, as follows:

℞ Sulphate of copper, Salicylic acid, Hydrochloride of cocaine,	of each 15 grains;
Vaseline	150 "

M.

The Treatment of Aphthæ in Infants.—Dr. A. Jacobi (*Archives of Pœdiatrics*, January) considers that aphthæ are often due to injudicious rubbing. He says: "Do not be so *fearfully* clean. Perhaps it is best to leave the infant's mouth alone with the exception of the first washing with sterilized water immediately after birth. Otherwise the mouth should be cleaned by the baby's feeding and by the practice I have recommended these dozens of years—viz.: to give a teaspoonful or two of water after every feeding. That will wash down all remnants of food that might get decomposed in the mouth. These 'aphthæ' will get well when left alone; but as long as there is a sore surface there is a possibility of microbic invasion; for that reason alone they should be treated. Use a soft brush in the mouth every hour with a few drops of chlorate of potassium solution, one to thirty, or milder, but do not rub or be rough."

For Dyspepsia.—Linossier (*Journal des praticiens*, January 6th; *Therapeutic Gazette*, May 15th) suggests that in certain cases of dyspepsia, where there is a very distinct lack of gastric juice, the following prescription may be used with advantage:

℞ The whites of two eggs;	
Sugar	1 ounce;
Distilled water	5 ounces;
Dilute hydrochloric acid	1 ounce.

Mix the water and the white of eggs, then dissolve the sugar, and finally add the acid gradually in small quantities.

Linossier asserts that the mixture, when prepared in this manner, has a burned taste which is not disagreeable.

Brewer's Yeast in the Gastro-enteritis of Children.—M. Thiercelin and M. Chevrey (*Gazette des hôpitaux*, January 9th; *Medical Review*, London, April) first administer an aperient. The intestine is then washed out, and a teaspoonful of dried yeast, or a dessertspoonful of fresh yeast, dissolved in from fifty to sixty grammes (two fluid ounces) of boiled water at about 98° F. is introduced by a rectal tube. The tube is withdrawn, and the child is kept still so as to retain the injection as long as possible. With the exception of the aperient, this process is repeated thrice daily. A *diète hydrique* is maintained. The writers state that the results are extremely encouraging.

For Vaginitis.—The *Journal des praticiens* for May 19th attributes the following to Janowsky:

℞ Alum	450 grains;
Borate of sodium	450 "
Sulphate of quinine	15 "
Essence of thyme	30 drops;
Carbolic acid	30 "
Glycerin	3,000 grains.

M.

A soupspoonful of this solution to a quart of hot water for a douche. To be used twice or thrice daily.

An Ethereal Solution of Soap.—Mr. Herbert Skinner, pharmacist to the Great Northern Central Hospital (*British Journal of Dermatology*, May), gives the following for an ethereal solution of soap, which can be made extempore:

℞ Oleic acid, Methylated alcohol,	of each ½ ounce;
Strong liquor ammoniæ	q. s.;
Methylated ether to	2 ounces.

The first two are mixed and the ammonia is added in order to neutralize the acid; care should be taken not to add an excess. A little heat is evolved, but nothing to speak of. Then add the ether, which may be increased to three ounces, if a weaker solution is required. Petroleum spirit or benzine may replace the ether if necessary. It is said to be undoubtedly very excellent for cleansing ointment-laden surfaces—far superior to any ordinary soap. It is better adapted for a physician's use in examination than for a patient's. For an antiseptic, ether-soluble oils, izal, or sanitas, may be added. Caustic tar preparations, such as lysol and creolin, are not excluded, but naturally should be sparingly used, as an ethereal solution is very penetrating.

The Treatment of Exophthalmic Goître.—Dr. James B. Herrick, in a discussion at the Atlantic City meeting of the American Medical Association, stated that one eight-hundredth of a grain of hyoscine hydrobromate given over a considerable period of time, and of from one twentieth to one tenth of a grain of picrotoxine had proved useful.

THE
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THE ATLANTIC CITY PATHOLOGICAL EXHIBITION.

The example set in Columbus last year by the Indiana Medical Society bore good fruit in Atlantic City this year on the recent occasion of the meeting of the American Medical Association. On a spacious area of Young's pier, conveniently near the hall in which the association's general sessions were held, there was a remarkably instructive display of pathological specimens. The Marine-Hospital Service, various medical societies and schools, and individual members of the profession bore their several shares in contributing to the collection, and they are all deserving of the thanks of every physician in attendance. The exhibition was well appreciated, but at no time, so far as our representative observed, was it so thronged as to interfere with careful and leisurely examination of the specimens. The collection, though not large, was illustrative of almost every branch of pathology, and therefore of interest to all medical men, no matter what their particular line of study and practice. The pieces were well arranged and attractively displayed.

Apart from the interest attaching to individual specimens, such a collection can not but strike the observer as showing the great superiority of recent methods of preparing and mounting pathological specimens to those that were commonly seen but a few years ago; it was common at this exhibition to hear a person remark of some particular preparation that it was the finest one of the sort he had ever seen, and in many instances this statement came from men actively engaged in teaching and in the habit of daily dealing with pathological conditions similar to those exemplified. The display was, indeed, most creditable, and we hope that like exhibitions will hereafter be a constant feature of the association's meetings. An extemporized museum of this sort is not a mere field for the gratification of curiosity or a means of diversion for the intervals between those parts of the proceedings in which one feels a personal interest; it is a collection of objects to be studied. We need not dwell upon the advantages of demonstration over didactic instruction, for they are now everywhere recognized. Our whole system of education shows this to be the case, and that sort of post-graduation study which any physician who is worthy to be a member of the American Medical Association takes every opportunity to prosecute is quite as materially aided by visible objects as the undergraduate course is. For years the "annual museum" has been a notable feature of the meetings of the British Medical Association, and we regard it as a matter for congratulation that it has now been established in our own national organization.

THE HUMANITY OF MODERN WARFARE.

Whatever may be the cause, there can be little doubt that modern warfare is more humane in its results than that of the olden time. Much, no doubt, is due to the kind of weapons used, much to the increased efficiency of modern methods of treatment, both surgical and medical, and yet more to the free hand given by all civilized combatants to those engaged in the work of alleviating suffering, thus rendering possible complete organization of the effort and energy expended in the task of repairing that destruction which, paradoxical as it may seem, it has been the object of the war to bring about.

Mr. Clinton Dent, who has himself been at the seat of war in South Africa, and has seen between two and three thousand cases of wounds, nearer the latter number than the former, delivered on May 1st, at St. George's Hospital, London, a lecture on Small-bore Rifle Bullets and the "Humanity" of the Present War, which was published in the *British Medical Journal* for May 19th. Mr. Dent speaks in a very guarded tone, as will be evident from the remark that "it appears to be premature at present either to indorse or to question the criticism that has been made in some quarters of the army medical organization as a whole, or, on the other hand, to join in the somewhat fulsome, or at any rate full, stream of eulogy and praise which is in other quarters lavished on the entire department." "Efficient it is," he adds, "that much I will say; more efficient beyond all question than any army medical organization that has ever been in any campaign of any magnitude yet. But I hope that that will not prevent us in the future from striving to make it much better."

Mr. Dent shows that there are many factors conducing to the increased "humanity" of the present war besides the organization of the medical department. He enumerates the less disastrous effects of modern bullets, the wounds from which tend to heal much more easily than those from missiles formerly in use; the fact that, especially in these days of long-range fighting, the great majority of wounds are inflicted by rifle bullets and not by shell or shrapnel; the comparative absence of sepsis, due in part to the condition of the men, who are, as a rule, well fed and cared for, etc. Of the commissariat he says that "if one department may be praised unreservedly in this campaign more than any other, it is certainly the commissariat department. The way they have done their work is marvelous." As to transport: "If the transport is bad, or if the conditions under which the wounded soldiers are conveyed back to the field, stationary, or base hospitals be unfavorable, the cases are likely to do badly." And he adds: "On the whole, the transport has been good." The climate he considers to be one of the strongest points in favor of good results. The height at which most of the hospitals are situated conduces greatly thereto. "The climate, whether in Natal or Cape Colony, appears to be surgically almost sterile," while in such a warm, dry climate—sometimes very hot in the middle of the day, and very cold at night, but dry and with a sandy soil—the open-air method of treatment can be practised to a hitherto unprecedented extent. These circumstances afford the most favorable conditions for the best of *régime* as regards hospitals. They can be extended over a wide area, the hospitals in Natal being spread over a hundred and eighty miles, while the lines of communication between Cape Colony and Bloemfontein, which are dotted over with hospitals, are seven hundred and fifty miles long. This fact, together with the climatic conditions, enabling tents to be advantageously used, obviates overcrowding and affords a plenitude of fresh air and sunshine. An abundant supply of aseptic materials is also a factor greatly conducing to the success attained; but Mr. Dent comments upon the "needless economy" in many minor matters, instancing "a most singular parsimony with regard to the issue of nailbrushes," which, insignificant as it may appear, is of great importance in a surgical ward or an operating theatre. He adds: "Those who know something of the peculiarity of military methods are aware that it will take you quite as much trouble, and possibly quite as long, to get a nailbrush as, say, five hundred extra bedsteads." As regards the antiseptic and aseptic measures, he considers it abundantly clear that the elaboration of detail which is found absolutely necessary in a London civil hospital may be, and perhaps is, pretty often dispensed with out there. Suppuration, he says, was common enough almost from the first, and it became more abundant as time went on, but it seemed to be shorn of its well-known evil results, for as soon as the offending part was dealt with all went well. Of pyæmia, septicæmia, or tetanus, he had not heard of a case.

The proportion of killed to wounded, contrary to Billroth's expectations for future wars expressed a few years ago, remains at about the normal point of one to four. As regards deaths from wounds, Mr. Dent draws the following instructive parallel: "It is a curious fact that up to a certain date in March we had 4,934 wounded, taking non-commissioned officers and men alone. Now, in the Franco-German war, the fourteenth German army corps up to a particular date had 4,344 wounded. The numbers are very similar. Of these 4,344 Germans, 617 died; and of our 4,934, 239 died. Put into percentages, it comes roughly to this: A mortality of 'deaths from wounds' amounting to five per cent. in our army, and in the fourteenth army corps to fourteen per cent. Of the 617 Germans who died, 304 died of pyæmia and septicæmia, and 39 of tetanus. If we exclude, then, these preventable disorders, the mortality in the two armies is almost the same—namely, five per cent. in our army and six per cent. in the German army corps." Here alone we have a striking instance of the great progress in humanity made in modern warfare.

So much has already been said concerning modern bullets that we need not enter upon that subject. Mr. Dent's remarks simply indorse the almost universal conclusions. As regards the results of injuries to long bones, and particularly of amputations therefor, the figures are not yet to hand, but Mr. Dent believes that the results of amputations in this war will contrast in the most marked manner with those of former wars. Concerning wounds of joints, he says that while Surgeon-General Sir Thomas Longmore, speaking of the Crimean war, said that not a single patient with a wound of the knee joint recovered with his life and limb, amputation then giving a better chance of life than conservative treatment, in the present war, while wounds in which the bullet had unquestionably traversed the knee joint were common, he had not seen a single death therefrom. Case after case, on the other hand, he had seen in which the bullet had gone clean through the joint and yet recovery had been complete, even to the restoration of perfect mobility.

Mr. Dent concludes by emphasizing the need of attaching due importance to the favorable surroundings, the "fit" condition of the men, the commissariat, the climate, the absence of overcrowding, and the presence of plenty of pure air and sunlight, and utters a caution against overlooking them and giving all the credit merely to the score of superior surgery, lest in a future war with unfavorable surroundings a hideous awakening should be in store. His concluding words mark a spirit which may well be absorbed by all surgeons, civil as well as military, when he says: "But if we look on our present experience just as an indication that we are working in the right direction, then at least the medical profession may feel that it is doing—not that it has done—its best to contribute to the humanity of war." Which remark is equally true of that wider warfare, Life, the struggle of the race for existence.

THE HERBALIST OF THE PRESENT DAY.

THE apothecary has practically ceased to be his own druggist, to use the term in the sense of a purveyor of simples, and he is fast finding it more and more to his advantage to buy his galenicals instead of making them on his own premises. It seems, however, that there is still, at least in Philadelphia, a class of collectors of medicinal plants apart from those who supply the manufacturing pharmacists. They are the street florists, and concerning them and their trade a very interesting article, by Mr. Charles H. La Wall, appeared in the February number of the *American Journal of Pharmacy.*

According to Mr. La Wall, these people make their collections chiefly in the counties of Camden and Gloucester, in New Jersey, a region described as remarkably varied in its medicinal flora, although some of the plants dealt in no longer grow wild there, but are cultivated by the dealers. They usually charge somewhat more than the market prices for their simples, but the quality of them is said to be exceptionally good, and Mr. La Wall declares that no better source of supply could be found for display specimens or for material for microscopical work. As regards the number of medicinal plants collected by these street venders, Mr. La Wall states that three quarters of the official medicinal plants grow within a few miles of Philadelphia and are furnished by the venders in question, although of course not all of them at any one time of the year. These people are familiar with the time of year at which it is preferable to gather each plant, and they are aware of the medicinal virtues ascribed to each one.

Mr. La Wall does not tell us who the street venders' customers are. They can hardly be apothecaries to any considerable extent, we should suppose; perhaps they consist largely of the class of people, more numerous than is generally supposed, even in large cities, who pin their faith to roots and herbs and look upon the shopkeeper as not likely to be able to provide them with material quite so good as the herbalist furnishes.

Great as is the change that has come over the apothecary's business of late years, a change destined apparently to go on to an extent until lately not dreamed of, we can see the advantage of his keeping up his familiarity with fresh medicinal plants, as Mr. La Wall points out, and probably there is no way in which he can more conveniently do so than by the occasional purchase of a five-cent bunch from the sidewalk dealer.

THE EFFECT OF ALCOHOLIC INDULGENCE ON THE SUBJECT'S OFFSPRING.

Practical Medicine for May cites from the *Journal of Inebriety* the case of a farmer living out of doors and working moderately, who has drank daily for sixty years a pint of spirits and has attained the age of ninety-one years, being hale and hearty, never having had any illness. It is small wonder that his case should have been seized upon and widely quoted against the wholesale condemnation of the use of liquor as under all circumstances injurious. The *Journal of Inebriety,* however, learns on inquiry that, "while the effects of his drinking are not prominent in his appearance, they are very evident in his children," and it proceeds to cite the following family record: "Of three children by his first wife, two died in infancy; one became an epileptic and died at fifteen. Of four children by his second wife, one is feeble-minded, the second choreic, the third is dissolute and drinks, the fourth is erratic, passionate, and a wanderer." This seems to us like arguing in a circle with a vengeance. There are many inheritable conditions which are capable of producing this train of results in the offspring. They might be due to epilepsy, a neurosis, syphilis, etc., in the parent. But, it is objected, he shows no signs of any of these diatheses, being an exceptionally hale and hearty man. But we have just been told that neither does he show any personal sign of alcoholic degeneration. Why should a fact that excludes one set of causes be sufficient to sustain the point in contention? It is easy enough to prove the assumption that a given cause produces a given effect by assuming that in a given instance that particular effect was the result of the given cause, and not merely coincident therewith, even in face of a condition deemed sufficient to preclude all other known possible causes. Of the immense amount of harm that is done by the abuse of alcohol no observant person, and especially no medical man, can be ignorant; but we do not think that it will be lessened by extravagant overstatement of the case to uphold extremist positions.

THE LESSON OF A "SCORCHING" TRAGEDY.

A SAD story appears in the *New York Times* for June 11th. A young bicyclist was running a race with a trolley car. When he showed signs of tiring, the jeers of the men on the car spurred him to renewed effort, which was further encouraged by the favoring smiles of the ladies at his renewed efforts. Then came the tragedy. The onlookers, sitting at their ease in the car and themselves risking nothing, "saw him regain what he had lost, go forward a couple of feet, and then plunge headlong from his wheel. . . . Blood was pouring from mouth, ears, and nostrils, and he was badly cut and scratched"—and dead! No wonder that the reporter has occasion to add that, after the part they had played as unintentional causes in this tragedy, "the young men and the young women slowly returned to their car. The young men did not jeer again. The young women had no heart to smile." This principle of "record-breaking" and of insatiable attempts to outdo others is the bane of the age. It is urged that it is the very life of progress. We do not think so. There would be just as much real progress—nay, more—in all careers in life if men would leave off pitting themselves so eternally against each other, and pit themselves instead against their own best without regard to what others might have done or be doing. Let each man strive in every walk and relation of life to attain the best of which he is capable, with due regard to the harmony of his own best interests, and let him neither mind if he is distanced by others on the one hand, nor be satisfied though he beat all the world on the other, yet fall short of the standard of his own capabilities. So will the harmonious progress of the race be better assured than by all the "record-breaking" and "scorching" possible.

LAY SURGERY IN THE ARMY.

The newspapers have lately published accounts of a surgical feat performed by Private Jones, of the hospital corps, that of amputating a native woman's arm in the Philippines, which he seems to have done *secundum artem* and quite successfully. While the operation is creditable to Private Jones, it is to be regretted that a medical officer was not within call; nevertheless, allowances must be made for the difficulties encountered by our small force in the Philippines.

EXTREMES MEET.

Dr. Eckman, of Brussels (*Presse médicale belge; Physician and Surgeon,* May), in an article on Medical Customs in the United States, states that "there is a specialty which takes well in the United States, and is unknown here—that is 'orificial surgery.' As the name indicates, these specialties treat only the nose, mouth, rectum, vagina, and urethra. A varied and somewhat incongruous combination. Happily for the patient," adds the author, "antisepsis is nowadays very rigorous and well carried out in the United States." We have heard of an old-time London surgeon who, in his visits to the wards, would probe a fistula in ano, and, passing to the next bed, would, without cleansing his probe, or at most merely wiping it, proceed to investigate with it the tonsillar crypts of another patient. But why this sarcastic reference to the nose, mouth, rectum, vagina, and urethra? Varied the combination may be, but why incongruous? The nose, mouth, and rectum are surely stations on the same route, while the urethra and the vagina surely have the closest possible connection. These remarks, we hardly need add, are not made in the interest of "orificial surgery," which we regard as an *ad captandum* affair.

AN ANTIVIVISECTION PLEA BY INDIRECTION.

The *New York Times* for May 25th reproduced from the *London Leader* a quasi-humorous diatribe against "antivenene" and, incidentally, against all sorts of serum treatment. It recalls vividly the outbursts that were printed a hundred years ago against vaccination, which was then coming into vogue and has ever since maintained its title to confidence, in spite of all such attacks, which, however, have not yet ceased.

AN ALLEGED NARROW ESCAPE FROM BURIAL ALIVE.

This time the story is told of a lady physician living in Cleveland, in a Toledo dispatch to the *Cincinnati Enquirer,* reprinted in the *New York Times.* The statement that life in the supposed corpse was first evinced by quivering of the eyelashes seems to have struck the newspaper men as particularly noteworthy, for they make use of it in the headlines. What seems to us more singular is the remark that the lady had always had a horror of being prematurely buried, "a fate which, it is said, befell her sister." That burial alive should have actually happened to one woman and so nearly occurred to her sister "fatigues" the credulity, to make a slight change in one of Horace Greeley's famous sayings.

THE DIPLOMA MILL AGAIN!

According to the *New York Times* for June 7th, Chicago is once more getting into professional trouble, this time through the "Metropolitan Medical College." Is this our old acquaintance the "Independent Medical College," whose charter was recently revoked, arising phœnixlike under an alias? The "Metropolitan Medical College" appears to have been doing a thriving business lately in England. It seems that, according to the British consul in Chicago, the coexistence of the plague in India and war in South Africa has created an increased demand for army doctors, and many incapable students in England have availed themselves of the ten days' medical course by correspondence, which, as subsidiary to the honorarium, no doubt, constitutes the requirement of the college for graduation. It is not at all likely that any M. D. of the Metropolitan Medical College succeeded in getting an appointment in the British Army Medical Service, but the possibility of the existence of such a scandal can not but work serious damage abroad to our national medical prestige. Why is it that the profession in the State of Illinois seems, with the most earnest endeavor, unable to kill this hydra of diploma mills? It must be due to popular prejudice, which suspects as the purpose of all medical laws professional aggrandizement instead of the public good. But, while there may, perhaps, be something to be said for those who contend for free trade in medicine and the right of every one to be doctored by whomsoever he chooses, surely even the most obtuse can not fail to see on reflection that to support an institution selling worthless and lying diplomas is needless stultification. In the most primitive of mining camps the need of national currency might not be appreciated, each man's "dust" being accepted or its free coinage allowed. But even here a mint which fraudulently coined base metal and circulated it as pure would receive, not public sympathy, but a short shrift. Since the foregoing remarks were written we learn that at the instance of the postal authorities four of the principal officials of the "Metropolitan Medical College" have been arrested for making fraudulent use of the mails. We hope that the matter will now be sifted thoroughly.

ITEMS.

The Buffalo Academy of Medicine.—At the regular meeting of the Section in Surgery, on Tuesday evening, the 5th inst., the following papers were presented for discussion: Bennett's New Method of Anæsthesia, by Dr. Prescott Le Breton; and Some Notes on Gonorrhœal Rheumatism, with a Report of Cases, by Dr. J. Henry Dowd. On Tuesday evening, the 12th inst., the election and installation of newly elected officers took place, and Dr. Matthew D. Mann, the retiring president, delivered an address on Puerperal Infection, which was discussed by Dr. P. W. Van Peyma, Dr. H. D. Ingraham, Dr. M. A. Crockett, Dr. L. G. Hanley, and Dr. L. Schroeter.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported for the week ending June 9, 1900:

DISEASES.	Cases.	Deaths.
Typhoid fever	31	4
Scarlet fever	101	7
Cerebro-spinal meningitis	0	8
Measles	419	21
Diphtheria	294	43
Laryngeal diphtheria (croup)	7	5
Tuberculosis	203	139
Chicken-pox	20	0
Small-pox	4	0

The Richmond Academy of Medicine and Surgery.—At the meeting of Tuesday evening, June 12th, the subject for discussion, to be opened by Dr. Jacob Michaux, was Drainage Tubes for the Female Bladder.

The Late Dr. Landon Carter Gray.—Dr. P. Brynberg Porter, the secretary, informs us that at a meeting of the Medical Association of the Greater City of New York, held at the New York Academy of Medicine on June 11, 1900, the following report was presented and adopted:

Dr. Landon Carter Gray, a charter member of the Medical Association of the Greater City of New York, died on May 8, 1900. Dr. Gray was well known to the profession in Manhattan and also in Brooklyn, the latter being the scene of his earlier activities. He had attained a high reputation by his varied work in the special branch of medicine to which he had devoted himself. Dr. Gray was essentially genial in his temperament, and especially cordial in his relations with the younger members of the profession. He had held many positions of honor in the various societies with which he was affiliated, and his removal from a busy career in the prime of life will be a loss to the profession.

Whereas, It has pleased an all-wise Providence to remove our colleague from our midst; be it

Resolved, That, while we submit to the decree, we as an association desire to express our sorrow in our loss, and direct that this resolution be spread on the minutes of the association and that a copy thereof be forwarded to the family.

[Signed.] Edward D. Fisher, *Chairman,*
Frederick Peterson,
W. H. Katzenbach,
Committee.

An Honorary Degree.—Among the June honors from the colleges may be especially noted the degree of LL. D. conferred by Dickinson College upon Dr. Lewis Stephen Pilcher, the editor of the *Annals of Surgery.* It is worthy of note in this connection that Benjamin Rush was one of the founders and a member of the first board of trustees of this institution.

The "Zum" of the Malarial Mosquito.—Dr. L. O. Howard, in a paper on Structural and Other Differences between the Several Mosquitoes of North America, gave as a mark of distinction that while the *culex* gave a high-pitched note, that of the *anopheles* was about four tones lower.

Change of Address.—Dr. Charles Schram, to No. 52 East Eighty-second Street, New York.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from June 2 to June 9, 1900:*

Agramonte, Aristides, Acting Assistant Surgeon, United States Army, will report to the chief surgeon of the division for duty in charge of the division laboratory.

Bailey, Francis J., Acting Assistant Surgeon, United States Army, is assigned to duty on the transport *Lawton* during the voyage of that vessel to Seattle, Washington, to sail from San Francisco.

Bevans, James L., Acting Assistant Surgeon, United States Army, will report on board the transport *Rosecrans* for temporary duty during the voyage of that vessel to Cape Nome, Alaska. Upon arrival, he will report to the commanding officer of the United States troops for duty at that station.

Bradley, Alfred E., Captain and Assistant Surgeon, U. S. Army, is granted leave of absence for ten days.

Gibson, Robert J., Major and Surgeon, will proceed to Vancouver Barracks, Washington, for duty as a member of the board of officers to be appointed to meet in that department.

Greenleaf, Henry S., First Lieutenant and Assistant Surgeon, will report in person to MacArthur, Arthur, Major-General, United States Volunteers, for temporary duty as attending surgeon during his tour of inspection.

Matthews, Willard S. H., Major and Surgeon, United States Volunteers, is granted leave of absence for fifteen days.

Wilson, Roy A., Acting Assistant Surgeon, United States Army, will proceed to Fort Slocum, New York, for the purpose of accompanying a detachment of recruits to San Francisco, and then return to Fort Totten, New York.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending June 9, 1900:*

Braisted, W. C., Passed Assistant Surgeon: Ordered to the *Massachusetts* immediately.

Douglass, S. W., Pharmacist. Ordered to additional duty on the *Massasoit.*

McCormick, A. M. D., Passed Assistant Surgeon. Detached from the *Montgomery* and ordered to the *Chicago.*

von Wedekind, L. L., Passed Assistant Surgeon. Detached from the *Richmond* and ordered to the *Indiana* immediately.

Whiting, J. R., Assistant Surgeon. Detached from the *Chicago* and ordered to the *Montgomery.*

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the United States Marine-Hospital Service for the Seven Days ending June 7, 1900:*

Banks, C. E., Surgeon. Granted leave of absence for two months and twenty-nine days from July 1, 1900.

CARMICHAEL, D. A., Surgeon. Relieved from duty in the United States Consulate and directed to assume command of the quarantine service at Honolulu, Hawaiian Islands, on June 14th.

CLARK, TALIAFERRO, Assistant Surgeon. Relieved from duty at the Tortugas Quarantine Station and directed to proceed to Washington.

MCMULLEN, JOHN, Assistant Surgeon. Directed to assume command of the Tortugas Quarantine Station.

AMESSE, J. W., Assistant Surgeon. Directed to proceed to Honolulu, Hawaiian Islands, and report to Surgeon D. A. CARMICHAEL for duty.

BEAN, L. C., Acting Assistant Surgeon. Granted leave of absence for ten days from June 4th.

BREADY, JOHN E., Acting Assistant Surgeon. Granted leave of absence for seven days from June 16th.

O'REILLY, W. J., Acting Assistant Surgeon. Granted leave of absence for five days from June 1st.

ULRICH, C. F., Acting Assistant Surgeon. Granted leave of absence for twenty-nine days from June 1st.

MACDOWELL, W. F., Hospital Steward and Chemist. Directed to report at the bureau for instructions preliminary to departure for Havana, Cuba.

HANRATH, F. R., Hospital Steward. Granted leave of absence for two months, on account of sickness, from date of being relieved from duty.

RICHARDSON, S. W., Hospital Steward. Directed to rejoin station at St. Louis and then to proceed to Savannah and Waycross, Georgia, for special temporary duty.

MASON, MYRON R., Hospital Steward. Relieved from duty at Portland, Maine, and directed to proceed to Dutch Harbor, Alaska, and report to the medical officer in command for duty and assignment to quarters.

BECK, J. E., Hospital Steward. Relieved from duty at San Francisco and directed to proceed to Fort Stanton, New Mexico, and report to the medical officer in command for duty and assignment to quarters.

Society Meetings for the Coming Week:

MONDAY, *June 18th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Connecticut, Medical Society; Chicago Medical Society.

TUESDAY, *June 19th:* New York Academy of Medicine (Section in General Medicine); Buffalo Academy of Medicine (Section in Pathology); Ogdensburgh, New York, Medical Association; Syracuse, New York, Academy of Medicine; Medical Society of the County of Kings, New York; Baltimore Academy of Medicine.

WEDNESDAY, *June 20th:* Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark); Philadelphia County Medical Society.

THURSDAY, *June 21st:* New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Massachusetts, Society for Medical Improvement (private); Medical Society of City Hospital Alumni, St. Louis; Atlanta Society of Medicine.

FRIDAY, *June 22d:* New York Society of German Physicians; Philadelphia Clinical Society; Philadelphia Laryngological Society.

SATURDAY, *June 23d:* New York Medical and Surgical Society (private).

Births, Marriages, and Deaths.

Married.

ALLISON—LEMEE.—In Natchitoches, Louisiana, on Wednesday, June 6th, Dr. J. C. Allison and Miss Daisy Lemee.

BUYS—PORTER.—In Brooklyn, on Monday, June 4th, Dr. Thomas A. Buys and Miss Eliza A. Porter.

CREBBIN—AHRENS.—In New Orleans, on Tuesday, June 5th, Dr. John Thomson Crebbin and Miss Elise Ahrens.

GUNNISON—MCLAUGHLIN.—In Meadville, Pennsylvania, on Tuesday, June 5th, Mr. Stanley Eaton Gunnison, son of Dr. Walter B. Gunnison, of Brooklyn, and Miss Harriet Olivia McLaughlin.

LOPER—WOODHULL.—In Laurel, Long Island, on Wednesday, June 6th, Dr. Arthur C. Loper, of Greenport, Long Island, and Miss Angie Woodhull.

PARKER—HENNESSY.—In New York, on Thursday, June 7th, Dr. Ransom J. Parker and Miss Ellen M. Hennessy.

ROBESON—LEAMAN.—In New York, on Tuesday, June 5th, Dr. Fielding T. Robeson and Miss Mabel F. Leaman.

SEAMAN—MAZURIE.—In Riverhead, Long Island, on Wednesday, June 6th, Dr. Thomas Jefferson Seaman, of Amityville, Long Island, and Miss Bessie Hill Mazurie.

SEWARD—HIBBARD.—In New York, on Saturday, June 2d, Dr. John Perry Seward and Miss Edith de Charms Hibbard.

WINDER—SMITH.—In Brooklyn, on Wednesday, June 6th, Dr. Guthrie Rider Winder and Miss Ione Hood Smith.

Died.

GIBIER.—In Suffern, New York, on Sunday, June 10th, Dr. Paul Gibier, of New York, in the fiftieth year of his age.

KELLOGG.—In New York, on Tuesday, June 5th, Frances Bowen Kellogg, wife of Dr. Edwin M. Kellogg.

OSBORNE.—In Newark, New Jersey, on Saturday, June 2d, Dr. Joseph Davis Osborne, in the sixty-seventh year of his age.

PIERSON.—In Orange, New Jersey, on Tuesday, June 12th, Dr. William Pierson, in the seventieth year of his age.

Obituaries.

WILLIAM PIERSON, M. D., ORANGE, N. J.

IN the death of Dr. Pierson a long and honorable career came to a close. He was for many years prominent in the practice of his profession and in all good works appertaining to the duties of citizenship. He was looked up to by the physicians of his county, and, indeed, of all New Jersey, as a wise counselor and a sympathetic friend in time of need. He had held many offices of honor and trust, and at the time of his death he had recently been chosen president of the New Jersey State Medical Society.

PAUL GIBIER, M. D.

THE sudden death of Dr. Gibier, the result of a runaway accident, deprives the New York Pasteur Institute of its founder and director and the profession and the community of an accomplished scientific investigator and a genial gentleman. Although French by birth and education, Dr. Gibier had been among us long enough to make many warm friends and to secure general confidence in his management of the institution under his care.

Pith of Current Literature.

Journal of the American Medical Association, June 9, 1900.

Improved Methods and Details in the Care of Patients during Surgical Operations. By Dr. Fenton B. Turek.—Those which the author has devised, and which he thinks will be found of great use, are: (1) An improved laparotomy sheet made from a thin rubber dam, and fitted close to the body; the advantages of this rubber protective are that it not only lessens the danger of infection from the skin, but prevents the latter from becoming contaminated; (2) a similar sheet of rubber dam, with two openings which are reenforced by rubber bands forming collars; for the protection of the abdominal cavity and the edges of the wound from any possible danger of infection that may arise from opening the viscera, as in operations for gastro-enterostomy, entero-anastomosis, etc.; (3) a "rubber drainage coffer dam," used as a protection against leakage; (4) hot-water bags to be placed within the abdominal cavity for the prevention of shock; and (5) hot-water slippers for the same purpose. The article is illustrated.

Neurasthenia and the Rest Cure. By Dr. Frederick A. McGrew.—The author classifies his cases of neurasthenia under three heads: (1) Developmental neurasthenia; (2) overstimulation neurasthenia; and (3) developmental plus overstimulation neurasthenia. The developmental neurasthenic needs such exercise (*not* rest) as shall tend to harmoniously develop and strengthen every part of the physical organization, change of diet and surroundings, combined with stimulating and eliminative hydrotherapeutic measures and massage. The overstimulation neurasthenic will be best benefited by complete rest. Dieting, general massage combined with passive movements, special abdominal massage, hot fomentations along the spine and over the stomach and liver, saline sponging, and general faradaism are measures promoting the elimination of fatigue and waste products, and increasing the general muscular and arterial tone. In a neurasthenia in which the developmental and overstimulation elements are both concerned, it is a delicate matter to determine how much is due to insufficient nervous vitality and how much to the abuse of what vitality there is; for the purpose of treatment an approximate estimate must be made, and a course plotted accordingly.

Intralaryngeal Insufflation. By Dr. Rudolph Matas.

Medical Record, June 9, 1900.

Cholecystectomy for Gallstones. By Dr. C. L. Gibson.—After giving two cases of his own, and a statistical review of all other cases (few in number), the author expresses the belief that cholecystotomy as a means of treating cholecystitis and cholelithiasis is called for in all cases of cholecystitis, with or without stones, acute or chronic, provided that the gall ducts can be properly explored, and that the conditions promise an easy removal of the gall bladder. The more distended the gall bladder, the more likely is its separation from the liver to be easy. The operation is also recommended when it is the only satisfactory way to deal with the gall bladder, and as a prophylactic measure against malignant disease in the presence of long-standing irritation.

Acute Suppurative Folliculitis of the Scalp. By Dr. William S. Gottheil.

The Effect of Summer Heat upon the Public Health. By Dr. Henry Dwight Chapin.—The deleterious effects of continued "hot spells" is spoken of, death-rate statistics are given, and the work of the Tree Planting Association commended. As trees maintain a steady temperature of 54° F., the cooling effects of numbers of them upon the atmosphere ought greatly to modify our present summer-time discomfort. Also the constant giving off of watery vapor from trees enhances the cooling effect. Sanitary precautions in regard to cleanliness are written of with stress, and the disposal of food stuffs is treated of.

Seasickness and what to do with it. By Dr. Herman Partsh.

Philadelphia Medical Journal, June 9, 1900.

Criticism in Medicine. By Dr. George Dock.

Gastric Ulcer: Non-perforating—Hæmorrhage. By Dr. William L. Rodman.

The Endowment of Medical Colleges. By Dr. W. W. Keen.

Gastric Hæmorrhage. By Dr. W. L. Rodman.

Boston Medical and Surgical Journal, June 7, 1900.

Chairman's Address before the Section on Practice of Medicine. By Dr. George Dock.

The Endowment of Medical Colleges. By Dr. W. W. Keen.

Gastric Hæmorrhage. By Dr. W. L. Rodman.

Clinical Report of Cases of Infection due to the Bacillus Aerogenes Capsulatus of Welch. By Dr. Paul Thorndike.—Two cases which are reported because of the rarity of reported cases where the Welch bacillus has been demonstrated before death. The first case was in a male, aged forty-five, who sustained a compound fracture of both bones of the right forearm. The seat of injury received a most thorough cleaning with corrosive sublimate, followed by sterile dressing and plaster of Paris. The plaster was split within twenty-four hours on account of pain, semi-delirium, and a temperature of 102°. On the second day there were pain, cyanosis of the fingers, and great swelling of the forearm. Emphysema was quite noticeable upon removal of the plaster. On the third day the patient failed markedly. Emphysema extended beyond the shoulder, well on to the chest, even to the clavicle. The arm was removed at the shoulder joint; both flaps were emphysematous. The patient rallied well during the following twenty-four hours, but within thirty-six hours the septic symptoms returned; the man sank, and died two days after the operation.

The pathological findings in the case reported above were definite in confirming the provisional clinical diagnosis of emphysematous gangrene due to the *Bacillus aerogenes capsulatus.* They were based upon a study of the amputated limb, the internal organs, and the causal bacillus.

Report of Cases in which the Bacillus Aerogenes Capsulatus was Found. By Dr. Joseph H. Pratt and Dr. Frank F. Fulton.—In this article three cases are given. Of the five cases (two reported by Dr. Thorndike in the preceding), Dr. Thorndike's first case was a pure infection with the gas bacillus. This case showed what marked pyogenic properties the gas bacillus may possess. In three cases the organism appeared to gain entry into the tissues from the gastro-intestinal tract. In two, infection was probably referable to dirt containing the gas bacillus which gained access to the body through wounds of the skin. The lesions produced by gas bacilli on muscle were most remarkable. This was shown in both the cases of emphysematous gangrene reported by Dr. Thorndike. In some places the muscle fibres were broken into small pieces, varying in size and shape. The fragments were separated one from another and laid in different planes. Their torn edges were distinct, their striæ well preserved. The appearance was of débris thrown about by an explosion. In other places degeneration and digestion of the muscle fibres appeared to have taken place. This digestion is shown by the soft, mushy condition of the muscle fibres, which can be teased apart with the greatest ease.

The Medical News, June 9, 1900.

The President's Address. By Dr. W. W. Keen.

Gastric Hæmorrhage. By Dr. W. L. Rodman.

Conclusions reached after a Study of Typhoid Fever among the American Soldiers in 1898. By Dr. Victor C. Vaughan.

The British Medical Journal, May 26, 1900.

Puerperal Inguinal Parametritis. By Dr. G. E. Herman.—Cellulitis after delivery is usually inguinal, because at the end of pregnancy there is abnormally loose cellular tissue extending from the side of the uterus to the groin, along which inflammation tends to spread. This form of cellulitis is commoner than all the other forms combined: it makes a swelling in the groin, and when it suppurates commonly points above the middle of Poupart's ligament. It is most common in young childbearing women and in primiparæ, and occurs most frequently on the right side of the body. The later the illness comes on after delivery the greater is the liability to suppuration. Pain is the most important symptom, of course, accompanied by weakness and a febrile temperature. The average duration of the non-suppurative cases was twenty-nine days; of the suppurative cases, forty-three days. Rest and proper nourishing diet form the essence of the treatment. When pus has actually formed, the abscess is to be opened, but not before.

Two Cases of Extirpation of the Uterus for Excessive Hypertrophy and Prolapse. By Dr. T. A. Helme.—The writer reports two cases in which there was great hypertrophy of the uterus itself, especially of the cervical portion, with protrusion of the lower part of the cervix through the vulvar opening, together with the anterior vaginal wall and portion of the bladder and urethra, the latter apparently having been dragged downward by the advancing cervix. In one case the sound passed six inches and a half, in the other five inches and a half. In both cases the uterus was removed (abdominal section), broad surfaces of peritonæum were brought together with continuous silk sutures, and the cut ends of the various uterine ligaments were bunched together and ligatured into one central knot. The edges of the vaginal incision were united over a broad, raw area and sutured to the "central knot" above referred to, thus retracting the bladder wall within the vulva.

On Vaginal Hysterectomy for Uterine Prolapse. By Dr. R. C. Chicken.—After describing the attachments and supports of the uterus, and the rationale of uterine prolapse, the writer recommends vaginal hysterectomy in severe cases, but with the removal of a part only of the uterus, it being cut across at the level of the cervix, and amputated at the point of peritoneal reflection on its anterior surface. The unattached portion of the posterior fornix is removed, and its base united to the solid mass of uterine tissue that has been left attached to the base of the bladder. In this way there is obtained a broad, firm union of two fixed, inelastic tissues, affording a fixed support to the neck of the urinary bladder.

A Case of Puerperal Septicæmia: Treatment by Antistreptococcus Serum: Recovery. By Dr. H. Gervis.—The writer reports a case of puerperal septicæmia in a woman aged thirty-seven, first seen six days after confinement. There was abdominal tenderness, offensive uterine discharge, and a temperature of 101° F. After washing out the uterus with 1-to-2,000 bichloride solution, ten centimetres of antistreptococcus serum were injected beneath the skin of the abdomen. The serum injections were given twice daily (ten centimetres each time) for the next three days, and once daily for four days more, when they were discontinued, the patient's condition having greatly improved. One week later the temperature rose to 103° F. and the antitoxic serum was administered twice daily for three days as before. The actual process of septic absorption came to an end after the sixth day of treatment, the later rise of temperature being probably due to local pelvic cellulitis. The patient made a perfect recovery. No bad symptoms whatever, either local or constitutional, followed the injection of the antitoxine.

Hæmatometra in Right Horn of an Undeveloped Double Uterus. By Dr. F. W. N. Haultain.—The writer reports a case of hæmatometra in the right horn of an undeveloped uterus, in a woman aged twenty-four. She had never menstruated, the patent horn being atrophic, while the occluded horn was to some extent functionally active. There had been irregular paroxysms of severe pain in the right side for seven years. Abdominal section was performed, and evidence found of previous general peritonitis. The ovaries, which were enlarged and congested, were removed along with the distended uterine horn, the patient making a perfect recovery.

The Treatment of Puerperal Eclampsia by Diuretic Infusions. By Dr. R. Jardine.—For the past three years the writer has been treating cases of puerperal eclampsia by means of saline infusions consisting of sodium chloride and potassium bicarbonate or sodium acetate. The infusions are usually given under the breast, a medium-sized trocar and cannula, rubber tubing, and a funnel being all the apparatus required. One drachm each of sodium chloride and sodium acetate are added to each pint of water, one to three pints being used at a time. The temperature of the solution should be about 100° F. Antiseptic precautions must be rigidly observed. Of twenty-two cases treated in this manner, five died. In one case death was due to a perforating duodenal ulcer. Of the twenty-three children, ten were alive and thirteen dead. In two cases they were macerated, craniotomy, etc., was performed on three, while three were too premature to live. Of the ten full-term children, eight were saved. The infusions in some cases were repeated within twelve or twenty-four hours. Urine passed after their use showed a marked increase in the amount of urea and uric acid. The subsequent obstetric treatment varied.

A Case of Uterus Bicornis Accidentally Discovered after the Patient's Fourth Pregnancy. By Dr. C. H. Roberts.—The writer reports the case of a woman, aged twenty-three, who had had three children, all deliveries being instrumental. Her fourth pregnancy terminated in a miscarriage at four months and a half, and the condition of a bicornate uterus was discovered during the manipulation necessary to remove the retained placenta. He reviews and classifies the various uterine deformities, and calls attention to the fact that the diagnosis between a pregnant bicornate uterus and extra-uterine pregnancy may be impossible until the abdomen is opened.

The British Medical Journal, June 2, 1900.

A Case of Cholecystotomy. By Dr. J. Swain.—A clinical lecture based upon a case of enlargement of the gall bladder in a woman, aged fifty-six. The patient had had attacks of pain for four years, and eighteen months ago a tumor the size of a walnut was noticed in the right hypochondrium. This tumor had steadily increased in size. The writer gives the various conditions, such as floating kidney, etc., that may be confused with an enlarged gall bladder, and their differential diagnosis. The various stages of the operation of cholecystotomy are described. The case was one of simple hydrops of the gall bladder caused by kinking of the cystic duct from adhesions between the colon and gall bladder. Gallstones were not found, though they may have been previously present.

Remarks on the Pathology of Acute Yellow Atrophy of the Liver. By Dr. J. W. Findlay.—The writer reports in detail the pathological findings in a case of acute yellow atrophy of the liver in a girl, aged fifteen. The histo-pathology of the liver was especially studied, and the conclusion is reached that over and above the fatty degeneration and increase of connective tissue there is distinct evidence of an attempt at regeneration on the part of the surviving liver cells. This is shown by the presence of solid columns of hepatic cells in the interlobular connective tissue, where the resemblance to glandular tubes is very marked. They are looked upon as an attempt to form a compound gland, and can be seen to converge toward a portal canal. Although yellow atrophy of the liver is primarily a morbid change of the hepatic cells themselves, yet the writer holds that it is nothing more than an acute cirrhosis of the liver, differing from other cirrhoses in quantitative histogenetic changes. No cultures were taken, but in one of the branches of the portal vein there were seen a few large bacilli, resembling the *Bacillus coli communis.*

Chronic Brass Poisoning. By Dr. W. Murray.—The writer describes the condition of chronic brass poisoning as seen by him in Birmingham. The first indication of poisoning is the existence of anæmia, with its usual accompaniments of palpitation and dyspnœa on exertion, dyspepsia, etc. Even prior to the first symptoms of poisoning one may discern a green line upon the teeth. It is on the teeth, and forms a band of varying depth in front of the bases of the teeth just where they emerge from the gums, and most marked on the teeth of the upper jaw. This line is only an indication of exposure to brass, not of actual poisoning. As the disease progresses there is gradual emaciation and aggravation of the various symptoms (dyspepsia, etc.). Diarrhœa is seen only in the later stages of the disease. Neuralgic pains and great nervousness are common. Cough is constant. Profuse sweatings occur in many cases. While admitting that brass poisoning is chiefly due to the copper in the brass, yet the writer holds that the zinc also plays a part. Potassium iodide is of little service. The writer has found phosphorus, in the form of dilute phosphoric acid, fifteen minims three times a day, almost a specific. In many cases the patients did not discontinue work, and yet recovered under its use.

The Treatment of Small-pox by Salol. By Dr. J. Biernacki and Dr. P. N. Jones.—The writers report the result of the salol treatment for small-pox in eight cases of that disease. Over twenty cases of small-pox were so treated, but in all but eight the patients had been vaccinated. Ten grains of salol were given every four hours. They conclude that salol may practically avert general pustulation and even have a partial abortive effect when given after maturation has commenced. It almost invariably hinders pustulation; the pustules form tardily, and, the process being imperfect, there is generally an entire absence of unpleasant odor. Scarring is inconsiderable and often absent. The secondary fever, as a rule, is absent under its use. As a whole, salol affords a means of treating small-pox superior to the methods in vogue.

The Radical Cure of Femoral Hernia. By Dr. T. E. Gordon.—The writer describes his method of operation for femoral hernia, which is based upon closure of the upper end of the crural canal, through an incision in the aponeurosis of the external oblique muscle. The structure which is most at fault is probably Gimbernat's ligament, and the writer's method aims at a reenforcement of that structure.

There is some danger of wounding the deep epigastric artery, but it is not an accident of serious consequence. Further, a direct inguinal hernia may result.

A Case of Enteric Fever of Three Months' Duration. By Dr. W. Murrell.—The writer reports a case of typhoid fever in a man, aged twenty-eight, in which the temperature remained elevated for over seventy days. There was no question of relapse nor of post-typhoid pyrexia, for there was never any complete defervescence, and the diarrhœa, with typical typhoid stools, persisted throughout. There were no complications. The diarrhœa was controlled by carbonate of bismuth; starch and opium enemata were of no service. The administration of Warburg's tincture at the most critical period of the patient's illness was followed by the best possible results. For two months the patient took three pints of brandy a week, with a fair allowance of champagne and port.

The Lancet, June 2, 1900.

The Use of Massage in Recent Fractures and Other Common Injuries. By Dr. W. H. Bennett.—The writer calls attention to the great value of massage in recent fractures, and describes in detail the technique of its use in a recent fracture of the leg. The great advantages of the treatment are: 1. The ease with which the patient is made comfortable by arresting the muscular spasm and so relieving the pain. 2. The effecting of rapid absorption of effused blood, etc. 3. The prevention of the stiffness by obviating the formation of adhesions. 4. The prevention of muscle-wasting and the preservation throughout the case of the normal nutrition of the limb. 5. The shortening of the time by at least one half during which the patient is prevented from resuming the use of the limb.

He begins the massage on the very day of the injury, using smooth upward rubbing. On the third or fourth day cautious passive movement is made below the fracture, combined in a few days with voluntary motion. A little later the joint above the fracture is massaged. Passive movement should always be preceded by smooth massage, which soothes the irritable muscles so completely that movements of the most complete kind are readily carried out without exciting muscular contraction of a harmful kind. Massage is especially valuable in intracapsular fracture of the neck of the thigh bone, and in fractures in the immediate neighborhood of the shoulder joint. The chief objections to the treatment are the amount of time it takes and the difficulty in finding a skilled, intelligent masseur or masseuse.

Primary Syphilitic Chancres. By Dr. J. Hutchinson, Jr. Lecture I.—The chief forms of primary chancre are the following: 1. A raised papule with little induration. 2. A disc of induration without ulceration. 3. An actual ulcer with an indurated base. The character of the bubo is one of the most remarkably constant features of syphilis. The glands are indolent and painless, not adherent to the skin, and are usually either almond-shaped or "bullety." In only one of a hundred and twenty-five cases observed by the writer did suppuration occur. In about fifty per cent. of the cases there is also a cordlike thickening of the lymphatic vessels leading up toward the groin. The presence of these cords is of great help in the diagnosis, but it must be remembered that they are occasionally to be noted in non-specific cases. As to the location of the chancres in men, in sixty per cent. of the cases the primary sore is either at the orifice of the prepuce, on its internal surface, or at the retropreputial furrow. Such sores are usually well indurated. The infrequency of syphilis in Jews is due to the hardening of the skin of the glans and prepuce produced by circumcision. The writer does not think that urethral chancres ever occur further back than an inch from the meatus. Multiple primary syphilitic sores are not so uncommon as is generally supposed—in a hundred and twenty-five cases seen by the writer the chancres were multiple in twenty per cent. Extragenital chancres are also more frequent than has been thought; the writer gives several instances of their occurrence in different parts of the body. On the hands they have the form of circular granulating patches with an edge of discolored or pigmented skin, with slight induration. The writer never gives green iodide of mercury in syphilis because of its instability and its tendency to cause diarrhœa and stomatitis.

Preventive Inoculation against Typhoid Fever. By Dr. A. G. R. Foulerton.—The writer reviews in detail the experimental work upon which the practice of preventive inoculation against typhoid fever is founded. In the procedures recommended by Wright, the originator of the method, a broth culture of typhoid bacilli is used, which after from fourteen to twenty-one days' incubation at 37° C. has been sterilized by heat at 60° C.; 0.5 per cent. lysol is then added to prevent accidental contamination. The amount used for human inoculation is two fifths the amount which would be fatal to a guinea-pig weighing two hundred and fifty grammes. The inoculations are made with an ordinary hypodermic syringe into the loose tissue of the flank or the back of the arm. The constitutional symptoms following injection may be severe: rigors, nausea, and a tendency to syncope often occur. There is a well-marked local reaction at the seat of inoculation; it may be severe, but, since the inflammation caused by the prophylactic fluid is a purely aseptic one, there need never be the slightest apprehension of suppuration. If the inoculation has been successful it will be found that the blood serum has after a certain interval acquired the specific agglutinative property to a marked degree. The writer reviews the statistics hitherto published, but says that the time has been too short for us to judge fairly. The results are not brilliant, however. Among the soldiers in South Africa typhoid fever occurred at the rate of six to the thousand among the inoculated and nine to the thousand among the uninoculated. The immediate after-effects of an antityphoid inoculation may be most unpleasant, and the procedure is only recommended for use in young persons who are liable to be exposed to typhoid fever: nurses and soldiers. In every case where it is desired that there should be a prospect of protection lasting for more than two years, it is desirable to insure a good tissue reaction by repeating the antityphoid inoculation. The second dose may be given a week after the first.

A Contribution to the Statistics of Rheumatic Fever and its Complications. By Dr. W. C. Bosanquet.—The writer's article is based upon the study of four hundred and fifty cases of rheumatic fever treated at Charing Cross Hospital from 1890 to 1897. Among the points brought out were the following: Both sexes were equally liable to the disease. Seventy-two per cent. of the cases occurred between the ages of ten and thirty years. Heredity would seem to have played a part in twenty-two per cent.

As to the influence of occupation, twenty-three per cent. of the cases were in domestic servants, and mostly women. The periods of yearly maximum incidence were May and November. Nothing definite could be determined as to the average duration, as it varied so widely. The knee and ankle were nearly twice as often affected as any other joints. Endocarditis was, of course, the most frequent complication, occurring in twenty-eight per cent. of the males and thirty-three per cent. of the females. Twenty-eight cases of pericarditis were seen. Hyperpyrexia occurred in only two cases, and chorea in thirteen, eleven of which were in females. In no case did death occur from an uncomplicated attack of rheumatic fever. The routine treatment consisted in rest in bed, fluid diet, and salicylate of sodium.

On Operations for Cancer in the Aged. By Dr. E. H. Freeland.—The writer reports the case of a woman, aged eighty-two, upon whom he operated for cancer of the left breast, removing the whole of the left breast, the pectoral fascia, and the axillary glands. The patient recovered perfectly from the operation, and lived in comfort for nineteen months, when she died suddenly from heart failure.

A Case of Two Aneurysms of the Transverse Arch of the Aorta. By Dr. G. J. Arnold.—The writer reports a case of double aortic aneurysm in a man, aged forty. There was no pulsation of the chest, no dullness on percussion, no tracheal tugging, inequality of pupils, nor of the radial pulses. The patient complained of hoarseness and dyspnœa, and examination showed abductor paralysis of left vocal cord. He died suddenly from hæmoptysis. The necropsy revealed a firm, sacculated aortic aneurysm situated between the origins of the innominate and left subclavian arteries. There was also a second aneurysm originating from the transverse arch, about the size of a billiard ball. This had ruptured into the trachea, thus causing death.

Intestinal Obstruction Due to Persistent Meckel's Diverticulum: Successful Laparotomy. By Dr. F. Fawsett and Dr. R. F. Jowers.—The writers report the case of a girl, aged eleven, upon whom they performed laparotomy for intestinal obstruction of three days' duration. Upon opening the abdomen several coils of intestine were found to be tightly nipped by a thin cord which came from the extremity of a Meckel's diverticulum and was again attached to the bowel, thus forming a ring through which the coils of intestine had slipped. The bowels were so distended that it was necessary to open them to permit the escape of the distending gas. Recovery was uninterrupted.

The Scottish Medical and Surgical Journal, May, 1900.

On the Increase of Diseases of the Nervous System and of Insanity. By Dr. William W. Ireland.—The author, in a paper read to the Medico-chirurgical Society of Edinburgh, presents the results of his investigations which embraced the collection of opinions from a large number of representative medical men. The author considers that the increasing excitement and complexity of civilized life are to some extent counterbalanced by many compensations.

"If we move about more, we obtain more frequent amusement and change of air; if letters and telegrams too often claim our attention and disturb our repose, they often banish uncertainty and anxiety. Sounder views on dietetics have become known, and drunkenness has become less prevalent; the decrease in intemperance in liquor among the middle and upper classes during the last half century has been very marked, and there is reason to believe that this decrease is extending to the lower classes. In general we lead more secure lives than our fathers did, live under better laws, and have less to fear from injustice and oppression. There can be no doubt that during the last half century the condition of the working classes has greatly improved, their wages are doubled, while the purchasing power of money has increased for most articles, and they live under much better sanitary conditions. The result has been a notable diminution of the death-rate both in England and in Scotland during the last quarter of the century."

The change from early practice among poorer patients to later among the richer classes is likely to lead a physician to a change of type in the diseases most often encountered. Also a man's special reputation may bring him more cases of a certain kind. The author considers that the most reliable results are to be gained from physicians who have long practised in country districts or in small towns, and among all classes of patients; and all such answering his inquiries have declared that there is no reason to affirm that diseases of the nervous system have increased in their districts relatively to other diseases. Among physicians of experience practising in large towns, the author names Sir W. T. Gairdner and Dr. MacNail of Glasgow, Dr. George Balfour of Edinburgh, Dr. David W. Finlay in Aberdeen, and others as being of the same opinion. Dr. Osler is neutral in his opinion, while Dr. C. H. Hughes, of St. Louis, and several British neurologists consider such diseases on the increase. The author concludes:

"From all the answers which I have received I should judge that there has been no noticeable increase in the number of these diseases in the country districts and in small towns, but there is some evidence that there has been an increase in those complaints in large towns, especially in functional disorders such as neurasthenia. Probably this increase affects some classes and persons of special pursuits more than others."

As to the relative frequency of the graver forms of nervous disease, the author concludes from statistics that the graver forms of diseases of the nervous system have increased in Great Britain, as they are said to have done in France and Germany, during the last forty-five years. In Scotland there seems to have been a stoppage in the increase from 1885 to 1897, which, he hopes indicates that the rise of the death-rate from these maladies is not fatally progressive.

Increase in insanity and suicide are both in evidence, and the result is summed up in the following words:

"There are men in the country who have the spirit to look at things as they are, and these I should ask to recognize that we have to deal with an advance along the whole line, an increase in nervous diseases, in suicides, and in lunacy."

Delivery by Basilysis. By Dr. A. R. Simpson, professor of midwifery in the University of Edinburgh.—The author, while admitting that improved forceps and a better appreciation of the conditions under which turning, Cæsarean section, and symphysiotomy can be safely carried out have in recent years greatly restricted the group of cases justifying cephalic embryotomy, considers that there is still, however, a not inconsiderable field for the employment of embryotomy procedures. In this operation he considers the basiotribe necessitating the use of two blades external to the skull inferior to operation with the basilyst, with which the basis cranii can be "so simply and safely and effectively dissolved from within the skull as to render quite unnecessary the application of even one external blade." In illustration he records the case of a dwarf in whom the basilyst was used effectively to break up the cranial contents and the base of the skull, with the result that delivery was ultimately effected by uterine efforts only. Professor Simpson has had a lighter model of basilyst made in which the internal perforating and external grasping portions fit like the two blades of a cranioclast, so that for extraction, when that becomes necessary, the basilyst tractor has the qualities of what is admitted the best instrument for the delivery of the perforated head.

Recrudescence in Scarlatina. By Dr. William Taylor.

The Chronology of Antenatal Life. By Dr. J. W. Ballantyne.

Lyon médical, May 27, 1900.

Physiological Intersystole and Pathological Overlapping of the Systole. By M. M. L. Bard.

A Case of Organic Hemianæsthesia.—M. J. Mallard reports such a case in which the lesion was localized in the optic thalamus.

L'Indépendance médicale, May 30, 1900.

Scabies. By M. M. Gaucher.—A clinical lecture in which the parasitology of the disease and its localization are mainly discussed.

Journal des praticiens, May 5, 1900.

Diuretic Action of Digitalis and Theobromine.—M. H. Huchard says that theobromine is an ideal diuretic in quantities of from twenty grains to forty-five and sixty grains, in divided doses given in the space of twenty-four hours. Digitalis is a valuable diuretic also, but is not so by virtue of exerting an increased arterial tension, as has been claimed. In œdema of renal or cardiac origin, theobromine is mainly to be relied upon.

La Presse médicale, May 23, 1900.

Rest and Exercise in Heart Disease.—M. H. Vaquez, considering Oertel's method of exercise, says that it offers a means of treatment which, while it does not cure, is of such benefit that it can not be ignored. It is contraindicated when extreme arterial tension is present and when there is albuminuria with renal insufficiency. Even these contraindications can be overcome by giving the patient complete rest and placing him on a milk diet for three or four months.

La Presse médicale, May 26, 1900.

The Plague in Australia and South America.—M. Netter, in discussing the latest appearances of the bubonic plague, urges early bacteriological examinations in suspected cases to make diagnosis certain before it is too late to prevent the spread of the disease. He emphasizes the appearance of the disease only in unhygienic, ill-kept, and insalubrious localities.

Urinary Toxicity. By M. Lesné and M. Bousquet.

La Presse médicale, May 30, 1900.

Pneumococcæmia.—M. E. Trétrop reports a case of septicæmia due to the pneumococcus which gave the symptoms of bubonic plague. The patient received antiplague serum and in two or three days his fever and his glandular enlargements disappeared and he recovered entirely.

Kefir.—M. L. Hallion has made a chemical study of this Caucasian drink. On account of its fermentation, it offers a nourishment of high degree, the milk being predigested. Its albuminoids are readily absorbable. It is of service in diseases of the alimentary tract and in disturbed nutrition.

Gazette hebdomadaire de médecine et de chirurgie, May 27, 1900.

Acute Spinal Perimeningitis.—M. A. Deleárde says that the disease appears most frequently in males between the ages of twenty and thirty years. Although a secondary perimeningitis may arise from an infectious focus in the surrounding soft parts, a cold abscess, a pleurisy, caries, or osteomyelitis, the pathogeny of an acute primary perimeningitis is still obscure. The disease begins suddenly and without definite symptoms. The patient complains of weakness and pain in the extremities. In a few days fever appears, motion is difficult, walking and standing are painful, and paralysis ensues. The legs are most frequently affected, with no spasmodic contractures, and the reflexes are but little diminished or may remain normal. Sensation is disturbed, the patient first experiencing sharp, lancinating pains in the affected areas. Hyperæsthesia may be present. Pressure upon the spinous processes at the site of the inflammation is painful. Urinary and fæcal retention are common. The fever may reach 104° F. and the pulse corresponds to the temperature. The patient rapidly becomes septic. Meningeal symptoms depend upon the invasion of the pus into the arachnoid space or pia mater. Death is the usual outcome from spinal meningitis. Surgical treatment, by offering drainage, or lumbar puncture is advised. Medical measures are purely palliative.

Diagnosis and Treatment of Tonsillar Ulcerations. By M. Brindel and M. Raoult. (See *New York Medical Journal,* June 9, 1900, p. 919.)

Gazette hebdomadaire de médecine et de chirurgie, May 31, 1900.

Prolonged Sleep of Seven Months.—M. F. Soca reports the case of a girl of eighteen years of age who, after entering the hospital, slept continuously for seven months, awakening long enough only to eat. She had previously fallen to the ground unconscious. On admission, walking was impossible: she was weak; there were headaches; no ocular paralysis; optic atrophy more pronounced on the left side; pupils dilated and not reacting to the light. The autopsy disclosed a sarcoma of the hypophysis.

Revue de médecine, May, 1900.

Desquamation in Typhoid Fever in the Adult. By Dr. Paul Remlinger.—Although desquamation is not uncommon as the result of typhoid fever in children, the author has been unable to find in literature any mention of its occurrence in the adult, unless Rolleston's and Clapham's patients, mentioned at a meeting of the Clinical Society of London held on January 10, 1890, without their ages being stated, were adults. Yet among 706 cases of the disease treated in a military hospital during the years 1898 and 1899 desquamation was observed in six instances. They were all grave cases, the fever being prolonged from thirty-two to fifty-two days, and in all of them the desquamation was first noticed when the temperature began to fall, a fact which might appear to lend color to the view that in children the peeling is due to sudamina, but the author thinks it is of trophic origin. In his cases it was intermediate in character between that of measles and that of scarlet fever. It began on the sides of the chest and abdomen and remained most prominent in those situations. In all but one case it was limited to the trunk; in three there was concomitant falling of the hair.

A Clinical Study of Certain Infectious Diseases. (Continuation.) By M. H. Roger.

The Functions of the Thyreoid Body. (Conclusion.) By M. Gabriel Gauthier.

Revue de chirurgie, May, 1900.

Wounds of the Rectum. By M. Quénu.—This is a cyclopædic article on all forms of wounds of the rectum except those made accidentally in the course of surgical operations—namely, punctures, cuts, bruises, and gunshot wounds. An advantageous summary of it can hardly be made.

A Note on Teratological Embryotomy. By M. C. Féré.—The kind of "embryotomy" to which the author has reference seems to be the formation of double monstrosities by some structure, such as a fold of the amnion, pressing upon and dividing the embryo. By experiments in the partial varnishing of hens' eggs he has been able to produce double monstrosities, but not to satisfy himself that the division was due to amniotic pressure, although he does not deny that that may be a cause.

Fractures of the Neck of the Radius. By M. Albert Mouchet.—The author's observation leads him to declare that these fractures, at least in children, are not so rare as is generally supposed. He has found them more frequent than fractures of the olecranon.

Median Osteotomy of the Hyoid Bone as a Means of Access to the Lower Pharynx and the Base of the Tongue. By M. Maurice Vallas.

Wiener klinische Wochenschrift, May 24, 1900.

Present Status of Dressing Wounds in War.—Dr. J. Habart concludes that the repeating rifle and the newer artillery will mean a closer communication between enemies, with a corresponding increase in wounds, which, however, with the modern antisepsis and asepsis of the hospital corps, run a more favorable course than in former days. The indications for operative intervention, as hæmostasis, resections, amputations, saline infusions, etc., have become easier on the battlefield for the same reasons. Antisepsis is best for the fighting line, asepsis for field hospitals. The first dressing is no more important than the first transportation of the wounded, which must be rapid, at the same time sparing the injured as much as possible. Sufficiently numerous and properly trained attendants and surgeons may procure good healing of a wound from the moment of the first dressing. The first dressing station should be as near the fighting front as possible to facilitate rapid aid.

Lues Hereditaria Tarda.—Dr. F. Schuster reports a number of cases observed in the barracks in Vienna, which fulfill the characteristic conditions: 1. Absence of any scar which would denote a primary lesion. 2. Syphilis in the parents. 3. Tertiary syphilitic appearances in a comparatively young person. The author points out especially the numerous relapses in the cases under his observation.

Resuscitation in Death from Asphyxia, Chloroform, and Electricity. (Concluded.)—Dr. J. Prus has found that animals killed by electricity can be resuscitated by his method of exposing the heart, practising cardiac massage, and artificial respiration. His experiments have led him to believe that persons killed by lightning or severe shocks of electricity die from cardiac paralysis. His conclusions on the entire series of experiments are that an important element is massage of the heart exposed by resection of a rib. This manœuvre must be undertaken at the latest a minute and a half after death by asphyxia, three to four minutes after poisoning by alkalies, and three to nine minutes in chloroform poisoning. The author has found the human heart still responsive to this method of massage two hours after death by hanging, and urges that it be tried in all suitable cases when other means of resuscitation have proved fruitless.

Wiener klinische Wochenschrift, May 31, 1900.

Agglutinating Power of Human Blood Serum.—Dr. J. Donath has experimented with the blood of patients suffering from anæmia, chlorosis, leucæmia, and pernicious anæmia. The blood of a healthy person was mixed with eighty-five per cent. of a sodium-chloride solution, and was then mixed in equal quantities with the serum of the blood to be examined. A drop of this mixture was then examined in hanging drop under the microscope. Usually agglutination of the healthy blood was seen, but the results were not uniform. The blood of healthy persons, however, rarely seemed to possess the agglutinating power.

Contribution to the Casuistics of Choledochotomy and Cholecystentero-anastomosis. By Dr. Fritz Pendl.

Berliner klinische Wochenschrift, May 21, 1900.

Hetol.—Dr. C. A. Ewald believes that some good results may be obtained by the subcutaneous injection of hetol (cinnamate of sodium) in cases of pulmonary phthisis. In his cases there was usually a gain in weight, but the general results did not justify the omission of other important factors of treatment.

Hæmolysin.—Dr. P. Ehrlich and Dr. J. Morgenroth have conducted a number of experiments proving that the blood cells of one species have a hæmolytic action—that is, they break up the red blood cells of another species into which they are injected. The same phenomenon was observed when the cells of one species were used upon another animal of the same species (goats). This action is due to the presence in an individual animal of an autolysin. From this it can be concluded that blood cells containing toxic elements might be violently poisonous if injected into an organism, even of the same species, while they remain harmless in the animal which produces them.

Influenza and Chronic Heart Disease.—Dr. Schott says that influenza can influence most easily a heart which has previously been diseased, weakened, pathologically changed, or irritated. Diseased valves offer a favorable nidus for the invasion of germs; and one valve, freshly infected, may spread the disease to other valves. Aortic valvular disease newly affected by influenza may evoke a violent angina pectoris; the inflammation may even spread and not rarely produces an acute aortitis. (To be continued.)

Special Wards for Phthisical Patients.—Dr. E. Aron is rather skeptical regarding the infection of other than tuberculous patients by phthisical patients in the same ward, if ordinary sanitary care and provision are made for the latter.

Wiener medizinische Blätter, May 27, 1900.

Frequency of Goître at Different Ages.—Dr. M. L. Mayer says that an enlarged thyreoid is most frequent between the ages of thirty-six and fifty. From fifty-five to sixty the incidence is high and is about the same as occurs between the ages of twenty-five and thirty-five. After sixty-five, the occurrence of goître sinks rapidly. (To be continued.)

Surgical Treatment of Basedow's Disease. By Dr. J. Schulz. (Continued article.)

Klinisch-therapeutische Wochenschrift, May 27, 1900.

Diagnosis of Urinary Diseases.—Dr. L. Görl says the main considerations which lead the patient to the physician are pain, bloody or cloudy urine, or a change in the quantity of urine passed. Acute retention, pain, and a change in the appearance of the urine are the principal symptoms complained of. Hæmaturia must be the cause of a careful examination to discover its source. Clots of a long and thin character usually emanate from the kidney. Irrigation of the bladder, which is followed by a clear return flow after a few ounces have been injected, speaks in favor of renal hæmorrhage, especially if, after a clear solution has been returned, the last few drops are of pure blood. The cause of the hæmorrhage must be sought: direct or indirect injury, the effect of food or drugs, disease of the urinary apparatus, asparagus, cantharides, or turpentine may evoke a hæmaturia. If blood appears in the urine in the absence of other symptoms, it may proceed from the kidney or the bladder. In the former case, renal carcinoma, heart disease, syphilis of the kidney, or a contracted kidney, may be at fault. In the first, the hæmorrhage is severe, is not influenced by rest, and a tumor may be felt. A heart lesion sufficient to call forth hæmaturia is usually of long duration and will be easily diagnosticated. If the bleeding comes from the bladder, it is usually due to a benign or malignant growth on the anterior or posterior wall of the bladder. The blood is intimately mixed with the urine, and with the three-glass test the last portion may consist of pure blood. In benign tumors, the hæmorrhage may be frequent or rare, and rest has no influence upon the character of the bleeding. In a malignant growth, such as a carcinoma with a long pedicle and many villi, hæmorrhage is frequent, while in a carcinoma infiltrating the vesical wall it is rare or entirely absent. Patients with enlarged prostates and a calculus in the bladder may show hæmaturia as their only symptom, which appears after some mild effort, to disappear again after rest. (To be continued.)

Therapeutic Value of Bromipine.—Dr. J. W. Frieser says that bromipine is a satisfactory substitute for the alkaline salts of bromine in all conditions in which the latter is employed. It has no disadvantages or aftereffects. It does not affect digestion, and bromism has not followed its use. In neurasthenia, hysteria, and epilepsy it is especially useful. It may be given hypodermically in single doses of a hundred and fifty grains. It is a stable product.

Wiener klinische Rundschau, May 27, 1900.

Ætiology of Alveolar Emphysema, and its Treatment by Mountain Climbing.—Dr. W. Thurn recapitulates the pathology and symptoms of alveolar emphysema of the lung. He dwells especially upon the effects of universal stasis and congestion which accompany this condition, and ascribes them to the insufficient exchange of gases in the lung. The nutrition suffers, the albuminoid substances of the blood are diminished, and the fat is improperly oxidized, owing to the relatively small amount of oxygen inhaled. The patients, therefore, have a tendency to corpulency. The author believes that a prime condition for the development of emphysema is the so-called "dry catarrh" of Laennec, in which the bronchial mucous membrane is hyperæmic, swollen, and secretes small quantities of tough, transparent mucus. It is always accompanied by dilatation and insufficiency of the right ventricle. The cardiac ailment must be of long duration to evoke an emphysema. Strong smokers and beer drinkers are apt to suffer from it, as well as those who suffer from hypertrophy of the right heart due to long-continued strain (*Arbeitshypertrophie*). (To be continued.)

Isolated Ulnar Paresis.—Dr. E. Menz reports the case of a female telegraph operator who suffered from a paresis of the ulnar nerve alone of the left arm. He emphasizes the fact that this is an occupation paralysis. Recovery followed and remained complete when the patient rested her arm upon a pillow while using it in her daily labor.

Surgical Treatment of Pulmonary Gangrene. (Conclusion.)—Dr. Fritz Berndt emphasizes the necessity and desirability of securing adhesions between the two pleural surfaces together before incising the pleura, to prevent collapse of the lung. This can be achieved by taking deep sutures before the pleural incision is made, bringing the surfaces into contact. Irrigation is dangerous after the operation, as it provokes coughing and the irrigating fluid may thus contaminate healthy lung tissue. Tamponade has this advantage over drainage, that it is hæmostatic as well as offering drainage. The tampon is not so likely to be displaced by coughing as an ordinary drainage tube or a gauze drain. The patient must not be allowed to lie too long on the healthy side for fear of infecting the healthy lung with the secretions of the gangrenous cavity. A diagonal position, even though it is uncomfortable, is to be preferred.

Instinct. By Dr. F. Liebert. (Continued article.)

Deutsche Medizinal-Zeitung, May 28, 1900.

Venesection.—Dr. Bachmann reports thirty-three cases on which he practised venesection for the purpose of improving the condition of his patients who were suffering from a great variety of diseases. In each instance, he reports that the patients were improved. He believes that poor hygienic surroundings, limited air space, and an insufficiency of fresh air are responsible for changed conditions in the blood, which offer a fruitful soil for the invasion and propagation of pathogenic bacteria, especially the tubercle bacillus. Venesection, fresh air, and nourishing food are the main elements of therapeutics.

Die medicinische Woche, May 28, 1900.

Ranula and Epulis.—Dr. Popper is inclined to take Roser's view that ranulæ represent congenital cysts, their formation depending upon an incomplete closure of the branchial clefts. Incision alone offers no prospect of cure: the cyst must be completely dissected out. Wharton's duct must be avoided during the operation. A ranula may occasionally become the seat of malignant degeneration. He proposes the more comprehensive name "cystis ranulaformis paroglottica."

The alveolar growths known as epulis may be either benign or malignant. Their only treatment is surgical, the operation depending upon the location, size, and disposition of the neoplasm. An epulis, the origin of which lies in a carious tooth, may be treated by curetting and cauterization. Resection of the jaw may even be necessary for the total extirpation of the growth.

Diagnostic Errors.—Dr. Lipowski narrates five cases in which the physical signs and the symptoms led to one diagnosis, while the autopsy disclosed conditions of another kind. He points out the difficulty of always reaching a correct anatomical conclusion.

The Brooklyn Medical Journal, May, 1900.

Dispensary Experiences. By Dr. F. S. Kennedy.—The author describes his experience with various dispensaries—good, bad, and indifferent—and the abuses prevalent in some of them, particularly the unaudited use of subscription boxes, the using of public institutions as feeders for the physician's private practice, the advertising display of the names of members of the staff, and the admission of unsuitable applicants as patients.

Some Points in the Chemistry of Cow's Milk with Reference to Infant Feeding; with a Description of a Method for Home Modification of Cow's Milk. By Dr. E. H. Bartley.—The method recommended by the author for modifying cow's milk is thus described:

"Siphon off from the bottom of a bottle of fresh milk of good quality *three fourths* of its contents, leaving the cream and upper part of the milk undisturbed in the bottle. This may be easily done with a small glass siphon or rubber tubing, previously filled with water, to start the siphonage. Pinch one end of the rubber tube and hold it firmly, while the other is thrust through the cream and to the bottom of the bottle. Lower the outer end into the inner vessel of an ordinary *double boiler,* and release it, when the skim milk will run out, provided the latter vessel is kept lower than the milk in the bottle. To the milk thus drawn off add a teaspoon and a half of a good essence of pepsin, and warm slowly in the double boiler to blood heat, and keep at that temperature until thoroughly curdled. Now heat, with constant stirring, until a thermometer dipped into the milk shows a temperature of 155° F., and remove from the fire. Strain, while hot, through clean wire strainer and dissolve in the whey a heaping tablespoonful of sugar of milk and the white of one egg. When cold, pour the sweetened whey back into the milk bottle and mix thoroughly with the cream and top milk. Pasteurize the mixture in a Freeman's pasteurizer.

"NOTE.—Should this food prove too laxative, reduce the quantity of milk sugar. It is well to add, at the time of feeding, from one to two teaspoonfuls of limewater to each meal. As the child increases in age and strength the amount of bottom milk siphoned off may be diminished."

A Consideration of the Radical Treatment of Hæmorrhoids. By Dr. William Francis Campbell.—The author discusses various operations and recommends an operation for the separate excision of the hæmorrhoidal tumors with approximation by suture of the incised mucous membrane. After dilating and irrigating, the pile is seized with forceps and drawn away from the anus until its base is rendered tense. With a blunt-pointed scissors and a series of snips the operator severs the lower attachment of the pile, dissecting it up from its submucous attachment and carefully incising the mucous membrane above until it is attached by a small pedicle, in which are the vessels. The pedicle is ligated with fine catgut and the pile cut away. The operation is completed by suturing with catgut the incised edges of the mucous membrane in a longitudinal direction. The wound is dressed with iodoform gauze.

Alcoholism and its Treatment. By Dr. L. J. Morton.—The author believes in stopping the use of the intoxicant as soon as possible, but never so soon as to shock the patient or set up a delirium by its sudden cessation. The drugs that he uses principally are strychnine in small doses for weak hearts, a laxative to relieve arterial congestion, and a sedative, such as the bromide of sodium, at night to produce sleep. For those who are weak and have been drinking for a long time he prescribes liquid diet given hot every two hours, such as hot milk, broths, soups, or gruel, through the night as well as in the daytime; also, baths occasionally and rest in bed. The gold cure, which is nothing more than chloride of gold in fractional doses, and hypodermics of strychnine and atropine he has used in some instances with good results; also, the extract of ipecacuanha in small doses given in a glass of whisky three times a day until the patient has become so nauseated that he does not care for it any more.

Albany Medical Annals, May, 1900.

Fevers and Fever Remedies. By Dr. A. Jacobi.—This article, while it offers little or nothing that is new, is an excellent epitome of almost all that is known on the subject treated of, in which the author's ripe experience enables him to give valuable judgments. It can not be satisfactorily abstracted, but should be read in its entirety by those interested.

The Practical Value of the Presence of Lactic Acid in the Gastric Contents for the Surgical Treatment of Diseases of the Stomach. By Dr. Paul Cohnheim. Translated by Dr. Andrew MacFarlane.—The author considers Ewald's objections to the value of the lactic-acid reaction as an evidence of carcinoma of the stomach before the presence of a palpable tumor. Hammerschlag has especially determined from a large amount of material that lactic-acid fermentation always occurs where there is a concurrence of stagnation of the stomach contents, of absolute failure of hydrochloric acid and of ferments (achylia). These conditions occur in carcinoma of the pylorus, which first produces stagnation, later achylia, on account of the secondary atrophic gastritis which, as a rule, accompanies carcinoma.

What diseases, asks Cohnheim, besides carcinoma of the pylorus, produce lactic-acid fermentation—i.e., stagnation plus achylia? 1. Of gastric affections, there comes into consideration the hypertrophic pyloric stenosis or stenotic gastritis. The hypertrophic pyloric stenosis is the result of a very long continued gastritis atrophicans which by inflammatory action has induced a thickening of the pylorus. It is well known that achylia may exist for years without symptoms, but as soon as the passage to the duodenum is obstructed the severest and most threatening symptoms may instantly appear. Cases of gastritis complicated with a stenosis of the pylorus are very rare and for the question under consideration of no importance.

2. Fenwick and others have determined that in the majority of cases of carcinoma of the internal organs an atrophy of the gastric mucous membrane occurs, the cause of which is not known. Thus in progressive pernicious anæmia an atrophy of the gastric mucosa is almost constantly found, whether the cause or the result of this disease.

Therefore, when a carcinoma of an abdominal organ, located close to the pylorus, at the duodenum, gall bladder, or pancreas, exerts pressure on the pylorus or the duodenum and produces an obstruction, lactic-acid fermentation will occur in the stagnating contents as soon as the progressive cachexia induces an atrophy of the gastric mucous membrane. When such a tumor, while compressing the pylorus, does not exceptionally lead to atrophy of the gastric mucous membrane, then lactic acid will not develop in spite of the stagnation any more than it would in a benign duodenal stenosis after ulcer, gallstones, etc.

If special clinical symptoms relating to the gall bladder and pancreas, as icterus and glycosuria, do not help in the diagnosis of these cases, then clinically they can not be diagnosticated from carcinoma of the pylorus. Practically it is for therapeutic purposes the same. In cases with stagnation and presence of lactic acid, the lesion is a carcinoma of the pylorus in about ninety-eight per cent., and in the remaining about two per cent. either a gastritis with stenosis or a carcinoma in the vicinity of the pylorus. Shall operative procedure then be deferred so long as a tumor is not palpable. as Ewald recommends, on account of these exceptions, which form about two per cent.? The author believes the opposite to be the true course, since in these exceptional cases as well as in carcinoma of the pylorus the knife alone can bring improvement or cure. Without surgical intervention the strength will entirely fail, while an early radical or palliative operation will either produce a complete recovery or so improve the condition as to render life comfortable for years. This is especially true in the cases of gastritis with non-malignant stenosis, as Rosenheim has shown in his case of gastritis gravis.

Whether in these cases a resection is still possible or only a gastro-enterostomy indicated will be determined at the operation in each case. Ewald says in this connection that nothing absolutely definite about the form of operation should be determined before the abdominal cavity is opened. We are therefore forced to the conclusion that in every case where lactic-acid fermentation in gastric contents appears, operative procedure is indicated, even when no tumor is palpable, and provided that the strength of the patient warrants it. It makes no difference if a carcinoma of the pylorus is present or not.

The Ætiology and Treatment of Tuberculosis in Children. By Dr. James W. Wiltse.

New Orleans Medical and Surgical Journal, May, 1900.

A Note on the Interval between Infecting and Secondary Cases of Yellow Fever, from the Records of the Yellow Fever at Orwood and Taylor, Mississippi, in 1898.—By Dr. H. R. Carter, United States Marine-Hospital Service. — The author propounds the question, "How long in time in every particular instance determinable at Orwood was it between the development of a case of yellow fever in an uninfected place and the development of the next case (and other cases) contracted (indirectly) from the infection from the first case?"

Orwood is not a town, not even a hamlet. It is a "neighborhood," an agricultural community about twelve miles from the railroad at Taylor, consisting almost exclusively of white people, living on their farms, seldom closer than a mile apart, working their own lands with little hiring, having little intercourse with the outside world, practically all non-immune to yellow fever. The people are intelligent, law-abiding, and well disposed, and have the most implicit confidence in their medical adviser, Dr. Gant. From this it appears that the field was an exceptionally suitable one for such an investigation. Dr. Carter considers in detail the evolution of the cases, and arrives at the conclusion that there is much evidence to show that the time from the infecting to a secondary case is usually in the third week, or rather usually not prior to the third week. There is, of course, no definite limit of time at which the situation could be called "safe" or "unsafe," but "hope of safety increases with the passage of the third week, and as the time beyond this passes." He adds: "This law (one will admit it at least as a working hypothesis) is also of value in predicting the progress of an epidemic which will spread. From the first (infecting) case to the first group of cases, infected at his house, is generally from two to three weeks. These form new foci (the original one remaining active), and in from two to three weeks more the second group of cases appears. At this time, four to six weeks, the fever should be 'scattered' in tertiary foci, just beginning. Prior to this it is found *only in those who have had a common exposure,* seldom then in more than from four to eight places, although it is not the number, but the common exposure, that is in question."

Clinical Observations on Heroine and Heroine Hydrochloride as Compared with Codeine and Morphine. By Dr. F. C. Floeckinger.—The author has used heroine extensively in his practice as physician to the county hospital, poorhouse, the asylum, and county jail in various acute affections of the respiratory tract, comprising lobar and lobular pneumonia, acute and subacute bronchitis, pleuritis sicca, pleuritis exudativa, laryngitis, and the respiratory complications of acute infectious diseases, such as scarlet fever, measles, typhus and typhoid fever. Administered at first in doses of one sixth of a grain, he found that vomiting and somnolence often appeared, wherefore he subsequently gave only one twelfth of a grain for a dose, repeating it more frequently when necessary. To sum up, he finds heroine an excellent sedative for the respiratory tract, devoid of the narcotic effect of codeine and morphine, and therefore in physiological doses entirely uninjurious.

Miscellaneous.

Sidonal: a New Remedy.—Weiss (*Medical Press,* March 28th; *Medical Age,* April 25th), at a recent meeting of the Berlin Society for Internal Medicine, stated that Jaffe and Darmstaedter had made a preparation by combining quinic acid and piperazine, and had forwarded a sample to the clinic in order to have its actions ascertained. The testing of it had shown that the preparation really had a great effect in checking the formation of uric acid. If from five to eight grammes of sidonal were given daily the excretion of uric acid was diminished from forty to fifty per cent., the quantity of hippuric acid being increased. As there was no increase in the after periods, it was evident that the action was not simply the retention of the uric acid in the system. Hippuric acid, being very soluble in water, has no injurious influence. From these investigations it appears likely that sidonal will prove a useful remedy in gout.

To Estimate the Permeability of the Kidney.—Simonelli (*Centralblatt für Chirurgie,* No. 10, 1900; *Therapeutic Gazette,* May 15th) commends potassium iodide, given in gelatin capsules with a moderate quantity of water, as a means of estimating kidney permeability. Normally iodine is eliminated in both the urine and saliva within the first half hour and continues for some time. In cases of nephritis, the iodine is not detected for from five to twenty hours, is passed in less quantity somewhat irregularly, and its elimination is not so long continued. Its presence is determined by the ordinary starch-paper test.

Letters to the Editor.

"NORMAL SALT SOLUTION."

66 East One Hundred and Twelfth Street,
New York, *May 22, 1900.*

To the Editor of the New York Medical Journal:

Sir: In the article on Cystitis, by Dr. Henry H. Morton, in your issue of May 19, 1900, he recommends for cleansing the bladder walls, "*normal salt solution, six per cent.*" My impression is that the normal salt solution is *not* six per cent., but six tenths of one per cent., or six grammes to a litre. Does the doctor mean this solution, or does he mean to recommend a solution of the strength of six per cent.?

A. L. GOLDWATER, M. D.

THE COUNTING OF A RAPID PULSE.

WICHITA, KANSAS, *May 3, 1900.*

To the Editor of the New York Medical Journal:

SIR: If it has not yet been thoroughly impressed upon Dr. J. C. Wilson that some men can count a pulse of 180 or more without a "machine," I should like to add another report to the list.

My case was one of scarlet fever without eruption. I first found the pulse 180, regular, and moderately full. Later on the same day I found it 198. Next morning it was 156, where it continued for three days. The patient recovered, but in a few months succumbed to tuberculosis.

ARCH. D. JONES, M. D.

Book Notices.

Elements of Clinical Bacteriology. For Physicians and Students. By Dr. ERNST LEVY, Professor in the University of Strassburg i. E., and Dr. FELIX KLEMPERER, Privat-Docent in the University of Strassburg i. E. Second Enlarged and Revised Edition. Authorized Translation by AUGUSTUS A. ESHNER, M. D., Professor of Clinical Medicine in the Philadelphia Polyclinic, etc. Philadelphia: W. B. Saunders, 1900. Pp. 7 to 441. [Price, $2.50.]

THE work of Levy and Klemperer has long been favorably known to all workers in bacteriology. It is a genuine pleasure to see it rendered into the English language, for thus its usefulness will be manifestly increased. This is not, as its name would imply, merely a book on bacteriology; but it is a work which, instead of going into the abstruse details of bacteriological technics, sums up our present knowledge of the relation which bacteria bear to disease. Each disease is taken up in turn, and the micro-organisms which can and usually do produce it are mentioned in detail, with their biogeny and the various methods for their recognition. A very readable chapter on immunity is included in the book, and that on methods of culture and examination is especially valuable from the clinical as well as from the bacteriological standpoint. It is almost impossible in a large book of this kind, so full of detail matter, to select special elements to praise or to review. It will do to say that the book is one with which every practitioner who desires to keep in touch with the advances of his profession should be familiar. The translation and the illustrations are beyond reproach.

The Anatomy of the Brain. A Text-book for Medical Students. By RICHARD H. WHITEHEAD, M. D., Professor of Anatomy in the University of North Carolina. Illustrated with Forty-one Engravings. Philadelphia, New York, and Chicago: The F. A. Davis Company, 1900. [Price, $1.]

THIS little volume contains in a condensed form the essential details for a student's use. It seeks to impress upon him the newer nomenclature of the anatomy of the brain by giving in parentheses the terms adopted by the Geneva council of anatomists. The illustrations are of sections made through the brain, and are of sufficient clearness and variety to give a good picture of the brain in its entirety. The book will undoubtedly serve a good purpose in inculcating this difficult portion of anatomy into the student's mind.

Outlines of the Comparative Physiology and Morphology of Animals. By JOSEPH LE CONTE. New York: D. Appleton and Company, 1900. Pp. xviii–499. [Price, $2.]

PROFESSOR LE CONTE has condensed his lectures into the compact form in which they appear in this book. The reader is impressed at once with the fact that more space and greater elucidation are devoted to physiology than to morphology, a fact which the author explains on the ground of lack of space, whereas his descent from man to the lower vertebrates he justifies by arousing the interest of the student at once. Nevertheless, the invertebrates certainly suffer in their treatment in this work, and a few more pages might have sufficed to remedy this defect. The subject-matter of the book leaves no room for criticism. It is in accordance with the higher teaching of biology in giving a broad general survey of its field and in connecting its facts with the study of evolution. The value of such a work lies in the confidence which the reader entertains in the author. In this instance Professor Le Conte's great reputation as a biologist and as a teacher will be a sufficient guarantee for the trustworthiness of the text.

Die Krankheiten der Frauen. Für Aerzte und Studirende. Dargestellt von Dr. med. HEINRICH FRITSCH, Professor der Gynäkologie und Geburtshülfe, etc., an der Universität zu Bonn. Neunte, völlig erneute Auflage. Mit 271 Abbildungen in Holzschnitt. Braunschweig: Wreden, 1900. Pp. xiv–650.

THE ninth edition of Professor Fritsch's book differs from its predecessors only in being larger and in being brought up to date. As a practical text-book on gynæcology it is the same classical, conservative, and severely thoroughly work it has always been.

We note that in this edition the entire part which treats of cystoscopy has been rewritten and enlarged. It is interesting to observe that Fritsch ignores the work of Pawlik and of Kelly in this field, preferring the cystoscope of Nitze for his vesical investigations. The author has adopted, as, indeed, he has helped to promulgate, the surgical treatment of tubal gestation as soon as the diagnosis is made. He prefers to await the outcome of a hæmatocele by absorption if it gives rise to no unpleasant or dangerous symptoms. Myomectomy he performs only under certain conditions, usually preferring to allow a woman to possess her fibroid tumor in peace if she is near the menopause, if it gives her no severe pain, or if she has no profuse hæmorrhages.

Really valuable additions to this volume are the excellent advice given for the preparation of patients for an operation and the full directions included for the after-treatment of patients after each operation. More and more attention is being paid to this department of special and general surgery, and we know of no better example of the truth of this statement than the great amount of space given by Fritsch to these subjects. An extended chapter is also devoted in this edition to asepsis in gynæcology, in which so much work has been done by Sänger.

Professor Fritsch's book is essentially German, and there is not much borrowed material in it; and yet it stands as a modest example of a modern and fully up-to-date text-book of gynæcology.

Essentials of Surgery, together with a Full Description of the Handkerchief and Roller Bandage. Arranged in the Form of Questions and Answers Prepared Especially for Students of Medicine. By Edward Martin, A. M., M. D., Clinical Professor of Genito-urinary Diseases in the University of Pennsylvania. Illustrated. Seventh Edition, revised and enlarged. With an Appendix containing Full Directions and Prescriptions for the Preparation of the Various Materials used in Antiseptic Surgery. Also Several Hundred Receipts covering the Medical Treatment of Surgical Affections. Philadelphia: W. B. Saunders, 1900. Pp. xv–341. [Price, $1.]

The seventh edition of this little work for students is somewhat larger than the previous issues, having been thoroughly revised. Among the additions may be noted a suggestive article on inflammation of the vermiform appendix in which the author follows the well-known teachings of McBurney. The whole volume is permeated with modern surgical notions, and is certainly a safe book for the student to use in connection with a larger text-book.

Christian Science Dissected. By A. D. Sector. St. Louis: The Christian Publishing Company, 1900. Pp. 61.

This is a pamphlet dealing with Eddyism both as a mode of healing and as a religion. It exposes in a forcible manner the absurdities and contradictions of the cult. It is, as the author says in his preface, written for busy people, therefore conciseness and plain language have been aimed at and attained. It might cause some waverers to pause and can be recommended for that purpose.

BOOKS, ETC., RECEIVED.

A Memoir of Henry Jacob Bigelow, A. M., M. D., LL. D., Member of the Massachusetts Medical Society; Emeritus Professor of Surgery in Harvard University, etc. Boston: Little, Brown, & Co., 1900. Pp. 3 to 297.

Surgical Anæsthesia. Addresses and Other Papers. By Henry Jacob Bigelow, A. M., M. D., LL. D., Emeritus Professor of Surgery in Harvard University, etc. Boston: Little, Brown, & Co., 1900. Pp. viii–3 to 378.

Orthopædic Surgery and Other Medical Papers. By Henry Jacob Bigelow, A. M., M. D., LL. D., Emeritus Professor of Surgery in Harvard University. Boston: Little, Brown, & Co., 1900. Pp. ix–3 to 373.

The Mechanism of Dislocations and Fracture of the Hip. Litholapaxy; or, Rapid Lithotrity with Evacuation. By Henry Jacob Bigelow, A. M., M. D., LL. D., Emeritus Professor of Surgery in Harvard University, etc. Boston: Little, Brown, & Co., 1900. Pp. ix–3 to 356.

Proceedings of the Academy of Natural Sciences of Philadelphia. 1900. Part I. January and February.

The Present State of our Knowledge of the Action of the Various Therapeutic Serums. By Antonio Fanoni, M. D. [Reprinted from *Pædiatrics.*]

Eleven Cases of Castration, and their Histories. By B. Merrill Ricketts, M. D. [Reprinted from the *Medical Review.*]

On Radical or Tentative Treatment of Piles. By Thomas H. Manley, M. D. [Reprinted from the *Medical Brief.*]

Cholangeiostomy—Two Cases Recovering. By B. Merrill Ricketts, M. D., of Cincinnati. [Reprinted from the *Medical Review of Reviews.*]

The Therapy of Feminine Hernia in the Adult. By Thomas H. Manley, M. D. [Reprinted from the *Therapeutic Gazette.*]

Hæmorrhage and Circulatory Disturbances in Complicated Fracture. By Thomas H. Manley, M. D. [Reprinted from the *Medical Standard.*]

The Management of Large Congenital Exomphalos—Infantile. By Thomas H. Manley, M. D. [Reprinted from the *Philadelphia Monthly Medical Journal.*]

Colored Rays of Light. By J. Mount Bleyer, M. D. [Reprinted from the *Medico-legal Journal and Bulletin of the Congress of Tuberculosis.*]

Mittheilungen aus der Unfall-Abtheilung am königl. Charité-Krankenhause. Von A. Köhler. [Sonder-abdruck aus den *Charité-Annalen.*]

Ueber einen Fall von multipler Necrose des Schädeldaches. Von A. Köhler. [Sonder-abdruck aus den *Charité-Annalen.*]

Miscellany.

The Relief of Thirst.—Dr. A. Philip writes to the *Lancet* for May 26th referring to a mode of quenching thirst by keeping a small round pebble in the mouth. Thirst disappears and perspiration is diminished. Dr. Philip states that he has gone as long as eight hours and a half in a broiling sun with nothing but dry biscuits and cheese for a lunch and at the end of that time was not particularly thirsty. This plan is by no means new, though, as it is probably not so widely known as it deserves to be, we reproduce it. We have ourselves made frequent use of it with good effect.

The Methodist Episcopal Hospital, Brooklyn.—A new pavilion for surgical operations was open for inspection on the afternoons of Tuesday, Wednesday, and Thursday of this week.

The Thirteenth International Medical Congress.—According to instructions from Dr. A. Chauffard, secretary-general, no subscriptions to the congress will be received after July 15th, and no subscriber's name will appear in the official programme whose subscription is not received before June 15th.

The publications of the congress will consist of seventeen volumes, one of which will be sent gratuitously to each subscriber; that is, the volume containing the papers of the section under which he has inscribed himself. The other sixteen volumes may be purchased at a price of four francs a volume, or forty-five francs for the series.

To Settle the Question of Expert Testimony.—The Hon. S. P. Crosby (*Northwestern Lancet*, April 1st) makes the following suggestion: It has not been decided, he says, by the supreme court of Minnesota whether or not a person who brings an action for damages for a personal injury can be compelled by the court to submit to a physical examination as to the extent of injuries sustained. Some judges of the district court have held in the negative, others in the affirmative.

This question should be settled by legislation. We see no reason why a law should not be made which would in a great measure remedy the errors above referred to. Make it obligatory for a party who has brought an action for a personal injury to submit to a personal physical examination under the direction of the court. When the action is placed upon the calendar for trial, and is called to be set for a certain day, allow counsel for either side to call for a physical examination of the plaintiff. When this has been done the presiding judge shall make an order directing the said plaintiff to appear before two competent, expert physicians or surgeons within a specified time, and at a place by them designated, to be examined. The attending physician shall be present and take part in the said examination, and aid them and make any suggestions he may deem proper. Upon the trial allow only the two physicians who made the examination and the attending physician to give evidence. The two appointed physicians should receive their pay from the county, the amount to be fixed by law.

The Late Dr. Landon Carter Gray.—The members of the New York Neurological Society wish to record their profound sorrow at the untimely death of Dr. Landon Carter Gray. As one of the earliest members of the society, he was ever zealous in its behalf, and during many years of his activity added much to the interests of its meetings. His work was characterized by care and thoroughness in preparation, his thoughts were soberly presented in the light of a large clinical experience, and his conclusions were those of a sound thinker. In every line he wrote, and in every word he spoke, there was evidence of broad culture and refinement. He was a kind friend to many, disposed to help those who sought his counsel, and was always ready to allow for honest differences of opinion.

Whereas, The members of this society have sustained a severe loss in the death of their honored friend and colleague,

Be it resolved, That this acknowledgment of Dr. Gray's estimable qualities be recorded in the minutes of the society, and that a copy of these resolutions be sent to the *Medical Record*, the *New York Medical Journal*, and the *Medical News*.

[Signed.] B. Sachs, M.D., *Chairman*,
C. L. Dana, M. D.,
Frederick Peterson, M. D.

A Military Officer's Tribute to the Medical Staff in South Africa.—The *Lancet* for May 26th says: "We are indebted to an esteemed correspondent for the following extract from a letter from a field officer of a distinguished regiment: 'I do not know which has been the most admired out here—the wonderful organization for the comfort and removal of the sick and wounded or the extraordinary personal gallantry under fire of the medical officers; and I can assure you the fire has been *hot.* I have known medical officers, who had no right to be there, borrow ponies and ride upward of thirty miles to a fight and then saunter into the firing line just to tie up the wounded. I do not suppose every medical officer is a hero a bit more than every officer of my regiment, but there seems to be something wonderfully fine in a profession that lifts men so entirely above all apparent sense of personal danger. You may well be proud of the medical officers of the army, for their devotion has been a source of comment and praise not only among officers but men.'" This must be gratifying to the medical fraternity all the world over.

The Prevention of Malarial Fever.—The Liverpool School of Tropical Diseases has published for the use of residents in malarious places the following Instructions for the Prevention of Malarial Fever which we quote from the *New Orleans Medical and Surgical Journal* for May:

1. *The Nature of the Disease.*—Malarial fever or ague is caused by certain minute parasites which live in the corpuscles of the blood, and are called *hæmamœbidæ.* In order to produce an attack of fever, about two hundred and fifty million at least of the parasites must be present in the body; while in severe cases there may be as many as a billion or more. If they are present in sufficient numbers, they can easily be found by the aid of a strong microscope in a small drop of blood drawn from the patient by pricking his skin with a needle. Sometimes, however, when the patient is not actually getting the fever, they may exist in such small numbers that they can not be readily detected in this manner. The sudden rises of temperature which occur in this disease, and which are often accompanied by shivering (ague), are due to the parasites scattering their spores in the blood fluid. The parasites grow up together and scatter their spores, or "eggs," simultaneously; and it is at the moment when they do so that the shivering or rise of temperature begins. The spores then occupy fresh blood corpuscles; when the fever gradually ceases and sweating comes on. After one, two, or three days, a fresh attack of fever occurs, owing to the fact that another batch of parasites, many millions in number, have reached maturity and have scattered their spores. After a variable number of such attacks, the parasites may largely decrease in number, when the patient loses his fever for a time and feels better. At any moment, however, the number of parasites may increase again, either spontaneously or because the patient has exposed himself to the sun, or to chill, fatigue, and so on. Such relapses may occur even many years after the patient has left the malarious locality where he acquired the original infection, as, for instance, after his return from Africa to England. Between the relapses the parasites continue to live in him in comparatively small numbers; but, of course, after they have once become quite extinct, no relapse will occur unless as the result of a fresh infection. Besides fever, the parasites often cause other symptoms, such as enlargement of the spleen, anæmia, and darkening of the skin. Quinine kills the parasites.

2. *How Parasites in General Live.*—Men, animals, or plants in which parasites live are called their *hosts.* All parasites or their eggs pass, in some way or other, from one host to another—that is, from any infected man, animal, or plant, to a healthy one. Parasites may have different and, so to speak, ingenious ways for effecting this transference. A *large number* of them employ *a second species of animal* as a go-between. Thus *tapeworms* and the worms which cause *trichinosis* live a *part* of their lives in swine as well as in men. Swine eat human offal, and men eat swine; and these parasites thus transfer themselves alternately from the one to the other. Insects are often employed in this manner. Thus dogs often have a minute worm in the blood which enters the dog's flea, and returns to the same or another dog when this flea happens to be swallowed. Again, the *guinea worm* is carried by a water insect; and the

worm which causes *elephantiasis* is carried by mosquitoes. We know also two important diseases of cattle, called *Tsetse fly disease* and *Texas tick fever*, which are carried, one by the Tsetse fly and the other by a cattle tick. The fact is that these suctorial insects give great facilities to parasites for passing from one host to another. Like other parasites, the parasites which cause malarial fever must pass from one host to another—that is, must manage somehow or other to enter fresh persons to live in. Long ago it was thought likely that they too were carried by insects; and this has now been definitely proved to be the case.

3. *How we get Malarial Fever.*—It has been stated that the malaria parasites, the *hæmamœbidæ*, are easily detected by the microscope; in fact they have a very distinctive appearance. If, now, we allow mosquitoes of the kind called *anopheles* to bite persons infected with malaria parasites, and if we then dissect these mosquitoes, we shall easily be able to find the parasites growing also in the mosquitoes. If, on the other hand, we allow a hundred, or two hundred, or a thousand, of the same kind of mosquitoes to bite healthy persons, we shall find nothing like the parasites in them. It is easy to watch the development of the parasites in the *anopheles* by dissecting the latter at various intervals after they have been fed. The parasites are of course sucked into the insect's stomach. From this they burrow into its body tissues, in which they live for a week or more, and grow rapidly. On reaching maturity they produce a swarm of young, which, most remarkable to relate, enter the *poison or salivary gland* of the insect. Every one knows the itching caused by the bite of mosquitoes. This is due to a minute drop of an irritating fluid which is injected by the insect into the wound made by its proboscis. The irritating fluid comes from the salivary gland just mentioned, and may also contain the young of the malaria parasites. Hence these young must be injected into the wound made by the mosquito's proboscis, just as a bacteriologist injects bacteria by means of a syringe into a rabbit for experiment. When so injected, the young of the malaria parasite set up infection. That this is the case has been absolutely proved by a number of experiments made in India and Italy, and there is no doubt about it. Healthy men are attacked with malarial fever after being bitten by infected anopheles. These investigations have been repeated and confirmed by many men of the highest scientific ability, and are accepted as true by the leading experts on malaria. It has thus been proved that malarial fever, like all other parasitic diseases, is really *a catching complaint;* that is, it is communicable from the sick to the healthy by the agency of mosquitoes of the kind called *anopheles.* These mosquitoes bite a patient suffering from malarial fever, and after a week or more convey the parasites into healthy persons by their bite.

4. *Some Obscure Points Explained.*—Of course it is only the *first infection* of a patient which is caused in this manner. As already mentioned, after he is once infected, he may suffer from relapses for years—relapses which have nothing to do with mosquitoes. People who are ignorant of this often doubt the facts given above, because they find that they still get fever in places such as England, where there are no mosquitoes. Other objectors point out that mosquitoes exist where there is no malaria. They forget that only *mosquitoes of a certain kind* carry malaria (so far as is known at present). The harmless kinds of mosquitoes may therefore abound in a place without affecting the argument. Others say that malaria exists where there are no mosquitoes. Not a single instance of this has yet been recorded after sufficient investigation.* A third class of objectors say that they have become infected without being bitten by mosquitoes. But it is certain that one can be bitten without knowing it or observing any mark afterward, especially if one is bitten during sleep, while it is easy to overlook the presence of *anopheles* altogether. But it may now be asked: If malarial fever is only carried from man to man by mosquitoes, how comes it that the disease is connected, as we know so well it is, with stagnant water, rainfall, or disturbed soil? The answer is a very interesting one: It is because the *anopheles* do not breed in vessels of water, tubs, and so on, in which the ordinary kinds of mosquitoes breed, but as a rule only in *stagnant puddles of water on the ground.* Such puddles most commonly exist in low-lying flat localities, especially where the ground tends to be marshy, and, of course, during continuous rains. They also accumulate in places where the ground has been excavated, embanked, or trenched. Hence it is easy to see how the idea that malaria rises from marshes got about; and, of course, people formerly tried to explain the facts by the supposition that malaria is a miasm or mist which rises from damp soil. There is, however, no longer any reason at all for believing in malarial mists, and so on. The germs of malaria themselves do not rise from the soil. It is the *carriers* of the germs, the *anopheles,* that do so, or rather that rise from pools of water on the ground. This fact also explains why draining the soil so often removes malaria, because it drains away the breeding pools of *anopheles.* One other question requires mention. It is often thought that malarial fever may be acquired by travelers in uninhabited places. In such cases it is possible that the anopheles may convey the parasites from lower animals; and in fact monkeys, bats, and birds are known to have parasites closely like the parasites of malaria in men, and belonging to the same zoologic family, the *hæmamœbidæ.* It is open to doubt, however, whether infection can really be acquired in uninhabited places; although, of course, relapses often occur to travelers in such places as elsewhere. It is right to state that we can not yet say with absolute certainty that infection is produced *only* by mosquitoes, but there are numerous reasons for doubting the existence of any other route for infection; while, at all events, the mosquito theory will help us to prevent a great deal of fever.

5. *Facts about Mosquitoes.*—Mosquitoes are zoologically the same as gnats. They do not originate from grass and trees, as some people think; but from those little wriggling brown creatures, called wrigglers, which are found so commonly in tubs of water, and wriggle to the bottom on being disturbed. These creatures are the *larvæ* from which mosquitoes develop, just as butterflies develop from caterpillars. The larvæ *must* live in water. They take about a week to grow from the egg to the chrysalis stage, called the *pupa.* The pupa lives for one or two days, also in water; and then the adult winged insect rises from it and flies away. The adult mosquitoes do not live only for one day, as people

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* [One instance to the contrary is the case of Tallas in Asia Minor (cited by the *New York Medical Journal* for October 29, 1898, from the *Medical Record* for October 8th). It rests, however, on an unsupported statement and has many possible sources of error.—*Ed. N. Y. M. J.*]

think. They may live for *months,* and have been kept alive in glass tubes for ten weeks. In Italy they can hibernate all through the winter. They feed on fruit, birds, animals, as well as on man; but only the females suck blood, the males living on fruit, and possibly leaves. After feeding on a man or animal, the female generally sleeps gorged all day on the wall of a room or other place. Every few days she has to fly back to the water where she lived as a larva, or to some other suitable spot, to lay her eggs; and return afterward, probably to the place where she first obtained food. Hence, mosquitoes which feed on human beings generally breed in water *close to houses.*

Gnats and mosquitoes are scientifically known as *culicidæ.* We already know some two hundred species. These are divided into several groups called genera. The commonest genera are called *culex* and *anopheles,* and it is important to know how to distinguish between them, because *anopheles* carry malaria, while the *culex* appears to be harmless. This can be done by any one at a glance. *Anopheles* have a slim, elegant body, shaped like that of a humming-bird moth; a small head and a long, thick proboscis. When seated on a wall, the axis of the *body is almost* at right angles to the wall, and they generally have spotted wings. The *culex* has a coarser body, with a thick *thorax* or chest and a thin proboscis. When seated on a wall the tail hangs downward, or even points a little toward the wall, and the wings are generally quite plain. Observe also that the wings of the *anopheles* are spotted along the front edge.

The larvæ of the two kinds are equally different from each other. Those of the *culex* float when at rest on the surface of the water, suspended by their tails and their heads hanging downward, and when disturbed they *wriggle at once* to the bottom. But those of *anopheles* float flat on the surface of the water like sticks, and when disturbed wriggle *on the surface* with a backward *skating* movement. Then the *larvæ* of the *culex* are found almost entirely in *artificial* collections of water, such as tubs, pots, broken bottles, cisterns, and drains; while those of *anopheles* prefer *natural* collections of water, chiefly rain-water puddles which do not dry up too quickly, which do not contain small fish, and which are not liable to be scoured out by heavy rains; and may also be found sometimes in small ponds and submerged rice fields.

With a little practice any one can learn to distinguish between these kinds of mosquitoes at sight. It is interesting to keep the larvæ in bottles half full of water; they soon hatch into adults. The adult winged insects can easily be caught alive when seated asleep on a wall, by placing the mouth of a bottle *slowly* over them; and if a little water be put in the bottle they will soon lay their eggs in it.

Males can be distinguished from females by their possessing feathery *antennæ* on their heads. It should be added that *anopheles* larvæ are very fond of puddles containing green water weed; and when in captivity require to be fed on this green water weed. (See also paragraph 8.)

6. *Modes of Prevention.*—We must (1) avoid being bitten by mosquitoes as much as possible; (2) kill mosquitoes or their larvæ, especially *anopheles,* or prevent them breeding around our houses. No mode of preventive inoculation against malaria is yet known.

7. *How to Avoid Being Bitten.*—Unfortunately, this is not always possible, but a careful person can certainly avoid being bitten to a very large extent; and the less one is bitten the smaller are the chances of infection. Mosquito nets on the bed should invariably be used in all malarious countries, even when night punkas are available, and during the hottest weather. They are often employed in a very unintelligent manner. French nets and nets hung from rings should be avoided, because they fall round the bed in heavy folds, which are hot and close. The nets should be square, should be hung inside a framework, tucked carefully under the mattress all round, and stretched tight so as to allow air to pass through easily. The roof should be made of netting like the rest of the net, and not of long cloth. No rents, holes, or apertures should be allowed, and the net should never hang loosely round the bed down to the floor; because mosquitoes can find their way through the smallest opening. The mesh may be large, except when sandflies are present, because mosquitoes can not get through ordinary meshes. The hands and feet are often bitten by being thrust against the net during sleep; this can be prevented by having a loose frill or valance sewed on the net a foot above the mattress and also tucked under it. Where punkas are available they should swing above the mosquito net. Nets should be generally used for afternoon sleep as well as at night. On getting into bed, one should slip inside the net as carefully as possible, in order to avoid giving ingress to mosquitoes as well. If mosquitoes are found inside the next morning, it is due only to carelessness. Servants should be instructed to let down the nets before dark, and to tuck them carefully under the mattress. Close attention to these details will save much sickness.

Punkas should be employed as much as possible, as they are in India. *Anopheles* often bite in the daytime, but are kept off by the use of punkas. Flannel socks, in preference to cotton ones, preserve the ankles. Oil of lavender and some patent medicines are often recommended for keeping off the insects, but are not to be implicitly trusted. Numbers of people fancy that mosquitoes will not bite them. The truth generally is that they do not feel the bites, to which some individuals are very callous. Such fancies seldom stand the test of experiment, and persons who entertain them are often the victims of chronic malaria. Care in the exercise of these precautions should be redoubled in houses where *anopheles* are present; and also by travelers, when they are obliged to sleep in hotels, rest houses, or the houses of natives, where old infected mosquitoes may often abound. Patients suffering from fever, or who have lately suffered from fever, should always remember that they are capable of spreading the disease to others through the agency of mosquitoes, and are even capable of *reinfecting themselves* through the same agency. They can not, therefore, be too careful to avoid being bitten. This fact should also be remembered by those who live in the same house with patients, and are therefore especially liable to catch the disease from them.

8. *How to Destroy Mosquitoes.*—These precautions against being bitten should always be taken in malarious places; but at the same time people should try to rid their houses of mosquitoes as much as possible; and experience shows that this can generally be done to a very large extent in most places by the exercise of a little care and common sense. The fact is that the presence of many mosquitoes in a house is generally a sign of slovenly housekeeping, just as the presence of other vermin is, and is almost always due to the stupidity or laziness of the inmates.

It has been mentioned (paragraph 5) that, as a rule, man-eating mosquitoes like to breed close to houses, and that the *culex* larvæ live in *vessels* of water, and *anopheles* larvæ in *pools*. The first thing to do is to search carefully in and around the house for vessels and pools of water; and if there are many mosquitoes in the house, we may be almost sure that we shall presently find their larvæ somewhere close by. Thus *culex* larvæ swarm in any old tub or pot of water; in broken bottles, old gourds, flower pots, cisterns, garden fountains, and even in buckets of water kept for cooling soda water or washing plates; or in those small tins of water placed beneath the feet of tables and meat safes to keep ants away. They may also swarm in drains and small ditches. To find the larvæ, all that a person has to do is to go and look for them in places like these; he is sure to come across them almost immediately, and will recognize them at once from the descriptions in paragraph 5. We often find little red, wormlike creatures mixed with the mosquito larvæ; these are not mosquito larvæ, but the larvæ of midges.

To find *anopheles* larvæ we must generally go further afield. Small pools on the ground containing green water weed, especially rain-water puddles by the side of roads and paths, are their favorite haunts; but they may also be found in puddles on the surface of roads, or in hollows in rocks, in old wells, in drains, in small pools and rice fields, or even in "sloppy" ground among grass, or around stables or cattle byres. To find them we must simply go and look for them; and this should always be done if adult *anopheles* are seen in the house, or even if they are not actually seen, but if fresh cases of malaria are occurring close by. Stables and servants' go-downs are very favorite haunts for adult *anopheles*.

Now, in order to kill mosquitoes wholesale, it is necessary only to destroy their larvæ. This is generally a very easy matter, especially in regard to the *culex*. We have only to go around the premises at least once a week and to *empty out all pots and vessels containing stagnant water, and also to brush out with a broom all puddles containing larvæ*. As the larvæ take about a week to mature, this procedure will generally be enough to keep the insects away, but, at the same time, it is necessary to *prevent water collecting anywhere near the house*. These duties should be attended to by reliable persons, and *should not be left to native servants*.

If mosquitoes are numerous in a house, they will generally be found to be *breeding just outside the windows*. Hence people can generally keep their houses comparatively free of these pests simply by *attending to their own premises*. It often happens in towns, however, where houses are crowded together, that a neighbor is so obliging as to breed thousands of mosquitoes daily for the supply of the adjacent dwellings. In such cases a copy of this pamphlet may be sent him, with any remarks which may be considered suitable; and if he does not attend to these, the local municipality may be referred to. Generally speaking, great stupidity is shown in towns in warm countries with regard to the absence of all check to the breeding of mosquitoes. Prominent citizens should lay the matter strongly before municipalities; and all municipalities should employ at least one special agent for the destruction and prevention of mosquitoes.

But while small collections of water can easily be emptied out or brushed away, it is often more difficult, perhaps sometimes impossible, to deal with the larger collections of water in which mosquitoes, especially the dangerous ones, breed. In such cases the following measures are to be used:

1. All useless collections of water in which mosquitoes breed should be filled up or drained away, if this can be done at a reasonable cost.
2. If this can not be done, recourse must be had to the *habitual* use of *culicicides*.

It is unnecessary to discuss methods of draining or filling up stagnant pools; but the subject of culicicides requires close attention. The simplest culicicide is oil, especially kerosene oil (paraffin). This, if sprinkled on the surface of water, produces a fine film, which destroys the larvæ by choking their air tubes, or perhaps by annulling the surface tension of the water. But the film must spread all over the surface of the water, and must last for at least half an hour. The oil can be best applied by "painting" the pool with a rag fixed on a stick, and first dipped in a pot of oil; in this manner numbers of pools can be dealt with in five minutes at the expense of very little oil.

Perhaps more permanent oil than kerosene would be more permanently effective. Fresh tar dropped in a puddle makes a film like that of oil, and has been favorably reported on. Quicklime has been suggested; and all these should certainly be tried. But the ideal culicicide still remains to be discovered. It should be some cheap solid substance or powder, which, even when in very small quantity, kills larvæ without injuring higher animals, and which dissolves so slowly in water that it will render a pool uninhabitable for larvæ for a long time. Whatever fugitive culicicide is used, it must be used at least once a week. Cisterns and wells of drinking water should be kept covered in as much as possible.

It is sometimes impossible to find the breeding pools of *anopheles*, even where the adults are numerous in a house. This is especially the case when there is much rank vegetation round the house. Here much good can be done by simply killing the adult insects as they sleep on the walls during the daytime. Fly flappers should be used; it is dangerous to kill mosquitoes with the hands, because the insects sometimes contain parasites which cause elephantiasis.

9. *Houses for Europeans in the Tropics.*—These should, if possible, be built on high or sloping ground, and far from *anopheles* pools. They should not be crowded together. They should be distant from native quarters. Each should be surrounded by a large, open compound, from which all rank vegetation should be cleared away. In damp, malarious places they should be built of two stories. Trees should not be allowed very near the house. The premises should be kept entirely free of stagnant surface water. Wells should be kept covered. Flowers should not be placed in pots on the veranda.

10. *Malaria on Ships.*—*Anopheles* often come on board ships from the shore in large numbers, and may then live on board for two weeks. They may bring the infection with them when they arrive; but it is more probable that they spread the infection from sick men or coolies already on board the ship. The following measures should be adopted:

1. Sick coolies should be banished.
2. Sick men should sleep in mosquito nets, even for weeks after they have recovered from the actual fever.
3. Every day men should be sent round the ship, especially into the sleeping cabins and crew's quarters, to kill all the mosquitoes they can find.

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Original Communications.

INFLAMMATION OF MECKEL'S DIVERTICULUM, WITH RESULTING GANGRENE OF THE INTESTINE, SIMULATING APPENDICITIS.*

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In spite of all the means applied to the investigation of the abdominal contents, and the large degree of certainty with which the diagnosis can be made under ordinary circumstances, there yet remain some conditions that can only be accurately determined when the cavity has been opened. As the acute diseases for which we are called upon to decide in abdominal surgery are, in a large number of cases, due to inflammation of the appendix, all those features which render such a diagnosis complicated have always been of great interest. Among these conditions few have been more rarely encountered than the trouble following the inflammatory affections of Meckel's diverticulum. This remnant of fœtal life is stated by Gray to be present in about two per cent. of all bodies dissected, and in these the extent and character of the appendage is very variable. In the majority of cases it remains as a cord passing from the small intestine to the umbilicus, though in many instances it is a large, complete diverticulum, sometimes as large as the cavity of the intestine itself, of varying length, and terminating in a more or less bulbous extremity. So rare is this condition, that in the entire range of medical literature but a few more than one hundred cases have so far been reported, and the large majority of these have been found in the dead room in the examination following death from intestinal obstruction, and again in operation for obstruction of the bowels, and also for appendicitis. The pathological conditions arising from the diverticulum have been in most cases due to portions of the intestine being entrapped within the encircling cord where the diverticulum has existed in this form; while in some instances there has been an acute inflammation of the pervious tube that has caused adhesion and resulting obstruction. Again, the inflammation seems to have extended to the intestinal tube, causing a paresis of the bowels, especially simulating the later stage of appendicitis. In a few cases the symptoms and signs have been so much like inflammation of the appendix that a diagnosis was not possible. The following case, though not of a typical character, was sufficiently misleading to make it difficult, if not impossible, to make a correct diagnosis. For a full history of the attack to the hour when I saw the patient I am indebted to his physician, Dr. W. J. Turner, of Ashburn, Georgia:

S. B., white, aged twenty, manufacturer and merchant by occupation, was seized about 4 P. M., February 21, 1899, with a severe abdominal pain, apparently of the nature of colic. The pain was located principally to the left of the umbilicus. He sought relief by taking some domestic remedy, but finding that he was not relieved, he called in his physician, Dr. W. J. Turner, who saw him in a few moments. As he had eaten heartily at dinner of some canned goods, the pain was attributed to a colic, and a dose of chloranodyne was administered. No relief having been obtained by this remedy, a hypodermic dose of morphine was given, and soon, being easy, he was sent home for the afternoon. The same evening at eight o'clock he went with some friends to an entertainment, but was taken seriously ill and had to return home. When seen at 9 P. M. by his physician he was uncomfortable, and suffering from pain and nausea. There had been no movement from a dose of salts given during the early afternoon. His temperature and pulse were normal. Another dose of morphine was given, followed by twelve grains each of calomel and soda, with instructions that in the early morning it should be followed by a full dose of Epsom salts. At 7 A. M. on the 22d, there having been no action from the purgatives, two ounces of castor oil were administered, succeeded soon by a glycerin and water enema. The enema was returned unstained. At this time the temperature and pulse were normal and there was but little abdominal tenderness and slight distention. There were from time to time nausea and vomiting, not severe. During the entire day of the 22d enemata and purgatives were administered without result, and on the 23d a diagnosis of intestinal obstruction was reached, and Dr. Storey was called in consultation. The pain that up to this time had been located to the left of the umbilicus was now complained of in the region of the right of the iliac fossa and the appendix. After going over the case thoroughly, it was now decided that the obstruction was probably due to appendicitis, though at this time his temperature and pulse still were practically normal. During the day the pulse and temperature began to increase; a hiccough developed, accompanied by more frequent vomiting, and a generally grave aspect of the case. Persistent efforts were made by the use of salts and enemata to move the bowels, with no result. On Friday, the 24th, I saw the patient at 2 A. M. and found him in a condition of the gravest sepsis, with distended abdomen, intense tenderness over the region of the cæcum, with stercoraceous vomiting. Temperature 104° F. and pulse 155. There was no delirium or disturbance of the nervous system. A diagnosis of appendicitis with general peritonitis was concurred in, and the patient and his family were informed that in all probability there must be a fatal issue. As the only possible means of averting this an operation was requested. Operation Friday, the 24th, at 8 A. M., assisted by Dr. Turner and Dr. Storey. The patient was brought to the operating table with a pulse of 160. Incision was made at the outer edge of the rectus muscle, as for appendicitis. There was marked bleeding from the incision, and when the peritonæum was reached it was disposed to strip away from the muscle, and behind it there was a very dark color that was explained later. Upon opening the peritonæum a coil of distended intestine, jet-black in color, was found crossing the wound at a right angle. The surrounding coils were bound together by lymph. It was supposed that the condition was one of acute gangrene resulting from a violent infection from the appendix, and a search was made for the source of the trouble. In separating the coils of intestine, the gangrenous portion presented the appearance of bifurcating into two unequal parts, and these were separated. The smaller, about the size of the thumb, was followed in a direction upward, inward, and backward toward the mesentery, to which its bulbous tip seemed attached by strong adhesions. When this was separated the gangrenous portion of the intestine was easily withdrawn from the cavity, and it was now seen to be the small intestine, entirely gangrenous for about seventeen inches, with a blind tube about five inches long springing from the convex border. Both the intestine and diverticulum were distended, full of a black, grumous fluid, and though the line between the gangrenous and sound tissue was sharp, there was no appearance of any acute constriction. Another coil of intestine that had been in contact with the gangrene presented a gangrenous spot about the size of the thumb nail, and the omentum that covered it was totally gangrenous. The intestine was resected and joined with a Murphy button; the omentum was tied off, and after thoroughly washing out the abdomen the gangrenous spot was brought up to the wound and well packed about with iodoform gauze, and much of the wound left open. The patient was put to bed in as good condition as when the operation was begun. The vomiting ceased after this, and there was apparently some improvement; but later in the day evidence of increasing failure developed. and he died eighteen hours after the operation. The specimen proved to be a Meckel's diverticulum, inflamed and gangrenous, though there was no evidence of any band constriction, and no obstruction in this sense.

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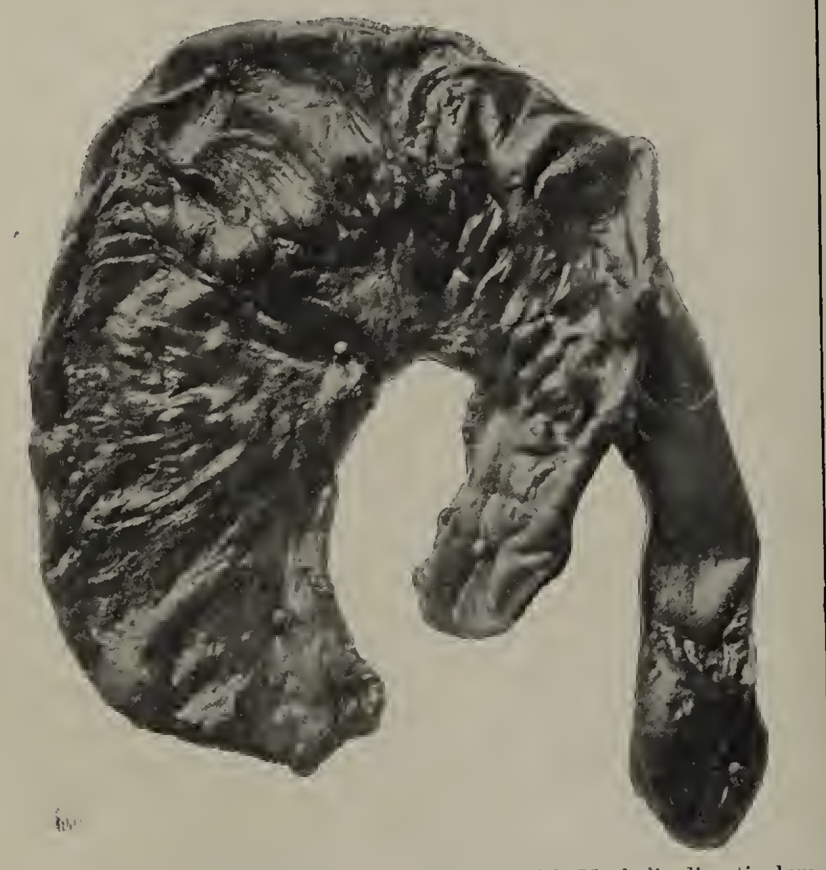
* Read before the Southern Surgical and Gynæcological Association at New Orleans, December 7, 1899.



Resected ileum, gangrenous and largely distended, with Meckel's diverticulum springing from the convex border.

Since all instances of mistaken diagnosis bring a natural sense of humiliation, I have endeavored to ascertain to what extent this same experience has occurred with others. As there is no absolute means of knowing just what person carries a Meckel's diverticulum in the abdomen, it is far more reasonable to expect one suffering from intestinal paresis and peritonitis, with tenderness about McBurney's point, to be suffering from involvement of the appendix. The rarity of the actual presence of the diverticulum has made the report of such cases infrequent, and I have been able to find only six.

Dr. Richardson, of Boston, reports two cases in which he made a diagnosis of acute appendicitis, in one of which, in an operation by Dr. Elliott, "a distended and gangrenous diverticulum" was found; in the second, a successful operation was performed by Mixter.[*]

C. R. Gildersleeve reports: [†] Case of a man, twenty-one years old, taken three days previously with pains in the bowels, continuing all day and growing worse at night. Two enemas were given before movement of the bowels was possible. Next day the patient was worse—great pain and tenderness near the umbilicus and to the right of the median line. A diagnosis of appendicitis was made and operation advised, but declined. Autopsy showed complete obstruction of ileum caused by Meckel's diverticulum, which had become so twisted upon itself that it was mechanically impossible for its contents to return to the intestine. The diverticulum terminated in a fibrous cord, which formed a complete ring through which the ileum passed.

J. H. Elliott reports: [‡] Case of a man, thirty years of age; sick for four days with vomiting, chills, and abdominal pain. Bowels had moved twice during the preceding forty-eight hours. Abdomen distended, tympanitic, and exquisitely tender, especially to the right of and below the umbilicus. Free fluid was present in the abdominal cavity. Under ether, a large mass was felt in about the middle of the abdomen just below and slightly to the right of the umbilicus. Diagnosis: Appendicitis. The abdomen was opened by vertical incision two inches inside of the iliac spine. A quantity of turbid fluid escaped. Appendix examined and found normal. On exposing the mass near the middle of the abdomen by extending the incision, it looked like a large, distended, and gangrenous knuckle of intestine, but without a mesentery. It sprang from the lower convex part of the ileum and was lightly twisted at its attachment to the bowel. It extended upward through a mass of adhesion, and when dissected free was found to be attached to the umbilicus. It was then evident that we were dealing with a Meckel's diverticulum, obstructed and gangrenous. It was about seven inches long and the same size as the ileum. The patient, already profoundly septic, died of septic peritonitis the second day.

Guirrard: [#] Patient, a man, aged thirty-six. Twenty-nine hours previous to consultation the patient had been suddenly seized with vomiting and abdominal pains, localized upon the right side and about the umbilicus. Next day his condition was worse, stomach and intestine inflated, peritoneal facies. No gas or fæcal emission from anus. Three signs of appendicitis being present—1, temperature, 39.2° C.; 2, tender point of McBurney; 3, zone of dullness in right iliac fossa—this diagnosis was made. Operation for appendicitis, but cæcum found empty. Adhesion of Meckel's diverticulum at its extremity to iliac mesocolon near rectum. Patient died. Autopsy: Diverticulum twenty-three centimetres. Volume and appearance of umbilical cord of fœtus of six months pervious in its whole extent. It was folded into the small intestine seventy centimetres from the ileo-cæcal valve.

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[*] Dennis's *System of Surgery*, vol. iv, p. 296.

[†] *Medical News*, vol. lxxii, pp. 392–413.

[‡] *Boston Medical and Surgical Journal*, 1894, vol. cxxx, p. 586.

[#] *Bull. et mém. de la Soc. de chir.*, Paris, 1898, vol. xxiv, p. 189.

W. Mintz:* Soldier, aged twenty-four. Previously healthy; suddenly seized with colicky pains after eating, with constipation. Boring-like pains about the navel, radiating toward ileo-cæcal region, more seldom to the left. Hiccough; inclination to vomit. Distention of abdomen under the lower ribs. Temperature, 36.9° C.; pulse, 56. Diaphragm at level of fourth rib, and half-moon shape from retraction of abdominal wall just over navel. No intestinal movement or localized increase of resistance noted. The whole abdomen, and especially over the ileo-cæcal region, very sensitive to slightest touch. Diagnosis made of probable diffuse purulent peritonitis from perforation of appendix. Ice and opium administered. The patient grew gradually worse, and died six days later. Autopsy: Diverticulum, eighty centimetres above ileo-cæcal valve, 16.5 centimetres long. Diverticulum converted into a solid band which joined the ileum above the incarcerated place.

CLINICAL AND PATHOLOGICAL OBSERVATIONS
ON
SOME EARLY FORMS OF EPITHELIOMA OF THE SKIN.

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(Concluded from page 894.)

Epithelioma of the Lip.—A number of primary changes may precede the development of cancer in this locality. The marked predilection of the lower lip for the affection is too well known to require more than a passing mention. In a number of cases which I have seen the first change noted was a hyperkeratosis, the thickened layer of epithelium being firmly attached to the underlying cells, and gradually extending deeper in the form of horny plugs, which could only be detached with great difficulty. In other cases the first change may be a superficial erosion or fissure, which later becomes the seat of ulceration (Fig. 10) with or without papillary outgrowth. The base of the ulcer takes on the characteristic induration, and the affection soon presents a clinical picture which can not well be confounded with the initial lesion of syphilis when we recall the early period in which the lymphatic tissues are affected in the latter disease.

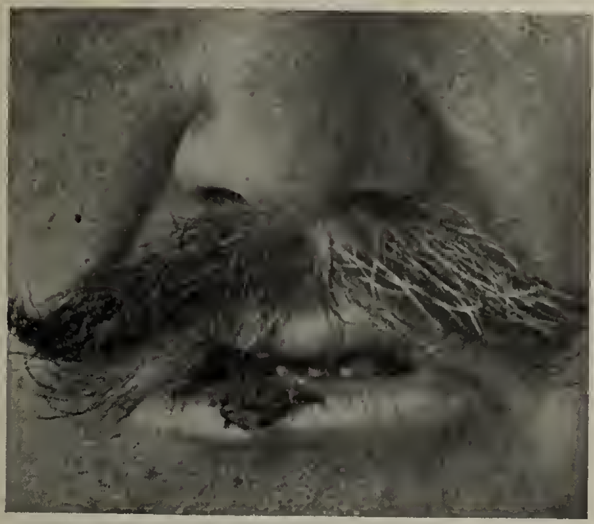

Fig. 10.—An early stage of cancer of the lip, showing superficial ulceration.

Gummata of the lip have been mistaken for cancer, but these late neoplasms of syphilis are usually multiple, rapidly ulcerate or undergo atrophy, and lack the hard base which is always present in cancer. I have known multiple foci of ulceration on the upper lip to be wrongly diagnosticated cancer, a mistake which should never occur when the rarity of malignant disease in this locality is considered.

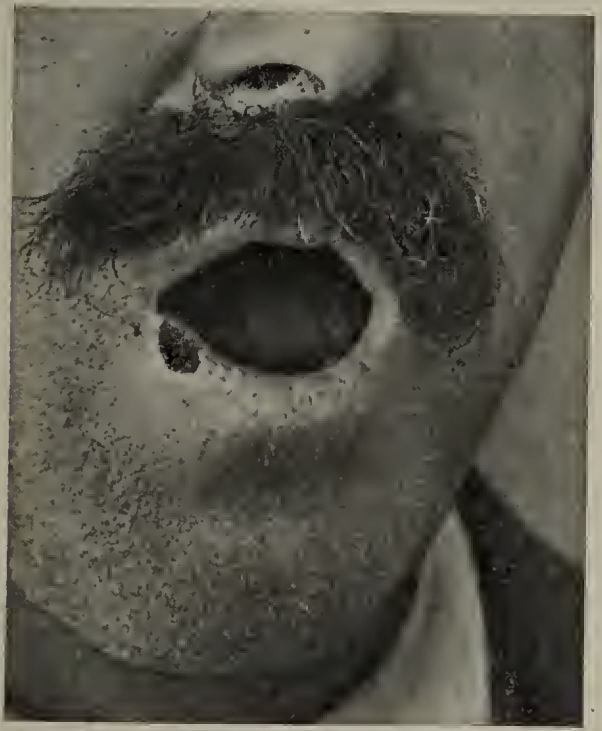

Fig. 11.—An unusual form of epithelioma of the lip.

Fig. 11 portrays a rather unusual form of cancer of the lip which, on first inspection, suggested the initial lesion of syphilis, the ulceration being superficial and surrounded by an elevated margin sloping to the centre of the sore in much the same manner as seen in chancre of the genitals. The long duration of the affection in this case, and the apparent non-implication of the submaxillary lymph nodes, easily excluded syphilis, aside from the history of the sore and the age of the patient.

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* *Deutsche Zeitschrift für Chirurgie*, vol. xlviii, p. 301.

Chancres of the lip are usually protuberant, with an eroded or incrusted surface, and lack the clean-cut ulceration seen in this case. The diagnosis here was confirmed by the microscope.

The patient, whose photograph is shown (Fig. 11), was an inveterate pipe smoker, holding the pipe in the corner of the mouth where the cancer started.

Histologically, cancers of the lower lip are, almost without exception, the squamous-celled variety, in many of which the epithelium preserves its adult type and passes through the physiological changes which result in the production of cornified cells.

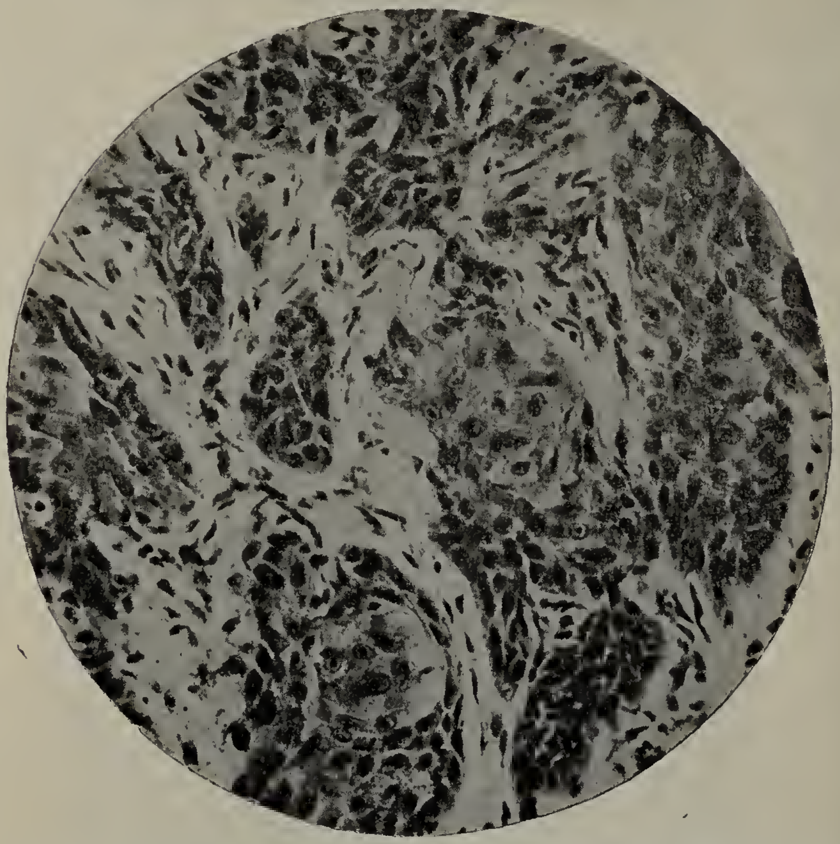


FIG. 12.—Spencer ¼-inch objective, projection ocular 4. From cancer of the lip, showing foci of invading squamous epithelium. Certain groups of cells show imperfect cornification.

The photomicrograph of a section of cancer of the lip shown in Fig. 12 illustrates the pathological change commonly found in rapidly growing tumors. The invading cells here and there have undergone horny transformation, while the peripheral cells are smaller and more deeply stained, indicating their rapid multiplication.

In Fig. 13 two "pearl bodies" are seen in which the change into horny tissue has been complete, and where the peripheral cells have ceased to be active. In older portions of the growth the differentiation of the cells may be less pronounced, as they revert more and more to their embryonic form. In certain cases, even from the beginning of the abnormal growth, the cells show a tendency to assume an embryonic type, and the production of the "pearl bodies" is imperfect, or they may be absent (Fig. 14). In the downgrowing processes of epithelium the centrally situated cells are beginning to undergo the horny change, but most of the cells represent younger types of epithelium, and in the deeper portions of the growth, from which this section was taken, all the cells were found to be of the latter character.

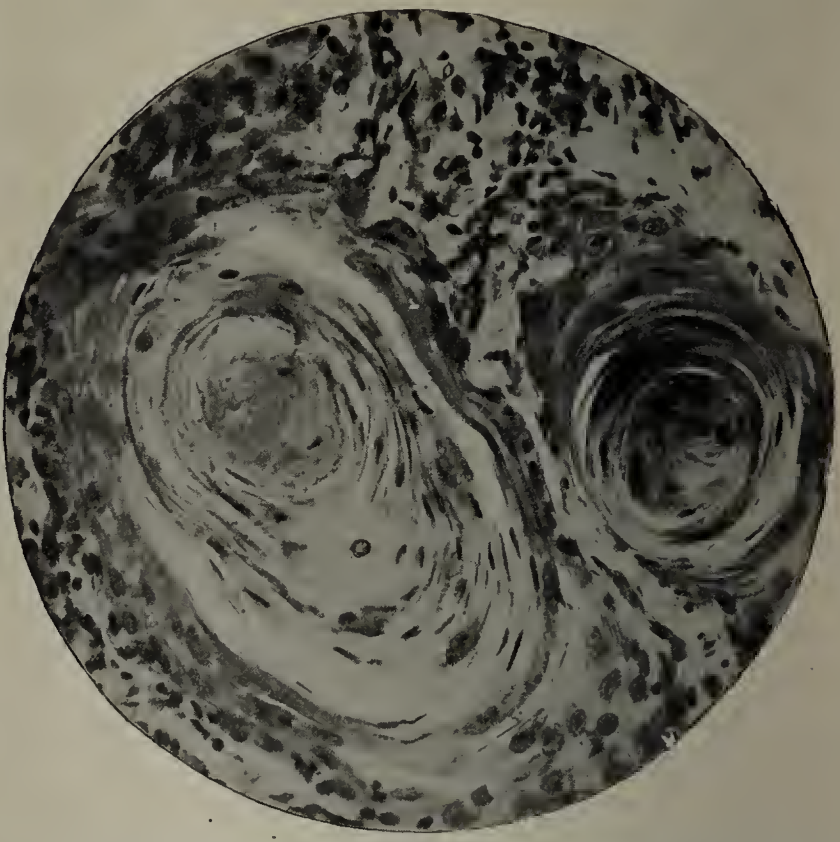


FIG. 13.—Spencer ¼-inch objective, projection ocular 4. From cancer of the lip, showing two "pearl bodies" in which the cells have been transformed into horny tissue.

Secondary infection with pus organisms undoubtedly hastens the ulceration which is so frequently encountered in superficial cancers, notably those of the lip and tongue, where the opportunities of infection from the mouth are so favorable. The rapid course and early

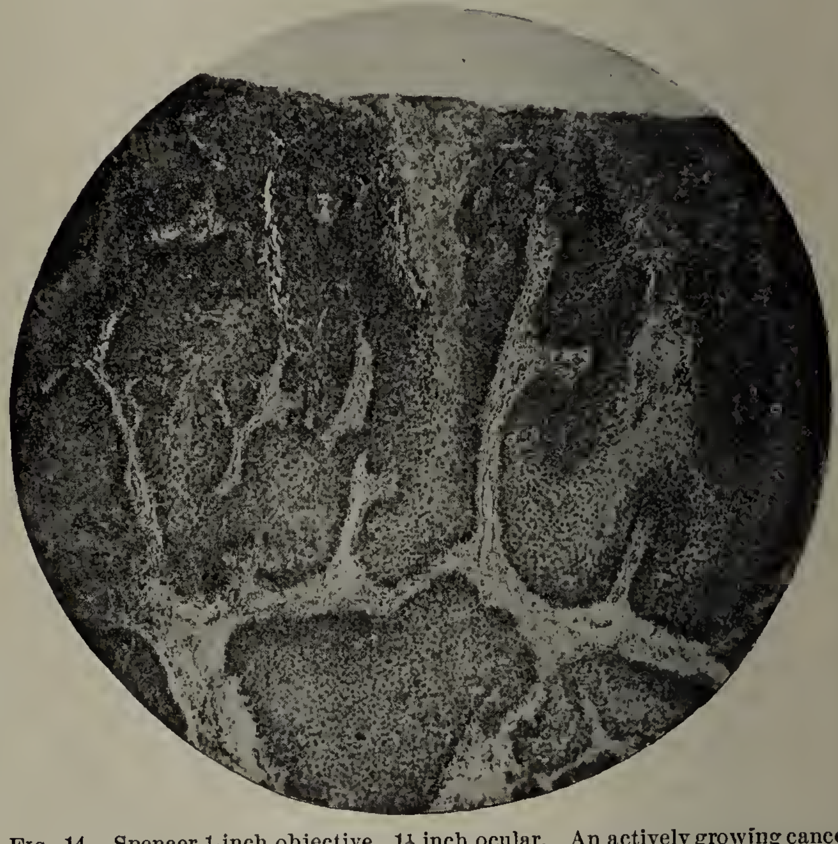


FIG. 14.—Spencer 1-inch objective, 1¼ inch ocular. An actively growing cancer of the lip showing ingrowth of surface epithelium. The peripheral cells are of the embryonic type; those in the centre of the cell mass have undergone the usual horny change.

implication of the lymphatics are features which distinguish the disease as it affects the lip and mucous membranes from the rodent ulcer of the face. The two affections are so different in their clinical history that many dermatologists are disposed to regard them as distinct affections.

The initial forms and certain peculiarities of rodent ulcer have been referred to.

In its similarity to lupus in certain of its gross clinical features, and from the fact that lupus not infrequently terminated in rodent ulcer, it was formerly given the name of lupus exedens.

In the beginning a most insignificant affection, it progresses slowly, and may ultimately involve the entire surface of the face, destroying not only the skin, but the deeper structures as well. Although so locally destructive, and showing so marked a tendency to recur after removal, the non-implication of the lymphatic nodes and the absence of constitutional disturbance are characteristics which give it a distinct clinical type.

Histologically, it is a small-celled epithelioma originating from the deep layer of the epidermis or the hair follicles. Cornification of the epithelial cells seldom or never takes place; the cells grow in tubular processes surrounded by a thickened connective-tissue stroma (Fig. 15), which is infiltrated with inflammatory cells, the result of the tissue reaction to the epithelial growth and secondary pyogenic infection.

In order to illustrate the difference in the structure of this variety of epithelioma and the squamous-cell type I have introduced the photograph (Fig. 16) of a downgrowth of epithelium taken from an epithelioma of the cheek. I have not been able to follow the clinical history of this case, but, as a rule, such squamous-celled cancers rapidly infect the lymphatics and pursue much the same course as when the lip is involved.

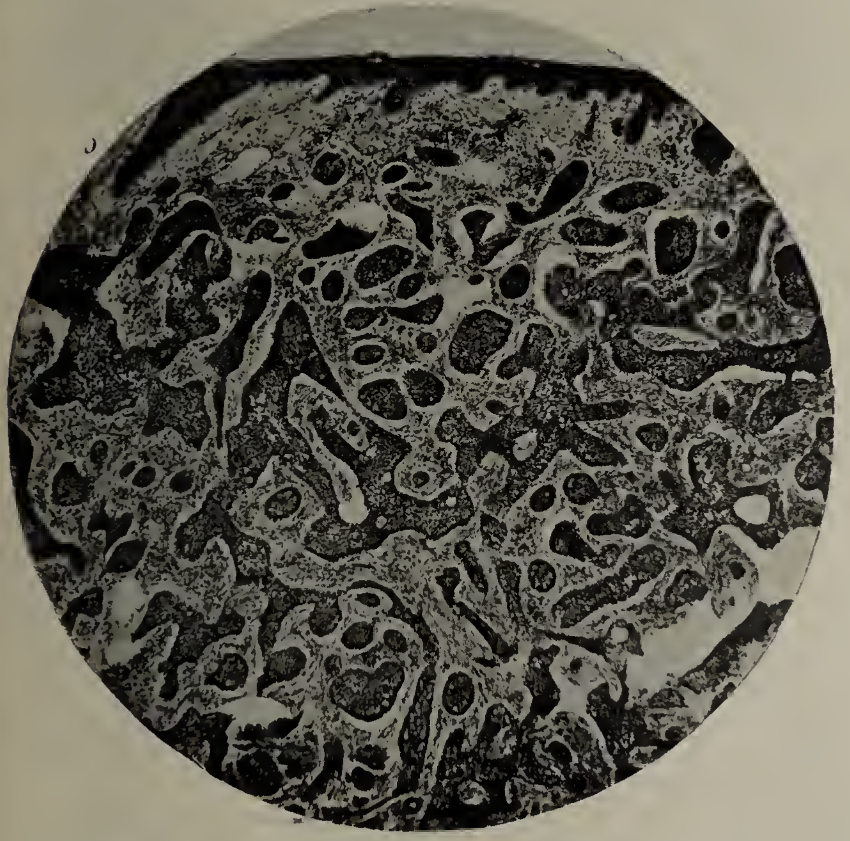


Fig. 15.—Spencer 1-inch objective, 1½-inch ocular. From a rodent ulcer of the face, showing the invasion of the connective-tissue space by tubular processes of small-celled epithelium.

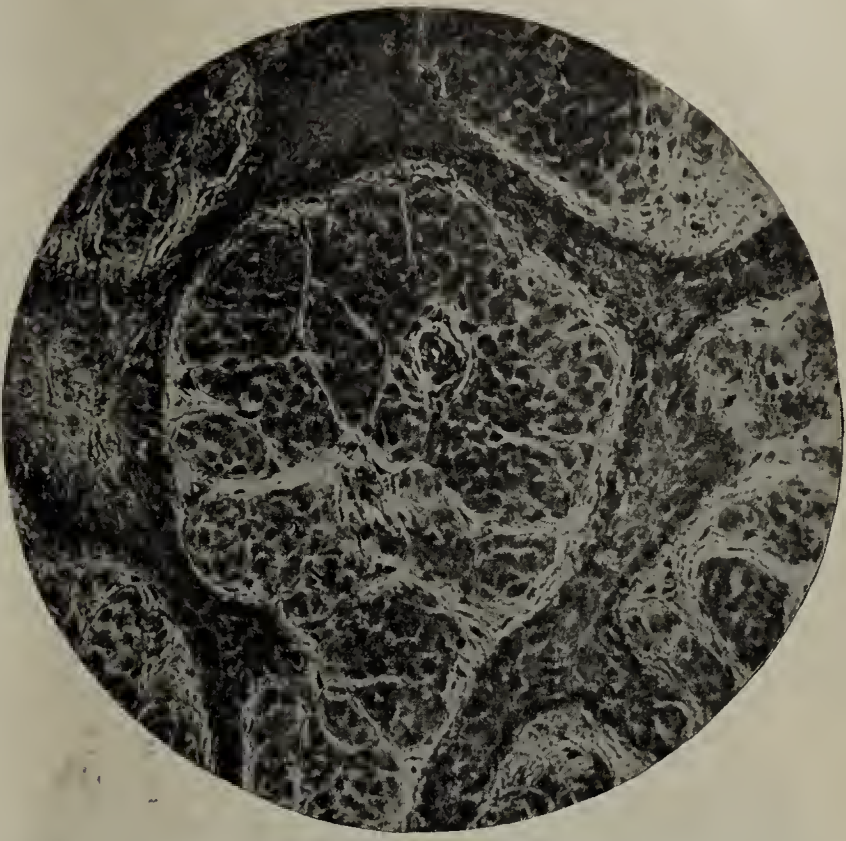


Fig. 16.—Spencer ⅙-inch objective, projection ocular 2. From a pigmented and warty mole, showing the alveolar arrangement of the cells and the downgrowth of the surface epithelium.

A number of theories have been advanced to explain the absence of lymphatic infection, among which are the location on the upper two thirds of the face, where there is less irritation and less lymphatic and vascular supply, and the observation that other ulcerative processes in the same locality seldom involve these structures. It is probable that there is some peculiarity about the growth itself which causes it to spare the nodes, as other varieties of cancer in the same locality may extend to these structures, and rodent ulcer, when extension to the lip or mucous membrane takes place from the neighboring skin, does not produce gland disease.

In exceptional instances squamous-celled cancer has been said to follow early rodent ulcer and infect the communicating lymphatic structure. There is, however, a marked clinical distinction to be drawn between cancer of the lip, which produces early involvement of the nodes before much local ulceration has taken place, and rodent ulcer, which spreads for years as a skin affection only.

As the mode of evolution of the carcinomata and the conditions which underlie their development are more carefully considered, the less convincing become the arguments of the advocates of a specific cause for these new growths of epithelium. If we assume that malignant tumors of epithelial origin are caused by specific organisms we must in like manner invoke a similar ætiological factor in the large group of mesodermic tumors—the sarcomata. Such an hypothesis would imply that the infectious agent possesses remarkable selective power in giving rise to the types of tumor which correspond to the connective-tissue, endothelial, and lymphoid structures. It must be borne in mind that each cell has within itself the possibility of division and subdivision, and when detached from its parent tissue may pursue a parasitic existence, excite the connective tissue to proliferate, and attract an outpouring of leucocytes.

The structure of moles often presents a typical picture of an alveolar carcinoma (Fig. 17), and, while it must be admitted that the majority of these congenital malformations remain innocent, they are well known to occasionally give rise to growths of an exceedingly malignant course. The investigations of Unna * and Gilchrist † have shown that these nævi are of epidermic origin, and that malignant tumors arising from these are carcinomata, and not sarcomata, as has been so long held.

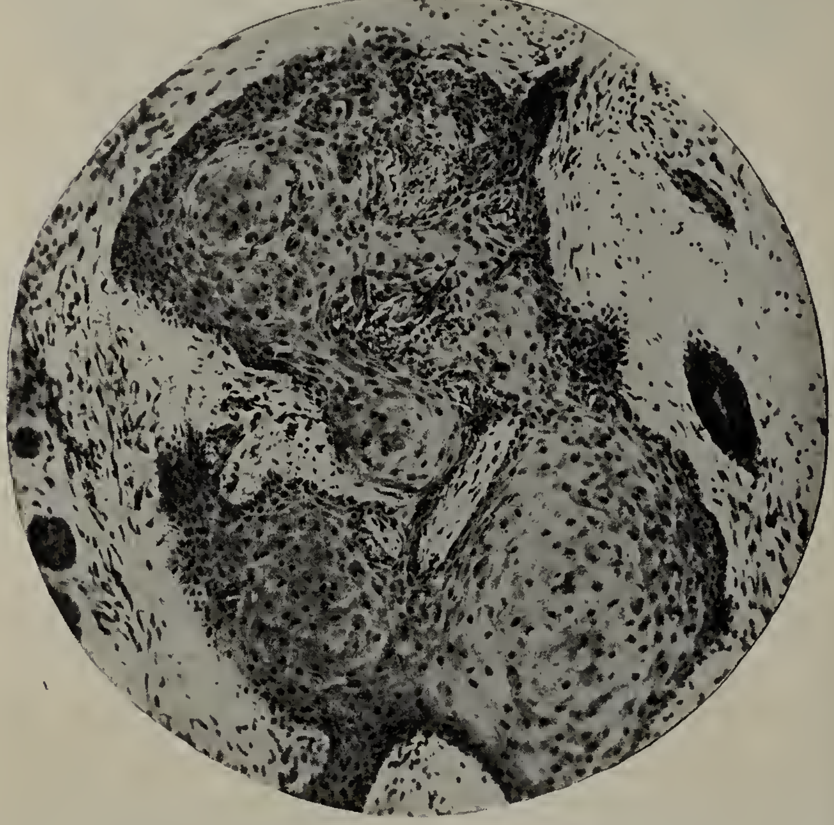


Fig. 17.—Spencer ½-inch objective, compensation ocular 4. From an epithelioma of the cheek, showing an invading process of squamous-celled epithelium.

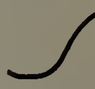
The theory of Cohnheim is strongly supported by these observations in this particular class of tumors. Few pathologists, however, admit nowadays that Cohnheim's theory is sufficiently comprehensive to cover the entire pathogenesis of malignant disease.

Various diseased conditions of epithelium, its prolonged irritation resulting in disturbance of the physiological changes in cornification, underlying alterations in the connective tissue stimulating its growth and diminishing the resistance to its downward development, are important factors which should not be lost sight of in the modern tendency to attribute these malignant growths to an external parasite which has gained access to the cells. We have to do with an infectious process, it is true, but one in which the agent producing the infection is probably the actively growing cells of the parent tumor. It is perhaps not carrying the hypothesis too far in assuming that the symptoms of intoxication met with in the late stages of generalized cancer, when not due to secondary pyogenic infection, may arise from the toxic products produced by the cell metabolism of the new growth.

66 Park Avenue.

RAMPANCY,
THE FERVOR OF THE FOREHEAD.
A STUDY OF THE ANTERIOR METOPIC LOBULE.

By WALLACE WOOD, M.D.

The Greek ῥαμφή is a bill, a double-curved pruning knife, its shape like that of a stamen, lituus, or cyma. From this come rampe, ramp, ramping, rampage. The words rampant, rampage, rampageous, though somewhat blunt-spoken, have no coarse significance. The word ramp analyzed means creep-leap. We express it graphically by a concavo-convex line, thus:  of which the pars concava represents the creep and the pars convexa the leap. This figure is the line of motion and life; every fibre and artery in the living body is a ramper. The ramp for life is a more philosophical figure than the struggle for life.

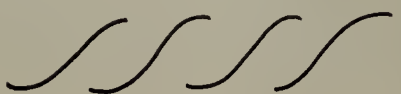
Occipital and Sincipital Ramps.—Life moves with an impetus forward and upward; the humblest worm aspires, ramps, stands upon his base, and lifts nose and feelers skyward. Every vine creeps and climbs, every newly hatched chick creeps with its body, but climbs or aspires with its head—that is, it ramps. Each vine, frond, leaf, each worm, serpent, bird, every creature 'neath the sun marks this concavo-convex line; it is the line of life.

Every live thing is ramping heavenward: the vine ramps upon the tree, the worm upon the vine, and the rejoicing dog upon man, and man himself is subject to the law.

If life itself is a rampancy, a creep-leap, then the life of life, the *clavis vitæ*, ought to show the form in its perfection, as we find indeed it does. Life is summed up in the flower and its essence in the stamens and pistils. These chives and tendrils in the centre of the rose or the *Nymphæa alba* are the throes of the immortal heart of Nature.

Analyze the Line, Simple and Compound.—This scroll line in architecture is called the *cyma recta*, or, reversed, the *cyma reversa*.

We may represent the one thus:



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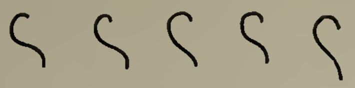
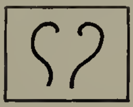
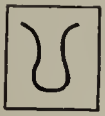
[*] *Histopathology of Diseases of the Skin*, p. 745.

[†] *Journal of Cutaneous and Genito-urinary Diseases*, vol. xvii, p. 117.

—a line of scrolls looking forward—and the other a line of scrolls looking backward:



These two forms will be found as bracts, tendrils, leaves, fronds, and so on, upon the caulis or stem of a plant; while, arriving at the summit, we find a culminating whorl in which are seen combinations which can be represented by two signs—the one caduciform, for the stamens, thus:  the other lyraform, for the carpels, thus: 

These compound curves, anthers of the anthos or anthemion, are found in the under occiput of all the gyrencephala, usually in the positive form. The occiput is a sculptural flower.

Life is Rampancy.—In such animals as the dove, cock, and swan the whole body may be fairly represented by the ramping line, the line of beauty, but the bird's neck alone is a perfect example. In the lion, horse, or unicorn rampant the body line is compound or doubled, but in the horse, deer, lamb, terrier dog, and other mammals, the neck and head in particular aspire, arch, curve, ramp, perform their shining and their crested roll, and especially when well nourished and warmed and softened by the rays of the vernal sun. All native sap and blood is rampant in the happy moons of May and June, and rolls and surges itself into these crests of everlasting beauty, living as it never lived before, loving as it never loved before; and the symbol of both life and love, both leaf and flower, is this simple, curious, double-curve figure, the stamen, scroll, lituus, the ramp, the heaven-seeking curve. At its height it is the anthos, the anthemion, the heart of the flower.

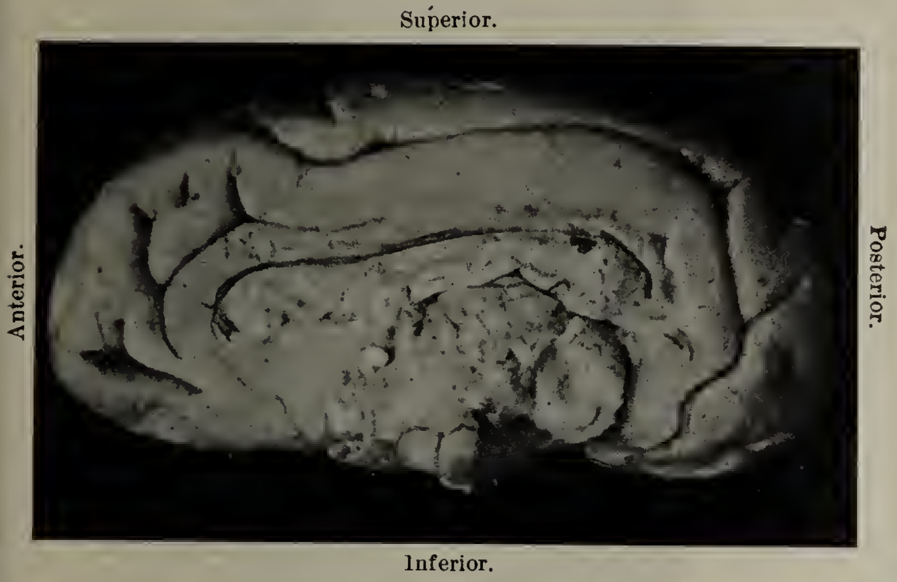


Fig. 1.—**Occipital and Frontal Rampancy.**—Brain of a lamb, right hemisphere, inside surface. Looking in the direction infero-posterior, one sees the lobus suboccipitalis or occipital ramp, and in the direction antero-superior, the metopon or lobus capitatus and the ramp of the forehead. Both these scrolls rise out of the limbus.

The Brain Flowers at Both Holes.—If we cast our eyes upon the olfactory lobule of an antelope or small deer, and from this point trace round the limbus (cingulum, rhinencephalon), we shall find that it ramps or throws up a crest in two places; one of these is the under occiput and the other the over sinciput, the forehead, metopon, or regio coronalis. These musky deer, these lovely African antelopes, lophotragers, show then in their brains two *lophoi*, two crests; their brains are crested in the forehead and crested in the backhead.

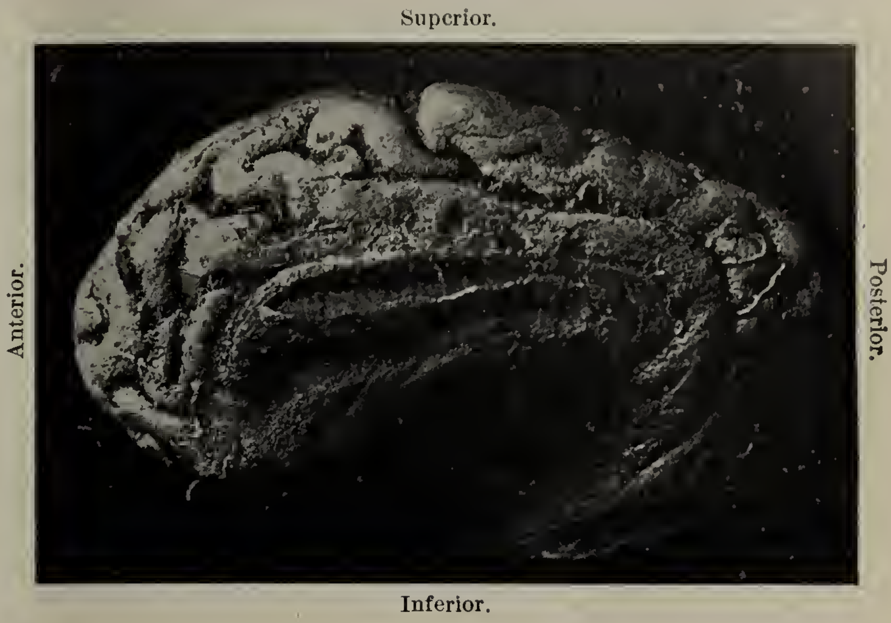


Fig. 2.—**Frontal Rampancy.**—Brain of a New Jersey cow, highly domesticated, right hemisphere, mesial surface, showing the ramping formations. Sometimes these are squared, resembling the meander or the cross potent.

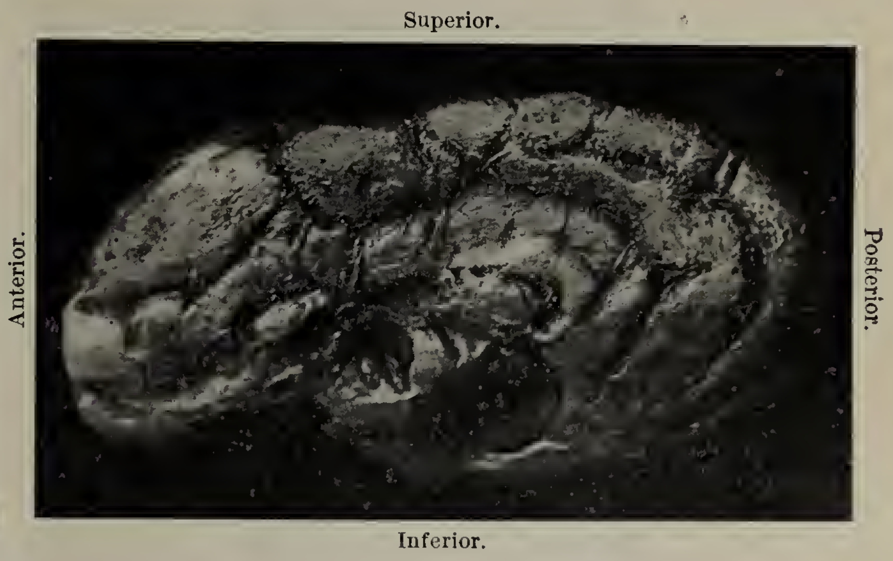


Fig. 3.—**Lobus Frontalis.**—Black-and-tan dog, a New York pet, right hemisphere, mesial surface. In the direction antero-superior is seen a large lobule, the metopon, the lobule of fidelity or good will—*eunoia, prothymia.* The limbus ramps toward it. Underneath this "proreau" lobule is another, the "subprorean," perhaps the centre for the boule. The specimen is of striking beauty. It resembles the dog.

Other animals—cat, lion, bear, gazelle, rabbit—present for simple inspection also these curious, vivid forms, scrolls, stamens, ramps, firmly graven on the cerebral occiput, finely sculptured upon the posterior surface of the hemispheres, formed, cut, and carved by no mortal hand, but by ages of repoussé work executed by the afferent projection nerves. Other animal brains exhibit also the frontal ramp. I have found it in the horse, Newfoundland dog, black-and-tan dog, the cow, sheep, and axis deer. In these foreheads the brain ramps heavenward or sunward; the brain surges forward and upward, and, overarching, the Psyche seems to lift up her head. If one may be allowed a figure, there is an uplifted head effect, as when an animal uplifts his head or carries the head finely, arching with the pride of life.

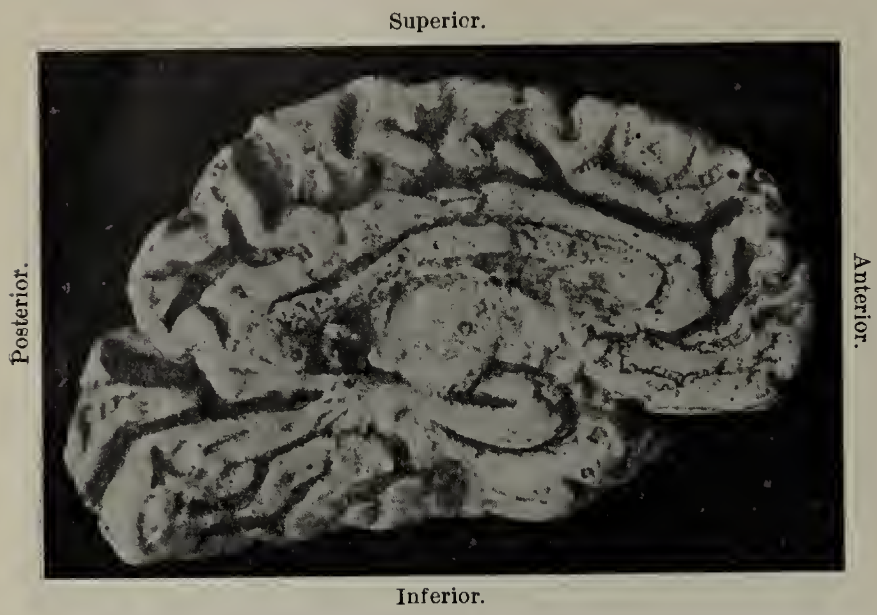


FIG. 4.—OCCIPITAL AND FRONTAL FORMATIONS.—Human cerebrum, left, mesial. Inferior strongly sculptured. One sees four parts: the stem, the verge or crest, the fusc or serpentine, and the papilla. In the direction antero-superior lies the anterior metopic lobule. It is shaped like the profile of a thumb. The anterior and posterior metopic lobules in all brains unite together in a definite organic shape—the lituus or scroll or shepherd's crook. This is best seen in the sheep, but often well defined in the brain of man.

Coming to the question of function, we ask: Why these ramps in the brain? Why do mammals have scrolls in the forehead and scrolls in the backhead? Or ramps on the under occiput and ramps on the over sinciput?

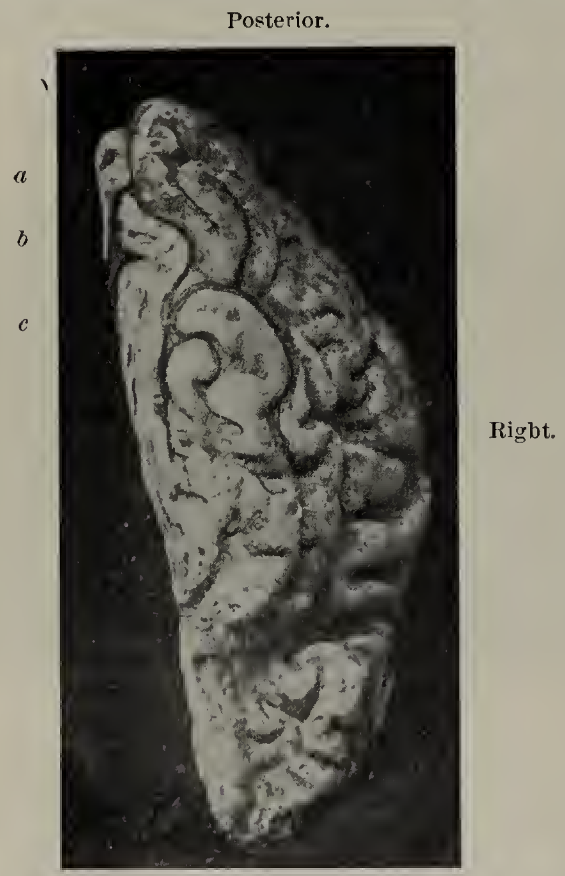


FIG. 5.—OCCIPITAL RAMPS.—Human right cerebrum ♂, under surface. At *a*, point of the first foil or ramp, the stem (lingualis). To the right of this is the second ramp, verge or crest; at *b*, anterior to the lingualis, is the second ramp (fusiformis); at *c*, the fourth ramp, the papilla, possible image or eidolon of the left breast, mamillary centre.

It is probable, then, that the deer and the antelope have ramps upon the head for the same reason that the flowers of the field have ramps upon their heads. These we see in two forms: lyrate, or as carpels in the central whorl, and caduceate, or as stamens in the surrounding whorl; and the plant puts forth these "in the hope to avoid death." These are, so to speak, the scrolls of salvation.

One would hardly venture to assert, of course, of "buttercups and daisies," that each annual flower knows instinctively and is conscious that autumn will come, and that she must go through the *Passionspiel* and the agony in the garden—must weep herself into the tomb, so that when the new spring comes she will rise reborn in her seed. Neither does the axis deer or the dorcas antelope know this—but man knows it, and this knowledge is the source of all his sorrow and the key to all his joy.

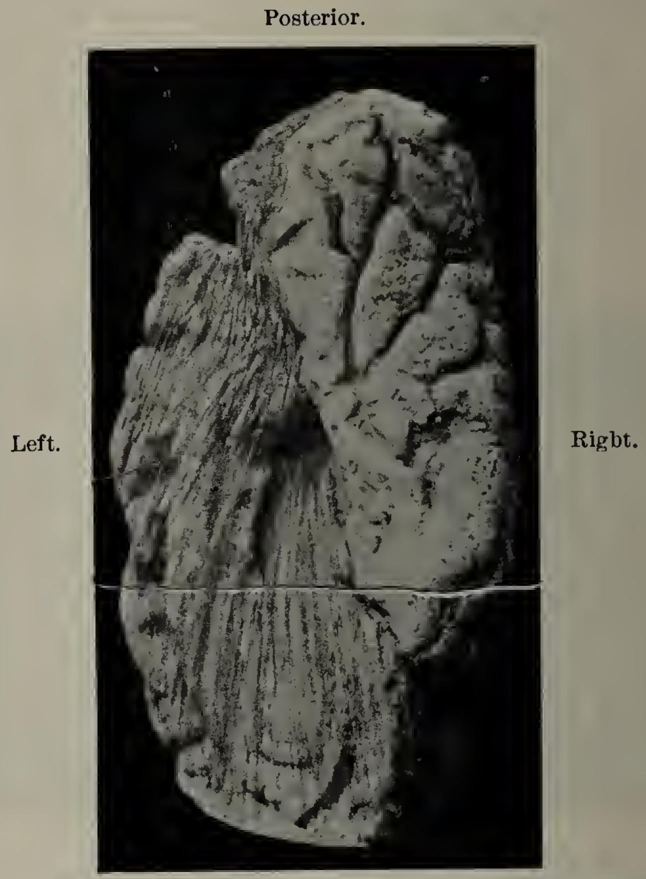


FIG. 6.—LOBUS SUBOCCIPITALIS.—Human brain, right hemisphere, exhibiting in the lobe four ramps or processes. To the left, the stem or lingua (lobulus lingualis, subcalcarine gyrus); next, the processus or fuse (lobulus fusiformis, subcollateral gyrus); next, the verge, crest, or hood (culminating right posterior); next, the fourth ramp; to the right, papilla, possible mamillary centre, animula mammæ.

It is probable, then, also that sheep, cows, and men have these anthers of the forehead, have this flower supernal as a reflection or idealization of the anthers of the backhead, the flower cerebro-physiologic.

Life is rampancy. Take the body: the whole body is a series of ramping tissues, while the highest, the supreme or pro-ramp, the acme, is that of the neck and head; the ramp heavenward or skyward—for example, the neck of swan, fowl, or stallion. The ramp of the head is a secondary characteristic.

Now for the brain. It is certain that with the metope or coronal lobule the animal lifts the head and opens the eyes; this lobule, then, is the very head of the brain, the head of the head, the *head* head.

Studying this crest lobule last year from the point of view of the margin or marginal gyrus, it has seemed to me to be the seat of *eunoia*, or "willingness to come forward," in the service of man (*i. e.*, to be milked, bled, or fleeced—cow, sheep), and *prothymia*, or *eagerness* to come forward in man's service, as in horse and dog. Studying it to-day in connection with the limbus, the same lobule seems to ramp, to rise like the butting of a ram or goat, or like the prancing of the horse; like the head of the unicorn; like the curve of a stamen; like the lituus of the augur, which he stretches toward heaven; like the crozier of the priest carried before the procession; like the ecclesiastical costume of the famous "horned ladies" of the Orient. This is also the lobus laureatus, for it is upon this forehead crest that lord Apollo fixes his immortal crown of bay. This, then, is, or ought to be, the lobus immortalis.

Life is rampancy, perennial life is double rampancy, immortal life is supernal rampancy.

The top of the forehead appears to be the acropolis of the man, the acme lobule of the organism, ever ramping heavenward or sunward; it seems to be the leader in the procession, moving on, upward, and on.

That this godlike peak, that the top of the forehead is connected with the bottom of the backhead, dissection of the brain of the lower ruminants seems to prove. In the sheep, both are scrolls rising out of the limbus.

Professor Soury remarks that Flechsig appears to suspect a relation between the sexual instinct and the anterior third of the gyrus fornicatus. In studies of general paralysis lesions have been found in this region. This is a confirmation of the present view.

Anterior or transcendent attachment, however, is no longer sexuality, but antisexuality or *agape*. Dog and master are not sexed as a pair, neither are knight and steed, or cow and milkmaid, nor are man and his Saviour. One may consult, nevertheless, St. Bernard and St. Francis and the author of *Keys of the Creeds*.

Compare body and brain. Take body first. This good force and good feeling, this fire and tenderness, this noble heart elation, yearning for attachment, generous giving, kindled in the vernal centres of life, surges through the organism and ramps in the neck, head, breast, shoulders, and rapture-quivering wings of all the happy creatures. The wave passes from pole to pole. The same holds good in the brain. There the fire and tenderness, the heart-yearning and self-giving desire are kindled in the maternal and paternal focus in the backhead, while the divine force and good feeling, the heart, the tenderness, the love, the kindliness, the unutterable longing for the infinite unknown, or the ideal, rise to a crest in the spiritual focus of the metopon. The ardor of the backhead finds its complement in the fervor of the forehead.

Here is the centre for the higher sympathy, for enthusiasm, for devotion. As *eunoia* or the *vis passiva*, this divine force is willingness to give your heart away; as *prothymia* or the *vis activa*, it is uncontrollable impulse forcibly to give or *throw* your heart away. As the *vis passiva* it melts a thousand hearts together in a Methodist love feast; as the *vis activa* it carries a Quintus Curtius into the gulf, leads a Winkelried to gather the bayonets to his breast; it drives a Howard into the prisons and a Lafayette to America; it impels thousands of good women to feed the hungry, clothe the naked, nurse the sick, minister to the dying—it is a divine artery through which is poured the milk of women and the blood of men; it is the navel string that connects the faithful hound to his master, and Christ to man, and man to humanity.

With most of us, our hearts are nested in the home; our hearts are with our babes, our wives, our sisters, our daughters, our mother; but our hearts are also "with the blessed gods"—with our ancestors, with the heroes and the sages, with the great and good, both those who are living and those we have seen pass away.

Every right-working heart leaps both ways. The domestic is a posterior attachment, the supernal an anterior attachment. To the living we cling with the very bowels, cling with under occipital gyrus, the infero-posterior brain tendrils. To the dead as well as the living we cling with the supernal gyrus, the antero-superior brain tendrils, the "angel heart of man." The "angel heart of man" is in the right place, for it works like a shuttle from its one centre to the other, weaving its immortal web of happy thought, eternal sympathy, lifelong enthusiasm, and eager devotion.

When the master pats his dog on the head this lobule is touched—the creature ramps. The cavalry soldier and his horse are tied by this lobule as by an invisible navel cord. The generous steed is rampant to serve, to die if need be.

By patient study of the brain, accepting what we find, we must acknowledge that the heart of the non-immortals—that is, those who have not the *logos;* for instance, "man's best friend," the cow; that master philanthropist, the dog, and that leader of man through the ages, the lamb—have also the heart in the right place.

Eternal love, the enthusiasm of humanity, *prothymia*, what is it? It is courageously, ardently, eagerly *giving;* giving your milk, giving your flesh, giving your blood to others; giving your work, putting your life, heart, and soul into your work for humanity, and doing it forcibly and irrepressibly.

The bee lives and dies for the hive; the sheep, cow, ox, horse, dog, all live, work, die for humanity. All these taught by man, and the St. Bernard dog taught by the Christian monks, have this *lobus animosus convertus*, this lump of courageous loving, this most Christian lobule, well developed.

To be born again is to be born at this end, and through this anterior ramp, carpel, and portal.

The subject of this brief essay is the localization of the greatest thing in the world, the greatest thing—indeed, in final analysis, the only thing, for it is the alpha and omega, the oldest and youngest of the gods, Eros, Agape, Philia, Spes, Caritas, Humanitas. It is the alpha and omega, the all in all.

Si linguis hominum et angelorum loquar, caritatem autem non habeam, factus sum velut æs sonans aut cymbalum tinniens.

"Though I speak with the tongues of men and of angels, and have not love, I am become as sounding brass or a tinkling cymbal."

I subjoin a list of properties or virtues belonging to the anterior metopic lobule:

Greek.—Agape, sympatheia, philanthropeia, philia, sebas, eusebia, eunoia, prothymia, enthusiasmos, Aphrodite Ourania, agapesis, philophrosyne, energesia, eupoia, eumeneia, chrestotes.

Latin.—Caritas, bonitas, socialitas, pietas, fidelitas, benignitas, amicitia, benevolentia, humanitas, beneficium, largitia, liberalitas, generositas, clementia, lenetas, Venus Urania, spes.

English.—Attachment, loyalty, love, charity, kindness, humanity, sympathy, enthusiasm, devotion, friendship, friendliness, goodwill, sentiment, sociability, good feeling, goodness, sweetness, faithfulness, fidelity, service, love of God, love of man, patriotism, public spirit, liberality, generosity, mildness, gentleness, self-sacrifice, self-giving, pity, mercy, peace.

PERIMETRIC DIAGNOSIS.

By J. W. SHERER, M. D.,
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(Concluded from page 944.)

Secondary, *consecutive*, or *neuritic atrophy* follows severance of the fibres from, or destruction of, their trophic centres. This may result from neuritis, papillitis; the toxines of certain diseases, as diphtheria, malaria, syphilis; the action of certain poisons, as lead, iodoform, carbon bisulphide; and from local pressure, as from osteitis, exostoses, bulging of the lateral ventricles, or aneurysm. Neuritis may result from cerebro-spinal meningitis, basilar meningitis, gummatous meningitis extending to the optic nerves, or syphilitic perineuritis.

In *secondary* or *neuritic atrophy* uniform shrinking of the general fields will often be found, or, with a normal periphery, absolute central scotoma appears. Sectoral or quadrant-shaped defects appearing first in green or red may occur and are ominous, or at one place the periphery is found pushed inward to the color limits; or central vision is intact or disproportionately affected when compared with the field. A single quadrant, without central vision, but retaining some color sense, may remain; or a half field, with or without central vision, and with or without color, may remain.

There is evident tendency to retention of color vision and the formation of absolute defects. If a wedge-shaped bundle of fibres is destroyed, a corresponding absolute sectoral scotoma appears. It should be observed whether central and peripheral vision diminish proportionately, or whether either diminishes more or less than the other. This will give an idea as to the fibres most involved, and which part of the field will first become extinct.

If a peripheral absolute scotoma extends inward to near the centre and color vision in the retained field reaches nearly to the scotoma, there being a *zone of imperfect vision* between the scotoma and the field in which color vision with form and white are normal and are found to remain so after repeated examinations, the apodictical statement can be made that the atrophy is limited to a circumscribed bundle of fibres.

The zone of partial vision surrounding these scotomata is due to injury of fibres in the neighborhood of the lesion. While connection with their ganglion cells may not be lost, their conductivity may be impaired by pressure by the neoplastic tissue, or by interference with their nutrition by the inflammatory changes in their meshwork of supporting areolar trabeculæ.

The ophthalmoscope may reveal a partial atrophy of the optic disc, or early, with a lesion far back in the nerve with descending atrophy, the disc may be normal. With a descending atrophy and apparently simple atrophic fading of the disc the field may shrink more on one side, while central vision and color sense remain normal, or nearly so.

The disturbance of the field will in neuritic atrophy be commensurate with the extent, severity, and persistence or repetition of the process, and the damage done to the nerve fasciculi or their nutrition.

As mentioned when speaking of primary atrophy, these cases are to be differentiated from it. Their perimetry is markedly different, and will enable treatment to be instituted and the vision saved. There is a special tendency to the formation of absolute central scotoma in hereditary retrobulbar neuritis, axial neuritis, and multiple sclerosis. In the latter the progressive failing of central vision, as the process continues, affects the visual elements in a manner similar to the action of primary atrophy on peripheral vision. The weakest function lapses first. A scotoma for green is first formed. In its centre a scotoma for blue, yellow, and white successively appears, until a small absolute central scotoma obliterates the fixation point. Then around the absolute scotoma is found a color-blind zone, and around this concentric rings of yellow, blue, and green. Red and green usually go together. In axial neuritis, however, the process is different. Here vision fails first in the core-space (Bunge, Sachs, Wilbrandt). This is an area about six degrees square, extending from two to eight degrees outward from the fixation point. In this space the finer qualities of the visual sense fail and small absolute scotomata form most easily. As the inflammation begins, a small scotoma appears at the fixation point and enlargement of Mariotte's spot occurs. These two spots slowly extend toward each other along a line curved downward like a loose loop of cord hanging between two pegs on a wall. If the process remains limited to the papillo-macular fasciculus, as is frequently the case, the periphery will remain free. If atrophy supervenes the scotoma will be permanent. This is usually the case. However, in this, as in other neuritides, the process may subside at any stage and the field remain permanently as it then was. Or improvement may occur *pari passu* with retrogression of the disease process. Retrogression may cease at any stage and the field remain permanently as it is then found. This condition may be mistaken for temporal hemianopia; but since it extends beyond "fixation," while temporal hemianopia never does, no confusion need arise.

Multiple neuritis, as well as the spinal of tabes, mentioned above, may cause bilateral symmetrical disease of the nerves so as to produce bilateral hemianopia. This may be temporal, nasal, or homonymous, according to the location of the lesions. Here the dividing line is irregular, not regular, as in hemianopia of deeper origin. This is largely theoretical, but is demonstrated by one case reported by Russel.

In perimetry of the field atrophy may be known to be increasing when the field shrinks for white or colors, or both, or when red and green are appreciated only in larger and larger objects. It is decreasing when the reverse occurs. Similarly in neuritis of the papillomacular fasciculus with central scotoma the disease may be known to be increasing or decreasing according as the relative and absolute scotomata and the scotomata for the different colors and for white and form increase or decrease. The tests should always be made with both large and very small objects.

In the *chronic neuritis* or *toxic amblyopia* from nicotine, alcohol, lead, iodoform, carbon bisulphide, opium, and stramonium (asthma cigarettes) a typical central color scotoma, always bilateral, for red occurs. It occupies the core-space and corresponds in shape and formation to the central absolute scotoma above described in axial neuritis.

With a small red object scotomata are first found at "fixation" and "Mariotte's." These extend toward each other along a line curved downward. They merge into one and widen upward and downward until the field for red is cut in two, an island of red remaining in the right and left hemispheres. Red may vanish entirely, and is usually accompanied by green. Central vision gradually fails though peripheral is maintained. In reduced light the vision is better.

The color scotoma may become an absolute one. Ring scotomata may form. The process may subside at any stage, and recovery generally, but not always complete, ensue.

Two conditions, Daltonism and congenital hemeralopia, may complicate the diagnosis. By paying attention to failing central vision the first is excluded, and by taking the field in full and reduced daylight the latter. If there is not hemeralopia then the limits of the field will be found the same in both illuminations.

On the other hand, it should be remembered that hemeralopia is no protection against neuritis. On account of lying to the outer side of "fixation" a temporal hemianopia may be suspected, as in axial neuritis. Here, again, the fact that the scotoma extends beyond "fixation" serves to differentiate.

The *neoplasms* which occur here, such as sarcoma, fibroma, glioma, neuroma, endothelioma, gumma, tubercle, myxoma, and tumors of any of the adjacent tissues, as chondroma, and more particularly osteoma at the orbital apex, are generally unilateral and affect the field according to the nerve fasciculi involved. The field defects change *pari passu* with the progress of the disease. They may be peripheral scotomata making sectoral or quadrant-shaped losses or central scotomata.

If the tumor is external to the nerve there may be monocular nasal or temporal hemianopia, or inferior or superior altitudinal hemianopia, the dividing line being horizontal. Or the whole field may gradually fail if pressure is so applied as to constrict the whole nerve—as, *e. g.*, would almost inevitably result from any pressure at the optic foramen. The diagnosis is made from other signs and symptoms, but the prognosis is assisted with the perimeter.

When hemianopia occurs, whether from sharply localized disease of the nerve or from disease farther back, Wernicke's hemianopic pupillary inaction may be secured, though difficult. This test, made *secundum artem,* will show the lesion to be anterior to the nucleus of the oculo-motorius in the primary ganglia.

III. The Field in Diseases of the Chiasm.—Diseases of the chiasm are characterized by bitemporal hemianopia. Typically the outer half of each field becomes extinct. The dividing line is vertical, passes through the fixation point, is clean cut, and the boundaries for form, white, and colors agree. The lesion consists in a destruction of the fasciculi cruciati or of their conductivity, temporarily or permanently, and is *always organic,* never functional.

The *ætiology of chiasmal disease* is very diverse and includes syphilis, which is responsible for twenty per cent. of all cases. Of syphilitic manifestations, gummatous basilar meningitis, endarteritis, or gumma are the most frequent and act by pressure upon or by obstructing the blood supply to the chiasm, or by directly involving the fasciculi.

About forty per cent. are due to neoplasms, as osteoma, etc., of the chiasm or neighboring structures, as sella turcica, crista galla, hypophysis cerebri, and floor of the third ventricle. Tubercle may occur in the chiasm. Other causes are aneurysm, periosteitis, and internal hydrocephalus distending the third ventricle and pressing on the chiasm. The *diagnosis of chiasmal disease* is often difficult on account of the various ways in which the field is affected in different stages. The defect is by no means always typical temporal hemianopia. It is, however, always absolute, never relative. If relative, cortical disease is indicated. The defect is usually bitemporal, it being very rare for binasal or unilateral field splotches to occur in lesions of the chiasm. Ordinarily, as the crossed fascicles become involved the outer halves of the fields shrink.

If pressure applied superiorly, as by distention or tumor of the third ventricle, cuts off the upper crossing fibres, owing to the way in which they are distributed, paracentral scotomata are produced. If an overshot field exists, even if the process is complete, central vision is very good in either eye, and with binocular vision orientation is but little impaired, the binocular field simply being narrowed laterally. The study of over a hundred cases reveals a great variety of defects, from scotomata or loss of a single quadrant to bilateral amaurosis.

Thus, if the upper half of the right fasciculus non-cruciatus is affected the lower nasal quadrant of the right field is lost. If the lower half of the right fasciculus cruciatus is destroyed the upper half of the left temporal half field is lost. If the disease destroys the right uncrossed bundle by pressure in the lateral angle of the chiasm, or by interrupting the extremely methodic lateral blood supply to it, the right nasal half field is lost—a unilateral hemianopia. The disease spreading and invalidating the right crossed bundle, the left temporal half field is lost, producing homonymous hemianopia. The disease progressing regularly, the left crossed bundle is next lost, the condition resulting being right amaurosis with left temporal hemianopia.

When the fields are anomalous, demonstrating Wernicke's hemianopic pupillary inaction may assist the diagnosis. Symmetric involvement of the temporal half fields would indicate disease in the mesial angle of the chiasm, presumably tumor. Irregular involvement, including more to one or the other side, would favor a diagnosis of specific disease.

The prognosis depends more on the ætiology than on the perimetric findings. It is good, if the cause is specific, for administering iodide in one-drachm to two-drachm doses, three times a day, generally restores vision to normal, or nearly normal, even in some cases where total blindness has just occurred. In a general way, if the affected areas vary, if the color limits shrink in the intact half field, or if these contract absolutely, the disease is to be thought active.

In gumma, gummatous basilar meningitis, or arteritis, great changes in the fields and central vision occur with astonishing rapidity. Barring specific disease, the prognosis is dubious. With severance of the axones, and of connection between the trophic ganglion cells in the primary optic centres and the peripheral elements in the ganglion-cell layer of the retina, atrophy ensues, visible in the papilla and covering the fundus according to the bundles cut off.

If the fasciculus cruciatus from the right tract is destroyed, about three fifths of the left papilla, including considerable of the papillo-macular fascicle and the corresponding fundic area, gradually exhibit the dead, cold pallor of atrophy. Contrariwise, an ophthalmoscopic appearance of atrophy from tabes or papillitis, from retinitis albuminurica, or similar conditions, should not be allowed to mislead, since they may be intercurrent.

IV. The Field in Diseases of the Tract.—The field characteristic of disease of the tract is a homonymously hemianopic one. The field loss is absolute, but not always complete. *Ætiologically* it may be said that homonymous hemianopia is never due to primary atrophy in the tract nor to purely nervous disorder.

Irrespective of pathologic processes more centrally located it may be caused by capillary hæmorrhage, trauma, tumor—generally, but not always, of the basal ganglion—foci, of white, yellow, or red softening, originating at the base and affecting the tract. The last cause results from tumor, infarction, diabetes, progressive pernicious anæmia, and a variety of toxic agents in the blood, as the toxines of rabies, tetanus, etc., basal gummatous meningitis, and basilar meningitis.

A priori, the bundle of fibres being narrow and condensed, it would naturally be expected that a lesion here must of necessity obliterate both fasciculus cruciatus and non-cruciatus, but this is by no means always the case. These two fasciculi form closed bundles in their course through the tract. The fasciculus macularis lies centrally, the fasciculus non-cruciatus lies dorso-laterally, and the fasciculus cruciatus ventro-medially.

The form, extent, and character of the hemianopic field, which may be monocular, or of the homonymous hemianopic field, however indicative, are not alone positively diagnostic. The presence of Wernicke's hemianopic pupillary inaction is a great assistance. This phenomenon may appropriately be explained more in detail at this point. The nerve centre for the third nerve, including the sphincter pupillæ, ciliary muscle, and convergence, occupies a small area in the floor of the iter a tertio ad quartun ventriculum beneath the quadrigemina. This nucleus is complex. It is thought that the centre for the pupil is located more anteriorly, the centre for the ciliary behind this, and that for convergence still more posteriorly.

Thus one of these centres or its connecting fibres may be obliterated without necessarily destroying the others, as in the Argyll-Robertson pupil. When the centripetally conducting part of the arc is broken, as must result from interruption of the tract, the animus required to discharge the reflex impulse fails to reach the centre, and pupillary contraction does not follow the impinging of light upon the part of the retina concerned. Neither convergence nor accommodation need be impaired, and the pupil will react with them.

There may be complete bilateral amaurosis and still, if the lesion is cortical or located anywhere central to the primary ganglia, the pupils will react to light. In lesions located peripherally to the primary centres, however, when light falls on the affected part of the retina no contraction of the pupil occurs.

It will be readily seen that the occurrence of homonymous hemianopia with Wernicke's hemianopic pupillary inaction must be strong evidence that the lesion is in the tract, since, were it central to the basal ganglia, there would be no such pupillary inaction. Were it in the ganglia, concomitant nerve symptoms of paralyses of motion or sensation would accompany it. Were it peripheral to the tract, as in chiasm or nerve, the field symptoms would be radically different.

The dividing line between lost and retained half field may be vertical or slanting, and pass through the fixation point, or, if an overshot field exists, curve around it with a long or short curve in favor of the seeing half. In this case the dead field seems scooped out or like a crescent almost full. Or the boundary may be straight almost to the fixation point, both above and below, and an area of some degrees around the same be retained.

With reference to this *overshot field* two points especially may be taken to heart. 1. In the region of the macula each half is connected with both hemispheres. 2. The color limits coincide with the boundaries for form and white. This serves to show the presence of the overshot field and to disprove incomplete hemianopia. Central vision is nearly always somewhat impaired, but not necessarily so.

On account of the wide separation of the tracts bilateral homonymous hemianopia causing complete amaurosis originating in them must be very rare and more likely to result from an extended disease of the base, as basilar meningitis, than from other causes. On the contrary, the usual method of spreading is for a shrinking of one retained half field to occur, and this indicates extension to the chiasm where the other crossed band would be first approached. The eye affected is on the side opposite to the blind half field and on the side of the lesion. When the disease is in the tract, and so serious as to progress from an incomplete homonymous octant or quadrant defect to complete hemianopia, or from a monocular half loss to homonymous, and perhaps to double homonymous, hemianopia, there may be confidently expected other basal symptoms, as irregular pupil, ptosis, strabismus, nystagmus, facial or lingual paralysis or paresis, monoplegia, hemiplegia, or twitching of certain muscles.

The field symptoms which accompany this growth of the disease vary, as has so often been repeated, with the fibres involved. If it is the papillo-macular bundle, there will be a central scotoma. If it is the fascicle for a retained half, that half will show retreat of the color fields, and then contraction of the form field. Spread of the disease to the tract from the chiasm can not be distinguished from a spread to the nerve.

The ephemeral perception of bright light in complete absolute homonymous hemianopia, which is sometimes seen in recent cases, is due to an anomalous conduction, probably of an irritative nature—*i. e.*, a sense of irritation is transmitted across the breach and is appreciated as light. It has no localizing significance.

V. THE FIELD IN DISEASES OF THE PRIMARY OPTIC CENTRES.—The primary centres comprise the external geniculate, the quadrigemina, the colliculus anterior, and the pulvinar of the thalamus. Of these, the external geniculate is the more intimately associated with vision. Lesions of the other parts named are certainly followed by visual disturbances. In the geniculate the optic fibres radiate in a fanlike manner, comparable to the corona radiata, and end in ganglion cells from which, in turn, fibres arise to pass on to the cortex.

It is probable that connections between these cells provide some diffusion of sensation here, and, according to von Gudden's hypothesis, the macular bundle enjoys a disseminated distribution widely in the geniculate which, of course, necessitates a similar broad rootage in the cortex. Hence, if a large part of the cortical visual area were destroyed, light would still be recognized at the macula on account of its connection with that part of the cortex which remains.

The reflex arc of pupillary reaction may be broken here, producing hemianopic pupillary inaction with homonymous hemianopia. The symptoms which have been referred to as accompanying homonymous hemianopia due to disease of these centres are *hemiplegia* or *hemiparesis, hemianæsthesia,* and some special symptoms, according to the region involved.

If the *Sylvian aqueduct* is diseased paralysis of the inferior oblique and recti, except the external, and ventricular dropsy with choked disc ensue. Disease of the *corpora quadrigemina* causes, in addition to ocular palsies, nystagmus and immobility of the pupil. When it is the *thalamus*, there is a peculiar tendency to athetoid movements unilaterally, post-hemiplegic chorea, involuntary movements on the paralyzed side, loss of mimetic movements, and vasomotor and trophic disturbances. Atrophy descending from these centres extends into but not beyond the chiasm.

VI. THE FIELD IN DISEASES OF THE CEREBRUM.—Whether the visual fibres pass through the posterior limb of the internal capsule or just beneath it is a mooted point. "The fibres proceed backward through the posterior segment of the internal capsule to the cortex under the name of the visual radiation or fibres of Gratiolet or Wernicke" (Noyes). "The optic fibres do not pass through the internal capsule, but close underneath it" (Henschen).

At this point, however, they cross the fibres of general sensation and form a close bundle of half a centimetre diameter. They pass upward and backward, winding round the outside of the descending cornua of the lateral ventricle, open out like a fan, and arrive at their destination in the calcarine fissure at the lower part of the median surface of the occipital lobe. Both centrifugally and centripetally conducting fibres are laid between the cortex and the geniculatum externum. Some are not visual. Others go to the temporal and parietal cortices.

Fibres not visual also pass between the other primary centres and occipital cortex. Many which are interlobar and commissural doubtless serve to keep the brain in consonance with the visual function.

The organization of the cortical visual area is not clearly known. From theoretic considerations it has been suggested that the fibres from the macula, which retains its function with greater tenacity, are dispersed in distribution over the whole area, and, again, that they end at the apex of the calcarine fissure. There is an exact correspondence in relation between the cortical visual area and the retina, the upper surface of the fissure supplying the dorsal surface of the retina and the lower part the ventral. This relation extends to minute details.

The crossed and uncrossed fibres from homonymous parts of the retinæ become associated as they approach their cortical termination and end side by side, so that a lesion of the cortex affects both retinæ homonymously. Still, cases have been reported in which cortical injury was followed by monocular hemianopia, so that individual differences in organization must be acknowledged.

When a part of the cortical visual area is destroyed a corresponding field defect occurs and is permanent. An apparent exception exists only in the macular area when there is an overshot field produced by the macula receiving fibres from each hemisphere.

The centres for light, form, and color occupy different strata of the cortex—that for light being external, for form intermediate, and color internal. Relative scotomata are produced here only. These consist of loss of color sense with preservation of light and form. Numerous cases attest that relative scotomata indicate cortical lesion. Color hemianopia with normal field for white and full acuity has followed apoplexy. Again, an absolute defect sometimes resolves until only color loss remains.

The characteristics of the field in *cortical lesions* are (1) relative defects, (2) homonymous losses, (3) decidedly irregular, scattered, large or small defects, (4) a tendency to sectoral losses, and (5) absence of photopia. The pupil reacts to light. The optic axones degenerate to the corpora geniculata only.

There are no distinctive differences in the field by which to recognize *lesions of the optic radiation*, but the absence of the Wernicke pupillary inaction proves it to be central. Sensations of light flashes and absolute scotomata prove it to be subcortical. When the cortex is destroyed subjective sensations of light are impossible. There is a tendency to sectoral defects and partial losses of the field, since here the fibres are comparatively widely separated. When the hemianopia is complete the dividing line may pass through "fixation" or manifest an overshot field.

Owing to the proximity of the parietal lobe and fibres, these are prone to be involved when monoplegias, localized spasms, or Jacksonian epilepsy complicate the homonymous hemianopia, which is on the same side with these. Disease of the optic radiation and cortex *per se* will produce homonymous hemianopia only, but with the spread of the disease the parietal lobe is soon implicated and psychic phenomena appear. Alexia, or word blindness and apraxia, or mind blindness, are more distinctly related to and more frequently associated with the condition under consideration than are agraphia, amnesic aphasia, dyslexia, etc.

Further, in a monoplegic, or one afflicted with unilateral or localized convulsions in whom a homonymous hemianopia develops, a lesion of the parietal cortex which has extended to the optic axones should be considered *in posse*. When the homonymous hemianopia is accompanied by hemiplegia, hemianæsthesia, etc., the lesion is well anterior in Gratiolet's radiation, since here the parietal fibres are in contiguity.

Homonymous sectoral defects may also originate subcortically, but will then be less well defined in boundaries and light sense will not be so completely destroyed as when they originate in the cortex, in the region of the cuneus, the favorite site. Other symptoms may be absent except alexia or apraxia. In double homonymous hemianopia there is total blindness. In cases of sudden complete blindness the reaction or inaction of the pupil to light will serve to locate the trouble to a degree and the occurrence or absence of visual hallucinations and photopia will indicate the cortical condition.

The lesion may be dissimilarly located in the hemispheres and the pupil react or not as the light is thrown on the right or left homonymous halves of the retina, giving the hemianopic pupillary reaction of hemianopia homonyma duplex.

The only *functional nervous disturbance* manifested as homonymous hemianopia is partial fugacious amaurosis or scotoma scintillans. This is probably generally due to vasomotor disturbance in the cortex, and, of course, is manifested homonymously. In functional nervous disorders accompanied by nervous asthenopia the field is concentrically contracted or evinces undue fatigue. While the perimetric examination is being made the retina becomes exhausted and the periphery shrinks to within forty, thirty, or even twenty degrees of "fixation," so that the part of the field taken last is shrunken.

If, then, the eye is allowed to "adapt" by resting thirty minutes in the dark, so that assimilation of the visual purple is complete, and the field is taken in reverse order, the contraction will be found on the other side. In cases of very defective assimilation and adaptation the test object may disappear and reappear several times in traversing the meridian. That this is a fatigue symptom and not due to scotoma is easily discovered by repeating the examination. Photopia is frequent and annoying.

The literature of this subject in journals and textbooks has been freely used in this article:

410 Altman Building.

THE ADVANTAGES OF THE PNEUMATIC CABINET OR DIFFERENTIATOR IN THE TREATMENT OF PHTHISIS PULMONALIS.*

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In 1885 there was presented to the medical profession, in an article entitled Antiseptic Treatment of Pulmonary Disease by Means of Pneumatic Differentiation, by Dr. Herbert F. Williams, of Brooklyn, New York, a new instrument for the treatment of pulmonary phthisis.

Some time thereafter the instrument was demonstrated before the American Climatological Association. It excited considerable interest and some discussion, but a few years sufficed to obliterate it from the minds of all except a few, and in 1890, five years later, it had been entirely forgotten.

The late Professor Alfred L. Loomis retained one, and, after using it assiduously for ten years, regarded the pneumatic cabinet as, next to climate, the most valuable means for the control of phthisis, and, for certain indications, even more valuable than climate.

That the cabinet has not met with the unanimous approval of the profession, and that, after a short space of five years, scarcely half a dozen cabinets are to be found among ten thousand physicians, is undoubtedly due to the fact that a novelty in therapeutics, be it a drug or a device, is liable to fall into disuse either from merited distrust, or from misuse in consequence of misplaced confidence and unwarranted enthusiasm; or disuse may be due to the nature of phthasis and the impatience of human nature. The cabinet is not a surgeon's knife, and phthisis can not be cured in twenty-four hours.

As we know, patients always demand visible results from mechanical treatment. With little understanding of the possibilities of his disease, the sufferer is sure to grow restless unless speedily relieved, and the never-failing friendly advice leads him to seek relief elsewhere.

The patient, however, is not alone in being thus affected. The most fervid enthusiasm can not distill the monotony from daily rounds of pumping, and the physician whose practice is based on the attainment of immediate results instead of the application of scientific knowledge will most certainly "get left," to use the vernacular, when results are delayed.

My personal experience in the use of the pneumatic cabinet in the treatment of phthisis is limited to a period of fifteen months, and I have stood at the "throttle" of the instrument during this period for a space of not less than three hours each day.

The method in which the treatment is applied is somewhat as follows: The patient is placed in the cabinet, the door being closed and locked. The air is then partially exhausted from the interior of the cabinet, which thus decreases the atmospheric pressure over the surface of the body. Upon inspiration the increased pressure of the outside atmosphere materially tends to expand the lungs from within, and the inspiratory act is greatly facilitated, whereas the expiratory effort is proportionately increased, and a calisthenic action of the lungs and chest walls is thereby obtained to a greater degree than by the ordinary respiratory movements.

The cabinet is made of iron and resembles a large iron safe in general shape, in one end of which is a large, thick glass window. It is about seven feet high, three feet wide, and four feet long—in short, large enough for a man or woman to stand up or sit down in comfortably. Opposite the window is a heavy iron door edged with rubber and furnished with heavy bolts, all moved easily by one handle, so that the door can be instantly opened. Beneath the window is a projection to accommodate the patient's knees, this serving on the outside as a shelf upon which the vaporizer used with the apparatus is placed. Passing through the glass window is fixed a short gutta-percha tube about an inch and a half in diameter, having a stopcock on the outside, and ending in a trumpet-shaped opening for receiving the vapor, the inner end being fitted with a movable rubber tube and mouthpiece, to be changed for each patient. Near the cabinet stands a cylindrical iron vessel, from which the air is as nearly as possible exhausted, communicating with the interior of the cabinet by means of a pipe and stopcock. Other cabinets do not have this, but instead are fitted with appropriate bellows. A barometer connected with the inside of the cabinet, to show the amount of rarefaction of air in the interior, is fastened to the outside of the cabinet. The patient enters the apparatus, seats himself opposite the window; the door is closed and the stopcock of the pipe connected with the vacuum is opened.

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The air from the cabinet rushes to the vacuum, and when the barometer shows a depression of two tenths of an inch the stopcock is again closed. A solution, usually of creosote, ozone, carbolic acid, iodine, iodoform, or bichloride of mercury, either singly or in combination with each other, is used. The patient being directed to insert the end of the tube in his mouth, closing the lips over the mouthpiece, at the same time compressing the nostrils with his fingers to prevent the air rushing out through his nose, the stopcock is turned and the outside air rushes in, carrying with it the vapor, and causing a more forcible involuntary inspiration, giving one the sensation of having taken an unusually full, deep inspiration; the patient then, by a voluntary forced expiration, exhales through the tube again, and continues these respiratory movements several times. Upon the least feeling of fatigue the stopcock is turned, and the patient, after removing the tube from his mouth, breathes the rarefied air of the cabinet again until ready for a second trial.

The time occupied in this treatment varies from five to thirty minutes, and usually daily applications are made. The amount of rarefaction used in the beginning is never more than two tenths of an inch depression of the mercury; but during the treatment a gradual rise of rarefaction may be used, up to an amount causing an inch to an inch and a half, or even two inches, depression of the mercury, without evil results. The only peculiar sensation which may be noticed in the beginning of the treatment is a slight crackling in the ears as the air is being exhausted from the cabinet, but if the patient is told to swallow two or three times this symptom will entirely disappear.

The cabinet certainly accomplishes two things: it produces a much greater expansion of the lungs than is possible by an ordinary full inspiration, and at the same time the vapor, being carried with much greater force than by a natural inspiration, is deposited in the deeper portions of the lungs in a much more thorough manner than by any other method, except perhaps the intertracheal injections of essential oils, the multiple advantages of which I can not now discuss.

As we know, tuberculosis is the presence of a modified granulation tissue, developed by and containing tubercle. Phthisis is necrosis of tuberculous or associated tissue, developed by the action of the tubercle toxine. All tuberculous products are protoplasmic and vital. All phthisical products are degenerative, non-vital, and therefore foreign. Tuberculosis is Nature's activity in self-defense. Phthisis is the quiescence of defeat. With the removal of the cause we can cure tuberculosis.

Can we remove the cause? If so, by the stomach? No. By topical applications to the lung tissue proper, *via* the trachea, by injection? Perhaps. It is very rational, but this treatment is still in its infancy. I hope the results obtained will warrant its continuance. But we have the cabinet. It has been tried and not found wanting. You undoubtedly ask: "Then why has it been discontinued?" Not because it merited distrust, but rather from misuse. Physicians who were compelled to be out visiting patients most of the time could not devote a sufficient number of hours to office practice and the cabinet, a treatment lasting from five to thirty minutes for each patient; and so the cabinet was intrusted to a lay assistant, who would perhaps regard it as a mechanical appliance to pump medicated wind into the lungs, and would not be capable of judging the harm or good resulting.

We must prevent the necrosis, the breaking down. We must increase the pulmonary circulation. We must secure an increase in lymphatic absorption. How can these things be done? Need I answer that question?

A patient is seated in the cabinet while gradual rarefaction to almost an inch of mercury is made. The entire cutaneous and pulmonary pressure is diminished. Respiratory motions are visibly easier. The vessels are dilated all over the body, but more so in the lungs, with the result of slowing the circulation at all points, but to a greater degree in the lungs, thus causing a condition of necessary pulmonary congestion developed in precisely the same way as at high altitudes, but differing from that following inhalation of rarefied air in being modified by the dilatation of the cutaneous vessels. This is the desirable condition to bring about.

With the commencement of rarefaction the air in the lungs acquires a diminished tension. This is the only therapeutic result of this motion and need not be continued long. Then the patient places the tube in his mouth, the controlling valve is suddenly opened, he breathes, and receives upon his pulmonary surface a pneumatic blow followed by a rapid influx of air. The therapeutic action of this motion is the removal of *débris* from the lung, as this sudden opening and closing at one inch pressure is quite a stimulus to cough. This treatment should be given about twice a week to promote absorption.

The cabinet increases vital capacity, reduces the frequency of respiration, increases the consumption of oxygen, and exercises a general beneficial effect upon the nutritive processes.

The main action of the cabinet is the reduction of pulmonary congestion, and this theory I can verify with regard to blood spitting and bronchial hæmorrhage. Time and again have patients complained of the sputa being blood-streaked, or have had a copious hæmorrhage, when in the course of a few minutes the cabinet has relieved the symptom. Quimby, Platt, and others say that in addition to the effect it has upon pulmonary congestion it undoubtedly acts beneficially in other ways. The thoracic gymnastics afforded by expiration against increased resistance will probably be of benefit to the weak-chested. The increased oxygenation of the blood will doubtless improve the nutritive processes.

Patients in advanced stages of the disease frequently experience great relief of coughing and dyspnœa by this treatment, both subsiding at once.

The cabinet increases expansion of the chest by diminishing the pressure on the exterior. At the same time that more air is inhaled, the tendency is, by pressure on the respiratory surface, to exsanguinate the pulmonary capillaries and increase the amount of blood in the systemic vessels.

In the early stages of phthisis pulmonalis the cabinet is capable of doing much good, and in many cases arrests the morbid process. I don't mean to say that phthisis can be cured by the process, but it can certainly be arrested, and in some cases cure has been effected. Patients generally increase in weight, especially those cases that are in the incipient stage; cough and expectoration entirely disappear, appetite and sleep become natural, and the patients, as a rule, are able to return to their usual vocations. I do not assert that the cabinet is a positive cure; but, if the stomach remains in good condition; if the patient can ingest and properly digest and assimilate a generous diet, into which milk has entered largely, then, in connection with the cabinet, what results can we look for?

Setting aside its value as a calisthenic exercise and as a means of making direct application to parts hitherto inaccessible, its influence on general nutrition, as evidenced by almost invariable increase in appetite following its use, warrants the expectation that in debilitated conditions generally it will be found a powerful adjunct to the means commonly employed.

My clinical data obtained during my incumbency at the Loomis Hospital in New York I have misplaced or lost, but patients have said to me, over and over again: "Doctor, I think the treatment is fine. It is such a relief to be able to take a deep breath, to be freed from the pain in the throat, to be able to sleep and to eat!"

The cabinet is, without exception, the most powerful measure for the arrest of hæmoptysis. When a profuse hæmorrhage points to acute local necrosis as its cause, the cabinet must be used with great caution, and in such a way as to diminish vascular tension without tissue distention until the bleeding vessel has closed.

This is one of the possible dangers in using the cabinet, as is also perforation in the third stage, when the necrotic changes are active. But the cabinet can be used with safety in the hands of the skilled physician. So long as a patient can stop spitting blood long enough to take the tube in his mouth and breathe, there is no method which can be compared with the cabinet for the arrest of his hæmorrhage. When he is not spitting blood constantly, negative differentiation with the highest rarefaction under which the patient can resist taking full inspirations is to be used. If he is too weak to be trusted to take a full inspiration, this may be made impossible by an adhesive strap applied about the chest, and a broader one around the abdomen. The amount of surface thus deprived of the cupping action is not material. The pulmonary vessels are not deprived of their normal support, while the cupping action of the rarefaction over the entire cutaneous surface affords marked diminution of vascular tension. The relief to internal circulation is immediate. Hæmorrhages are rare after two or three treatments.

If one of the causes of phthisis is sepsis from decomposing pulmonary contents, it is a gain if we render any portion of this matter aseptic. If inhalations outside can do this, they must do more when given by the cabinet, since the volume of inspired air is from fifty to seventy-five per cent. more than in normal respiration. This air must go somewhere, and carry with it any antiseptic vapor. When one lauds the gently healing influences of loving Mother Nature that drop like dew from every point and load the spicy air that murmurs through the pines, it is not the poetry that kills the bacteria in rotten sputa, but it is plain turpentine, ozone, and creosote that can be sucked through a tube with the same results, so far as antisepsis is concerned. With the cabinet, vaporizing substances can be put into the blood through the lungs. Patients have thus been made tipsy with alcohol, dizzy and nauseated with ozone and creosote. These substances were undoubtedly absorbed from some part of the pulmonary mucous membrane.

Such authorities and advocates of the use of the cabinet in the control and treatment of phthisis as Loomis, Quimby, Williams, Fox, Bowditch, Hudson, Houghton, and others believe that about ninety per cent. of localized tuberculosis, if seen in the first stage, can be brought to and kept in a condition of practical cure by the use of the pneumatic cabinet and adjuvant measures other than climate; that cases of disseminated tuberculosis will be arrested in about sixty per cent. of cases, but will require treatment for long periods; that subacute cases may be arrested and made quiescent when seen in the second stage, in about twenty per cent. of cases; that third-stage cases, if chronic, are always relieved, and their downward course made easier; while those following acute consolidation are benefited but little, if any. Hæmorrhages are checked without exception, and all the subjective symptoms are relieved, even when the phthisis is not arrested.

Therefore the cabinet is an instrument by means of which the following results are sought:

1. The strengthening and developing of weak and poorly expanded lungs.

2. The arrest of pulmonary disease in its earlier stages:

3. The prolongation of life with comparative comfort in those cases of pulmonary disease in its later stages where a cure is impossible.

In this paper I have tried as far as possible to pass by the physics of this treatment and to avoid unnecessary repetition.

Could we not combine the cabinet with the treatment by the tracheal injections? Would it not insure the oils reaching a deeper portion of the lungs and doing twice as much good?

In conclusion, I can only add that a most certain aid, a prolonger of life, a godsend to the phthisical, has been ruthlessly cast aside. And the surprising fact is that we have as yet nothing better. We should at least have retained it while it was doing the good it did until we were absolutely certain of a treatment materially better in every respect.

THE VALUE OF THE TUBERCULIN TEST IN THE DIAGNOSIS OF PULMONARY TUBERCULOSIS.*

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Knowledge of the existence of pulmonary tuberculosis at the earliest possible moment is universally held to be absolutely essential for successful treatment. Penzoldt (1) and others have properly emphasized the fact that during childhood this disease is often present in a latent form, only manifesting itself in physical signs and symptoms after puberty. Children thus affected with the disease may be subject to bronchial, conjunctival, aural, or gastro-intestinal catarrh, conditions that indicate merely impairment of the general health. This heightened susceptibility to catarrhal affections, coupled with an obvious delicacy of constitution, has long been recognized as forming a predisposition to tuberculosis.

In the adult the tuberculous process is, as a rule, of slow and insidious onset and advancement, so that the curable stage is often silently passed before the affection is recognized. Especially is this true of the cases that exhibit the rarer and more unusual modes of invasion.

In by far the majority of all cases of tuberculosis, practitioners use medicinal agencies at home, until the certain evidences of the existence of tuberculosis, such as well-defined physical signs, and the tubercle bacilli demonstrable in the sputum, are obtainable; they are too often forgetful of the fact that the tuberculous process has now commonly progressed beyond the period of therapeutic and climatic efficiency.

The extreme desirability of deciding the nature of latent forms and dubious cases by precise methods prior to the appearance of obvious signs and symptoms or the finding of the specific organism of the disease is universally conceded, and the wholly unsatisfactory results obtained by the commoner methods of examination, from the standpoint of rational prophylaxis and treatment, are also appreciated by the more progressive element of the profession. The difficulties and obstacles in the paths of the earlier clinicians were great and varied. Fortunately, many of these have been removed, but there are still many questions awaiting solution. Among the substantially beneficent results of modern investigations is the tuberculin test as a diagnostic aid in pulmonary tuberculosis. It is one of the fairly accurate newer methods of diagnosticating pulmonary tuberculosis in its very incipiency, the other being by the Röntgen rays. The value of the tuberculin test does not depend upon its greater reliability as compared with certain other means of diagnosis, but rather upon the fact that it permits of the recognition of the disease in its latent form as well as in the incipient stages, and oftentimes, at least, before its presence can be otherwise determined. This view is supported by clear and convincing statistical evidence, and, if it were properly appreciated and the method carefully applied in all suspicious cases, pulmonary tuberculosis would not so commonly go unrecognized until it is no longer curable. It is a deplorable fact that really important advances in the diagnosis and treatment of disease have not received proper recognition because of a want of conscientious regard for the personal and ofttimes original observations of competent investigators. On the other hand, as forcibly pointed out by Solly (2) in discussing the treatment of tuberculosis, the profession, while following the vagaries of fashion, exemplifies the "instability of medical opinion."

As showing the value of the tuberculin test for the early recognition of pulmonary tuberculosis, and especially in cases in which all other means of diagnosticating the disease fail, we find M. Beck (3), who has carried out 2,508 injections, declaring that in 1,154 of the cases tuberculosis was first detected by the diagnostic injection of tuberculin. The total number of patients that reacted was 1,525, but all instances in which a certain diagnosis of tuberculosis had been made prior to the injections were excluded. This observer admits that his figures may be somewhat in excess of the true percentage and, further, that his results show the ratio for Berlin only, and that the patients were derived for the most part from the lower and working classes of society.

In this connection I may cite three cases that were recently met in my practice: the first occurred in a lad aged fourteen, who had always been in delicate health. The illness for which he consulted me had commenced four weeks previously with symptoms that were distinctly typhoidal in character, and later a positive Widal reaction was obtained. A physical examination at my first visit revealed only a phthisical thorax. After the fever had declined, an injection of tuberculin (two milligrammes) gave a positive reaction. An x-ray photograph was then taken and showed slight, though decisive haziness.

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The second case was one of suspected acute tuberculosis. The diagnosis was confirmed by the tuberculin test. The necropsy was held six weeks later by Dr. McFarland (4), who found miliary tuberculosis following Pott's disease with beginning psoas abscess. He found, it is interesting to note, "each tubercle surrounded by a zone of hyperæmic vessels which gave it a dark bluish-purple color," and observed also that its centre was softened and depressed.

My third case occurred in J. H., aged nineteen years; occupation, laborer. He was admitted to the wards of the Medico-chirurgical Hospital on January 2, 1900. There was no history of family tuberculous taint and the patient had enjoyed good health until February, 1899, when he took a severe cold, following upon which he continued to cough until the onset of the illness for which he applied. On December 30th, while stooping to lift a heavy weight, he experienced a warm saline taste, which was quickly followed by cough, accompanied by the expectoration of a small amount of bright red, frothy blood. Physical examination showed nothing save a few subcrepitant râles in the left scapular region. Both fluoroscopic examination of the thorax and repeated microscopic examination of the sputum gave a negative result. On the other hand, an injection of tuberculin (one milligramme) responded positively. The patient's sputum afterward showed the presence of tubercle bacilli.

White (5) has invited attention to reports of cases of reaction in the so-called non-tuberculous. He cites certain authors (Kobler and Westphal, Leyden, Peiper, Auerbach, Post, and Maydl) who have reported collectively thirty reactive cases among non-tuberculous subjects. Head (6) has also prepared a chart embracing sixty-four cases of various affections, supposedly non-tuberculous, that were injected. Of these, eighteen per cent. reacted. He affirmed, however, that from the evidence it seemed probable that in no one disease, aside from tuberculosis, did tuberculin cause a reaction in any marked percentage, if at all. Guttstadt (quoted by Trudeau) (7) has collected figures from German clinics which indicate that a well-defined reaction occurred in eight per cent. of apparently healthy individuals. Maragliano (8) has obtained similar results in nine per cent. of seemingly sound persons. The question arises, however, What percentage of these reactive cases in seemingly healthy persons have been instances of latent and obscure tuberculosis? Again, the failure of dubious cases to react may be due to error of administration. Thus, in my own experience, a few failures would have resulted had I not increased the dose beyond the usual maximum. It is a well-established fact that a small percentage of cases of undoubted tuberculosis (especially advanced forms) has been found to be non-reactive. In such, failure is often attributable to the establishment of tolerance resulting from multiple injections. These cases therefore do not tend to prove Koch's method non-efficacious, as some have supposed. There are doubtless varying degrees of individual susceptibility to the action of tuberculin, and it is likewise well known that cases of bone and joint tuberculosis require larger quantities than any other form of the complaint. Again, as pointed out by Trudeau, "When reaction occurs in apparently healthy individuals, it should be borne in mind that autopsies made on persons dying of other diseases show some unsuspected foci to exist in from thirty to forty per cent. of those examined. It is to be recollected that an imperfect reaction is obtainable in certain cases of sarcoma, carcinoma, and in syphilis, but in such instances the possibility of the existence of tuberculosis must be recollected." On the whole, the interfering conditions may be said to be few. and if the characteristic grouping of features only (an elevation of the temperature to 101° F. inclusive) is regarded as a positive reaction, sources of error can be reduced to a minimum. Is the test sufficiently accurate for practical purposes? is a pertinent question.

There is little if any diversity of professional opinion among those who have had considerable experience with the tuberculin test as to its diagnostic value when judiciously employed. On the other hand, its diagnostic importance is doubted principally by those who have neither used it nor examined impartially the results obtained by those who have practised Koch's method.

It is a truly regrettable fact that the use of this agent in man, even for diagnostic purposes, has been condemned by writers who, almost without exception, have failed to avail themselves of the opportunity to make a practical test. I am deeply impressed with the belief, from a limited experience only, that its more general employment with judicious care would reestablish its superior value in properly selected incipient cases. Among other writers who are entitled to be heard, and who have spoken in no uncertain tones in favor of tuberculin as a diagnostic agent in tuberculosis, are J. T. Whittaker (9), M. Beck (10), E. L. Trudeau (11), F. W. White (12), A. C. Klebs (13), G. G. Sears (14), E. O. Otis (15), von Jaksch (16), and others.

As before stated, there is a remarkable unanimity of opinion as to its value among those who have made use of tuberculin for purposes of diagnosis, and this is the more extraordinary when the great variations in the dosage employed by the different investigators are noted (*vide infra*).

The question of dosage is vitally important, and from personal experience I am led to believe that still greater uniformity in the results of Koch's method would follow if medium-sized initial doses (from two to five milligrammes) were employed; this would obviate the disadvantages arising from the necessity of repeated injections, as is generally the case when small commencing doses (*e. g.*, from half a milligramme to a milli-

TABLE NO. 1.

NAME OF REPORTER.	Total cases injected.	No. of positive reactions.	Dose employed.	Preparation of tuberculin used.
M. Beck (17)	2,508	1,525	1–10 mgrm.	Koch's tuberculin.
J. H. Neff (18)	20	7	1–6 mgrm.	Koch's original tuberculin.
C. F. Martin and G. D. Robins (19)	56	23	$\frac{1}{2}$–3 mgrm.	
G. G. Sears (20)	10	9	Not to exceed 1 mgrm.	
F. W. White (21)	123	66	1–10 mgrm.	Koch's tuberculin.
Edward Otis (22)	111	55	5–10 mgrm.	Koch's original tuberculin and Koch's tuberculin (modified).
E. L. Trudeau (23)	14	7	$\frac{1}{2}$–3 mgrm.	Koch's tuberculin (modified).
W. P. Northrup (24)	61	40	1–4 mgrm.	Koch's tuberculin (modified).
Senator (25)	50	50		
Finkler (26)	73	71		
Guttmann (27)	62	40		
Trendelenburg (28)	90	89		
Mosler (29)	21	17		
Taylor (30)	51	16	1–10 mgrm.	
Mouton (31)	12	9	$\frac{1}{2}$–3 mgrm.	
Grasset and Vedel (32)	16	10	2–5 mgrm.	
Cabot (33)	21	"In no case was the result of the test contradicted by the clinical course."		
Von Jaksch (34)	72	32	5–10 mgrm.	Koch's tuberculin.
Head (35)	47	23	10–24 mgrm.	Bureau tuberculin; ten-per-cent. solution of Koch's tuberculin.
Maragliano (36)	79	14	1–3 mgrm.; never over 10 mgrm.	Koch's tuberculin.
Dennison (37)	32	27	5–25 mgrm.	Koch's tuberculin.
Von Ruck (38)	9	7	1–10 mgrm.	Koch's tuberculin.
Port (39)	44	21	2–10 mgrm.	
Maydl (40)	13	9	1–8 mgrm.	Koch's tuberculin.
Gaffie (41)	20	"Results very satisfactory."	$\frac{1}{20}$ mgrm.	
Rosenbach (42)	11	11	1–15 mgrm.	
Anders	12	7	2–5 mgrm.	Koch's tuberculin (modified).
Total	3,638	2,185		

gramme) are used. Accurate results in most reactive cases could be expected, and an increased dose, if a repetition were occasionally demanded, would be unattended by any risks for the patient.

The accompanying tables have been carefully prepared to indicate the practical utility of the test and are the result of my own collective investigations. As may be seen from a glance at Table No. 1, which shows the total number of cases that have been injected by tuberculin, the total number of positive reactions and the dosage and particular preparations employed by the different observers, the method is fairly accurate. It is obviously necessary, however, in order to indicate the value of this agent, to take into consideration the character of the cases at the time of the injections.

With this idea in view, appended Table No. 2 was prepared; this sets forth the figures indicating how many were doubtful, and how many undoubted, instances of the disease prior to the injections, with the percentage of reactions of each, respectively. It will be observed that the investigations of certain clinicians embraced in Table No. 1 are not included here; this is owing to the fact that details as to many important points in their statements are wanting. The failures in so-called undoubted cases, as was to be expected, occurred principally in the advanced stage of the affection, for well-known reasons. It having been shown by these investigations that the tuberculin test is sufficiently accurate for practical purposes, I contend that the further use of tuberculin in undoubted cases of tuberculosis can no longer serve a valuable purpose and is open to slight objection, as will be pointed out hereafter, hence should be discontinued.*

TABLE NO. 2.

NAME OF OBSERVER.	Suspicious Cases.	Percentage of reactions.	Undoubted cases.	Percentage of reactions.	Dose employed.
M. Beck	1,154	100	371	100	1–10 mgrm.
H. Neff	8	0	12	58.3	1–6 mgrm.
C. F. Martin and G. D Robins.	2	100	24	87.5	$\frac{1}{2}$–3 mgrm.
G. G. Scars	10	90	..	....	Up to 1 mgrm.
F. W. White	8	100	45	100	1–10 mgrm.
Edward Otis (43)	85(?)	62.3	7	42.8	5–10 mgrm.
E. L. Trudeau	14	50	..	....	$\frac{1}{2}$–3 mgrm.
W. P. Northrup	31	74.2	16	100	1–4 mgrm.
Senator	4	100	46	100	
Grasset and Vedel	13	76.9	3	0	2–5 mgrm.
Von Jaksch	22	79.1	20	95	5–15 mgrm.
Maragliano	47	23	..	....	1–3 mgrm.; never over 10 mgrm.
Mouton	12	75	..	....	$\frac{1}{2}$–3 mgrm.
Port	40	50	..	....	2–10 mgrm.
Maydl	6	83.3	1	100	1–8 mgrm.
J. Petruschky (44)	2	100	..	....	
Anders	12	58.3	..	....	2–5 mgrm.
Total	1,470	71.89	544	78.36	

It will be observed from an inspection of Table No. 2 that 71.19 per cent. of the suspicious cases reacted.

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* No use was here made of statistics based on therapeutic tests of tuberculin.

The percentage of these cases that subsequently developed confirmed tuberculosis or in which the diagnosis was corroborated by necropsy can not be even approximately stated; but several writers who had experimented clinically with tuberculin refer to individual cases that either came to autopsy and showed tuberculous foci or later manifested other characteristic features of the disease. Two of my own cases reported above were similarly verified, one at the autopsy table, the other by the detection of tubercle bacilli in the sputum. The clinically suspicious conditions for which my own cases were injected embraced the following: One, acute tuberculosis; five, pulmonary tuberculosis; one, joint tuberculosis; one; peritonitis; two, pleurisy; one, tubercular meningitis; one, convalescent typhoid fever. Is there any conclusive evidence to justify the prevalent impression that tuberculin injections aggravate or facilitate the dissemination of the disease? Virchow (45) early noted that Koch's method occasioned collateral hyperæmia which, by producing maceration and softening of the tubercles, might easily be the cause of the liberation of tubercle bacilli from tubercles in the progress of recovery. He also found post-mortem evidence to establish the correctness of his position. As the result of Virchow's published argument, based on histological and pathological data, tuberculin for both diagnostic and therapeutic purposes fell into almost universal disrepute, although, fortunately, its re-use has more recently been warmly advocated. MacFarland also condemns the use of tuberculin for the reason that the reaction depends upon the conditions described above.

On the other hand, more recent and extensive clinical testing of Koch's method in widely separated parts of the world by competent observers, often working independently, has resulted in a practically unanimous verdict, which emphasizes its superior value as an aid to diagnosis of incipient cases on the one hand, and in no smaller degree its apparent harmlessness on the other. The literature confirming this position is too extensive to permit of my adducing a *résumé* here. In not a single series of cases among the many recorded above is mention made of any bad effects. One of my non-reactive cases developed a severe pain in the left inframammary region, lasting about ten hours, but without any associated symptoms. Head (19) refers to a case of Addison's disease in which a fatal termination occurred thirty-six hours after the injection of twenty-four milligrammes of tuberculin. May not the serious result have been due to the large size of the dose? It is to be recollected that early cases, to which its use should be limited, are, as a rule, sensitive to the test, and massive doses are not required. It has been perfectly determined also that there is a safe range of dosage, say from two to five milligrammes, or possibly even ten milligrammes. It was during the brief period when tuberculin was more generally employed for therapeutic reasons that the great mass of evidence opposed to its use for any purpose rapidly accumulated. As there are no characteristic reactions without some local disturbance previously described, it may be safely assumed that, making allowances for differences in individual susceptibility, the more extensive the previously existing tuberculous lesions, the more massive the dose of tuberculin required, and the greater the ensuing local disturbance induced thereby.

For these reasons, coupled with the fact that tuberculin does not promote the healing of the diseased areas, objection may be reasonably urged against its use, even in only moderately advanced cases, when the diagnosis is already assured. Acting upon this assumption, I have confined its use to the cases of suspected tuberculosis in which no other known means of recognition were available.

In this category of cases there are no gross lesions, as a rule; massive doses of tuberculin are not required, and an unfavorable local action is averted. If it were limited to this class of cases it would rarely fail in promptness or efficiency in moderate-sized doses, and, being an agent that is now generally available, its value to mankind would be inestimable. I have a fixed belief that tuberculin will tend to occupy its true sphere of usefulness just in proportion as the profession will in future keep in mind two rules as a guide—to wit, moderate dosage and the limitation of its usage to suspicious (incipient) cases and those that are unrecognizable by other means. This is the principal argument of the present paper, based on statistical inquiry recorded above and my personal experience with tuberculin; and I entertain no doubt that if these principles were enforced the re-use of tuberculin as a diagnostic agent would rapidly become general, and the results prove highly satisfactory.

Finally, if the use of tuberculin as a therapeutic measure in tuberculosis were abandoned (since this rests upon a misconception of the nature of the agent), much of the opposition to an invaluable aid in the diagnosis of latent and incipient cases would be removed.

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24. *Medical News*, August 23, 1898.
25, 26, 27, 28, and 29. *British Medical Journal*, February 5, 1898.
30. *Journal of Tuberculosis* (Asheville, North Carolina), April, 1899.
31. *Münchener medicinische Wochenschrift*, No. 22, 1897.
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33, 34, 35, 36. *Boston Society of Medical Sciences*, vol. iii, No. 4.
37. *Journal of Tuberculosis* (Asheville, North Carolina), April, 1899.
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39. *Münchener medicinische Wochenschrift*, No. 38, 1891.
40. *Internationale klinische Rundschau*, No. 50, 1890.
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42. *Deutsche medicinische Wochenschrift*, Bd. xvii, 1891.
43. *Journal of Tuberculosis* (Asheville, North Carolina), July, 1899, and *Medical News*, July 9, 1898.
44. Saunders's *Yearbook*, 1900.
45. *Deutsche medicinische Wochenschrift*, 1891, p. 131.

IODINE-BEARING DRUGS IN THE TREATMENT OF CHRONIC PURULENT OTORRHŒA.

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After an acute suppuration of the middle ear has settled down into a chronic form, certain dangers, not realized by the patient or by the patient's family, exist. The greatest, of course, are mastoid disease and its occasional sequel, cerebral abscess. Frequently the patient's general health is undermined and his vitality reduced, making him an easy prey to other diseases. The longer suppuration continues the more liable are the ossicles to necrosis and the more persistent becomes the discharge. A running ear is too frequently treated lightly by the attending physician, who has seen many get well without treatment. One should be as thorough in cleansing and drying up a running ear as in the treatment of any other condition, and should make every effort to lessen the probability of attic and mastoid involvement, for, while the mortality is very small, it would be infinitesimal if proper care were exercised from the start, and if a proper realization obtained of the grave possibilities.

With the most careful treatment of these cases the improvement is sometimes slight, but never hopeless; and, on the other hand, the ear may stop running in a few months, even when no treatment has been carried on—generally with more or less cicatrization in the middle ear and more impairment of the hearing through distortions, or even destruction, of the ossicles or of the tympanic membrane.

The aurist seldom sees a patient with deafness from this cause without a feeling of resentment in regard to the physician who had him in charge when he was curable. For such patients are curable in the great majority of instances if treated thoroughly, intelligently, and persistently until all discharge has ceased.

A suppuration of the middle ear not kept up by necrosis, polyps, or a foreign body is usually chronic, because (1) the tissues are lowered in vitality, (2) the septic material is active, and (3) drainage is poor. Unfortunately, drainage can seldom be improved, but the tissues may be stimulated and the activity and virulence of the germs lessened, until the suppuration has ceased entirely and the middle ear has returned to its normal condition.

In cases in which the discharge is profuse, the ear should be syringed thoroughly two or three times a day with a very warm two-per-cent. carbolic-acid solution, or some other antiseptic solution. Every day, or every other day, after thoroughly cleansing in this way, the ear should be mopped dry with absorbent cotton, and an antiseptic dusting powder should be blown in by the physician. The freer the discharge, the more care must be used not to insufflate too much powder, for an obvious reason. When the discharge is slight and not very offensive, no treatment at home will be necessary other than a general tonic, which may be beneficial. Daily, or every other day, however, the physician should dry out the ear with absorbent cotton under careful illumination and dust in the powder, being careful not to pack the canal.

One can not be content with the slow recoveries obtained by irrigating the ear with antiseptic solutions, since Burnett * has so clearly proved that the "dry treatment" cures the patient in one sixth the time. Such solutions may kill the bacteria, but the moisture lowers the resisting power of the tissues. The writer has, therefore, made it a rule to omit the solutions as soon as the discharge is slight and substitute an exclusively dry treatment.

For several years the favorite powders for this purpose were boric acid and iodoform. Boric acid is still employed, but, owing to its tendency to cake and obstruct the flow of pus and so bring about mastoid and intracranial troubles, it is distrusted by many aurists. The writer has seen more trouble follow the use of boric acid in the ear than has followed any other frequently used drug, except hydrogen dioxide. Both these drugs, even when cautiously used, may drive the pus back into poorly protected parts—the boric acid by its tendency to cake, and the hydrogen dioxide by its sudden forceful increase in volume when brought into contact with pus. The subiodide of bismuth is preferred by some physicians to boric acid in the dry treatment of chronic otitis media.

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* *Treatment of the Ear*, pp. 472, 475.

Iodine in some form is markedly beneficial. H. McNaughton Jones[*] pronounced it second only to corrosive sublimate as a local remedy in chronic suppuration of the middle ear. Harrison Allen[†] says: "The local effect of iodine, in non-irritating proportions, on the mucous membrane of the respiratory tract is to absorb exudations in or about gland tissue, especially of the lymphoid (adenoid) type."

The value of iodoform in chronic purulent otorrhœa is due to its antiseptic property and, more especially, to the free iodine which is liberated and stimulates the sluggish tissues. It has been highly praised by Rankin and Matthewson[‡] and by Spencer.[#] The odor, however, is greatly against its use in private practice, and so the chemists have vied with each other in their efforts to discover an odorless drug with the same desirable features. Iodol was thus introduced, and Stetter[‖] considers its action similar to that of iodoform. It is odorless and tasteless, and contains about seven per cent. less iodine than iodoform, but parts with it more readily. It is seldom used now.

Aristol was for a long time commonly used by surgeons as an ear dressing, either alone or in combination—as with boric acid or acetanilide. It, too, owes its efficacy in the treatment of chronic suppuration of the middle ear to the large percentage of iodine which is present and to the fact that it is held but loosely in combination.

The last iodine-containing powder which I have tried, and one which has pleased me so far more than any other powder for the ear, is iodomuth, a bismuth powder containing twenty-five per cent. of iodine. It is odorless, impalpable, and reddish-brown in color, and does not cake in the ear. After using it in private work for nearly two years, I ordered it for my service at St. Christopher's Hospital for Children, where we see about a hundred cases of chronic purulent otorrhœa a year. In the last five years I have tried boric acid, iodoform, aristol, nosophene, modoformol, and iodomuth, and only regret that no accurate records have been kept. Statistics are frequently misleading, and I am satisfied that iodomuth has been of more service to me than any other drug. The iodine it contains is sufficient to stimulate the sluggish tissues, and to destroy the micro-organisms. It also deodorizes the discharge, and the bismuth adds a local sedative action.

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[*] *Lancet*, 1889, vol. ii.

[†] *Local Therapeutics.*

[‡] *Boston Medical and Surgical Journal*, vol. xcii, p. 21.

[#] *American Journal of Otology*, 1870.

[‖] *Archiv f. Ohrenheilkunde*, 1887.

Therapeutical Notes.

Carbolic-acid Injections in Scarlatinal Amygdalitis.—According to the *Bulletin médical de Québec* for May, H. Judson Liper reports the successful employment of Heubner's treatment. By means of a long bent needle from two to four drops of a 1-in-40 solution of carbolic acid are injected into two or three different spots in the tonsil. Liper has used this method even in suckling infants.

For Insect Stings.—The *Journal des praticiens* for May 19th ascribes to Bernbeck the two following formulæ:

1. ℞	Flexile collodion	10 parts;
	Salicylic acid	1 part.
M.		
2. ℞	Flexile collodion	100 parts;
	Corrosive sublimate	1 part.
M.		

For local application.

These two applications are said by the author to give excellent results, and to be preferable to ammonia as at present employed. If applied promptly after the sting, pain is allayed, and subsequent inflammation is said to be rare.

Nitrate of Lead in the Treatment of Soft Chancre.—Melazyo (*Bulletin médical de Québec*, May) obtains rapid cicatrization of soft chancre by dusting the surface with finely powdered nitrate of lead, after a careful antiseptic washing. A crust is formed which becomes detached after thirty-six or forty-eight hours, leaving a simple wound, which cicatrizes promptly. The caustic action is exerted only on the diseased tissue.

Plasmon, the New Dietetic Preparation, is highly commended by Dr. E. Bloch (*Zeitschrift für diätetische und physikalische Therapie*, iii, 6; *Centralblatt für innere Medicin*) as being free from the disadvantages of many other artificial foods. He has always found it well borne and a sufficient albuminous aliment. It is particularly useful in diabetes, he says.

The Mechanical Treatment of Seasickness.—The *Bulletin médical de Québec* for May, citing *La Nature* of unspecified date, says that according to Dr. H. Rawlins, of London, the elevation of the four limbs rapidly relieves the subjects of seasickness by augmenting the blood pressure and thus diminishing the anæmia of the nerve centres due to enfeeblement of cardiac action in the nauseated state. The application of hot flannels aids the mechanical effect.

Methyl Salicylate for Painful Erections.—Bavatier (*Bulletin général de thérapeutique*, February 23d; *Fortschritte der Medicin*, May 30th) gives this formula:

℞	Methyl salicylate	1 part;
	Liquid vaseline	10 parts.

M. The penis is to be anointed with this liniment, covered with a thin layer of cotton, and bandaged.

Veratrum in Palpitation of the Heart.—The *Medicinische Woche* for April 23d gives this formula:

℞	Sodium bromide	1¼ drachm;
	Tincture of veratrum viride	50 drops;
	Syrup of orange peel	12½ drachms;
	Distilled water, enough to make	4¼ ounces.

M. S.: A tablespoonful twice a day.

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THE STUDY OF ANATOMY BY X-RAY STEREOSCOPY.

Among the many advantages accruing from the discovery of the x rays, their application to the study of anatomy has not received that attention which it deserves, and which we pointed out soon after the discovery of the rays was made known. With the living subject a great deal of valuable information can be obtained by the eye, the more valuable, perhaps, that the tissues adjacent to the underlying structures to be studied have not been disturbed. But it is in the study of the cadaver, not of course as a substitute for dissection, but as a most valuable aid to it, that Röntgen pictures made for use with the stereoscope may render the most material assistance. X-ray pictures of animals or of specimens in which the vessels have been injected with some substance opaque to the ray, though confused when looked at singly, come out singularly clear and comprehensible when submitted to the stereoscope. The application of the stereoscope to this kind of study was made so far back as in 1896 by M. Imbert and M. Bertin-Sans, of Montpellier, and later, M. Remy and M. Contremoulins insisted on the importance of the result of this method as giving the distribution of the vessels and their real relations and making clear the different vascular planes which were always altered in dissection. M. Gascard (*Revue médicale de Normandie*, March 25th) follows up these researches and shows that, while a simple image gives no information concerning the order of superposition of the planes or the distance which separates them, but shows the object as viewed by transmitted light, the use of two stereoscopic images "reconstitutes the object virtually in space, each detail being in its place, the surfaces appearing under their proper form and the planes separated from each other."

M. Gascard credits Marie and Ribaut with having demonstrated that it is not sufficient to take two views from points as far apart as the distance between the eyes, and with having worked out a formula by which satisfactory pictures for stereoscopic purposes may be taken. The formula is rather complicated, and it is unnecessary to explain it here; suffice it to say that M. Gascard's article is illustrated with a very clear stereoscopic Röntgen picture of a dead dog's head and neck in which, besides bones, teeth, and a good deal of hair, the arteries of the neck, which had previously been injected, are shown with great distinctness.

THE PUBLIC NURTURE OF INFANTS.

This is essentially an age of public and concerted action for the conservation of life and health and for the improvement of the race. The sentiments which underlie this action are operative in every civilized country from East to West, from Russia to Japan. The principle is evidenced in the establishment of boards of health, commissions of investigation into pestilential scourges, the beneficent work of the Geneva Convention, through the establishment of, and the free hand accorded by combatants to, military medical departments as well as the supplementary aid of Red Cross societies, and by the establishment of various State or public philanthropic institutions to deal not only with acute and transitory morbid conditions, as in hospitals and dispensaries, but even with those more chronic processes which have until quite recently been ignored as being beyond the reasonable limits of effective intervention.

These diverse efforts are all justified not only by principles of abstract humanity, but also by the soundest social economy; for, as we stated in our issue for March 31st in an article on the Public Care of Chronically Diseased Children, if such cases are treated adequately from a sufficiently early period and for an adequate time, "a considerable portion of the sufferers may be transferred from the debit side of the social ledger as State incumbrances to its credit side as useful citizens." The importance of this point of view is well brought out by an article in the *Polyclinic* for April on The Money Value of Medical Science. The writer, referring to the damages granted by juries in connection with the loss of life in a recent steamboat disaster off the English coast, says: "They must be taken as the sober estimates, by English men of business, of the prospective value in each instance of the man's life to his family, and if to his family then also to the community, for the wages which a man earns represent the worth of his yearly services to the public." The author takes care to point out that the principle is the same whether the wage earner is cut off by accident in some great disaster or dies of some preventable or curable disease. There is just the same loss to his family, and consequently to the community, in either case.

The same principle holds good in a modified degree also in regard to the proper development of the child from the helplessness of infancy to the profitable estate of vigorous adult life. It is true, the value to the community in infancy is potential only; but it is the assured potentiality of a sound investment, as is that of real estate on the immediate outskirts of a rapidly developing industrial community.

Every measure, therefore, which tends to secure to the community the fullest possible development of the children born into it is in the highest degree commendable and worthy of imitation. In our issue for October 8, 1898, we referred, in an editorial entitled A Truly Philanthropic Society, to the "Association of Ladies of Maule," a French society of the department of Seine-et-Oise, whose object is to render such aid to pregnant women, especially, but not exclusively, of the poorer classes, and irrespective of the legitimacy or illegitimacy of their offspring, as shall enable their children to come into the world under the best possible conditions.

We have now to commend with equal heartiness another society, also of French inception, the "*Goutte de lait.*" In the *Lyon médical* for June 1st we read that the *Goutte de lait de Rouen* will come into operation on July 1st. The society has for its object the supervision of the nurture and development of infants by means of a continuous supply of humanized and sterilized milk, such as shall afford to all families, without distinction of class, a supply of milk with all possible guarantees of purity proportioned to the requirements of their children. For the children of the indigent arrangements are made for the distribution of milk either gratuitously or at the mere nominal sum of two cents; while for the well-to-do and wealthy classes a remuneration proportioned to their means is required, the tariffs being regulated in such fashion that wealthy families shall cooperate in the social duty of aiding their less fortunate neighbors.

The medical service of this admirable institution is under the care of Dr. Marie Roussel, who will take upon herself the direction of the proper alimentation of children of the poorer classes, weighing them at stated intervals and in other ways taking note of their progress. She will also attend to the statistical work of the society. Lady inspectors will further visit necessitous families so as to be able to report to the committee of the real needs of such families, and of the use made of the milk supplied. The milk, humanized and sterilized in the society's laboratory, is supplied in flasks contained in a numbered metal basket. For the very poor from the crowded quarters a free distribution takes place daily at the Night Refuge, while the subscribers have the milk delivered at their residences.

When it is considered what a large proportion of the death-rate in many localities is contributed by the infantile mortality, and what an undue proportion of this is traceable to gastro-intestinal disorders, the value of such an institution can scarcely be too highly placed. This is not the first institution of the kind in France, for, as we are told by the *Lyon médical*, the scheme has for some time been most successfully operated in Féeamp by Dr. Dufour. According to the *Lancet* for June 9th, moreover, Dr. Alfred Hill, the medical officer of health for Birmingham, has been investigating the working of the French institution, and has reported to the corporation of Birmingham that "this system is being attended with great success, there being a very marked decrease in the infantile mortality at places adopting these methods of milk supply." And we can do no better than to heartily indorse the concluding words of our English contemporary: "Certainly the experiment is worthy both of study and encouragement; a diminishing supply of child life calls for vigorous steps to prevent an excessive infantile mortality."

A BOUNDLESS SCHEME OF PHILANTHROPY.

THERE are occasions of disaster, of all too frequent occurrence, when all men recognize the tremendous part played by the medical profession in the relief of suffering and the saving of life, but even we, the members of that profession, have as a rule no adequate and abiding realization of the part. This is probably due to the fact that, while our aid is always rendered promptly and heartily, it is done on the spur of the moment and without the advantage of special preparation for the emergency. In other words, it is because of lack of organization, and this lack detracts materially from the effectiveness of the best-intended efforts. The need of organization for the purpose of medical relief in emergencies, including those of war, has been perceived by Dr. J. Adelphi Gottlieb, of New York, and he has organized a body known as the National Volunteer Emergency-Service Medical Corps. Dr. Gottlieb has favored us with a copy of an address prepared by him for the recent meeting of the Section in State Medicine of the American Medical Association, in which he describes the organization. He assures us that the names of some of the foremost men of New York are on the list of its founders, so that it is not merely potential, but actually in existence; at least its nucleus is.

The corps is of a quasi-military character, uniformed, provided with officers ranging from major-generals down to trumpeters and with material appliances from transports to cooking utensils, and to be regularly drilled. It is to be subject to instant call by the military or civil authorities, national, State, and municipal. It is intimated that by the formation of like organizations in other countries an international or even universal order may be brought into being, one that would have some advantages over the Red Cross Society, but acting in accordance with the articles of the Geneva conference. The volunteer character of the corps is pronounced; its members pay an initiation fee and annual dues. We presume, however, that in time of actual service they would be maintained and remunerated from the funds of the organization, contributed in great measure by associates who, though unfitted for active membership, would be doing their part in a colossal work of philanthropy by assisting in its maintenance.

Dr. Gottlieb's scheme does not seem to us at all chimerical. Let the Knights Hospitallers live again in this brotherhood, and perils by land and perils by sea, railway crashes, floods, conflagrations, earthquakes, volcanic eruptions, tornadoes, pestilence, famine, and all other disasters will be shorn of half their horrors. From no other class of men is this blessing so likely to come as from the medical profession.

MATÉ, OR PARAGUAY TEA.

Maté, or Paraguay tea, an infusion of *Ilex paraguayensis,* would seem to have certain advantages over tea proper, says Dr. James W. Allan in some remarks made at a recent meeting of the Glasgow Southern Medical Society and reported in the *Glasgow Medical Journal* for June. While it is a stimulant containing an active principle analogous to theine and caffeine, it is said not to interfere with the digestion of meat, or to prevent sleep. It is made from the leaves and branches of the plant in the same manner as ordinary tea, but, containing much less tannin, is not harmed by boiling. Dr. Allan states that the taste for maté tea is an acquired one, but surely so is that for tea or coffee. If that is the only objection to it, its supposed advantages might entitle it to a trial.

A STEP IN THE RIGHT DIRECTION.

According to a Buffalo dispatch in the *New York Times* for June 17th, the supreme lodge of the Knights of Honor has voted to exclude Christian Scientists and faith curists from the order, considering that such cases are bad insurance risks, which it does not care to undertake. That appears to us to be the right and proper ground to take. Let them carry out their beliefs on themselves at their own individual risks if they wish; but when it comes to robbing children and irresponsible persons of recognized aids to recovery to which they are entitled, to endangering unwilling victims by the absence of proper precautions in the care of infectious disease, or to saddling insurance and benevolent societies with the pecuniary liability for their folly, interference is indicated, for then the rights and liberties of others are invaded. The State can and ought to take care of the first two contingencies, and all insurance societies should follow the example of the Knights of Honor in dealing with the third. Suppose a body of men were fools enough to pledge themselves that, whatever accident might befall them, they would not take or allow to be taken any measures of any kind for their relief, not even the stanching of hæmorrhage, basing their course of action on the belief that God's providence always did all that was necessary for man, would any accident insurance company insure them? We doubt it, and we should seek a sounder concern for our own policy, if any did.

AMERICAN NURSES IN PARIS.

It is to be feared that English-speaking nurses will be in demand in Paris this summer. That being the case, we are glad to learn that a bureau for American trained nurses has been established. It is under the direction of Mrs. W. H. Booth, and the nurses are mostly graduates of the Presbyterian and St. Luke's Hospitals, of New York. The bureau is at No. 102 rue Vaugirard.

A CHILD WITH A TAIL.

An example of the rare abnormity of a caudal appendage in the human subject was shown by Dr. Watson at a recent meeting of the Johns Hopkins Hospital Medical Society (*Johns Hopkins Hospital Bulletin,* May), in a male child three months old. The appendage, which was two inches and a quarter long, sprang from the situation of the tip of the coccyx, but seemed to contain no bone or cartilage. When the child cried, the tail shrank half an inch in length by a sort of "telescoping" retraction of its distal portion.

THE PLAGUE SITUATION IN SAN FRANCISCO.

The reported entanglements over the course said to have been pursued by the officers of the Marine-Hospital Service are, of course, to be regretted, but they can hardly be made the subject of comment from the medical point of view. It is satisfactory to observe that the Marine-Hospital Service health reports for the week ending June 16th contain no report of the plague from San Francisco.

YEAST IN THE TREATMENT OF PNEUMONIA.

Brewers' yeast seems to be gaining ground as a recognized therapeutical agent. Dr. P. Marie (*Tribune médicale,* May 23d; *Lyon médical,* June 3d) reports that he has used it in eight cases of pneumonia, and all of them ended in recovery. The first case was that of a man sixty-eight years old who had numerous and very painful boils with his pneumonia, and on that account the yeast was prescribed for him. His unexpected recovery from the pneumonia led Marie to employ yeast in the other cases.

MEDICAL JOURNALS AS BENEFACTORS OF THE PROFESSION.

The *Lyon médical* for June 3d states that the *Münchener medicinische Wochenschrift,* in consequence of its great financial success, has devoted part of last year's revenues to various funds in aid of physicians, viz., 2,000 marks (about $500) to the fund for the widows and orphans of Bavarian physicians, 1,000 marks to the assurance fund for German physicians at Berlin, 500 marks to the society in aid of Bavarian physicians incapacitated from working, 500 marks to a funeral fund for Bavarian physicians, and 220 marks for two physicians' widows. As the *Lyon médical* says, this is a very good example, and the *Münchener medicinische Wochenschrift* deserves none the less credit from the fact that it has been preceded in this excellent work for some years by our English contemporary, the *Lancet.*

A JOURNAL FOR THEATRE PHYSICIANS.

According to the *British Medical Journal* for May 12th, the Société amicale des médecins de theâtre de Paris has now a medical journal of its own, entitled the *Paris Théâtre médical.* What with railway physicians' and life insurance physicians', and theatre physicians' special organs, specialism in medical journalism is proceeding apace. By the way, are the police surgeons and the medical officers of the mercantile marine specially represented in the way of medical periodicals? The mining surgeon, too, appears to be out in the cold. Then an association of physicians employed in commercial enterprises might look for an organ. Any more?

CATAMENIAL SORE THROAT.

The notion of a connection between menstruation and anginose affections is not new, but perhaps it has not before been so fully studied as it has recently been by Dr. R. Martin (*Revue hebdomadaire de laryngologie, d'otologie et de rhinologie; Progrès médical belge,* April 15th), who finds that the connection is by no means uncommon, and that it is generally associated with some disorder of menstruation, and he is inclined to think that this operates by lowering the normal power of resistance to the streptococcus.

PHARYNGEAL ADENOIDS AND OBSTINATE VOMITING.

It seems that among the numerous troubles to which adenoid vegetations of the pharynx are capable of giving rise in children is almost uncontrollable vomiting, as in the case of a boy five years old reported by Dr. Aviragnet (*Revue mensuelle des maladies de l'enfance,* May). Repeated attacks of vomiting occurred, and treatment addressed to the stomach was of no avail, but the vomiting ceased when the vegetations were treated.

ITEMS.

The Death of Professor Tommasi-Crudeli, the celebrated pathologist, is reported to have taken place in Rome on May 30th. He had had a varied and brilliant career as a patriot, a soldier, a university professor, a hygienist, and a member of the Italian legislature. His death is a loss to the profession of medicine and to science in general all the world over.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported for the two weeks ending June 16, 1900:

DISEASES.	Week ending June 9.		Week ending June 16.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	31	4	32	12
Scarlet fever	101	7	114	9
Cerebro-spinal meningitis	0	8	0	4
Measles	419	21	392	17
Diphtheria	294	43	288	53
Laryngeal diphtheria (croup)	7	5	9	4
Tuberculosis	203	139	182	167
Chicken-pox	20	0	47	0
Small-pox	4	0	0	0

Marine-Hospital Service Health Reports.—The following cases of small-pox, yellow fever, cholera, and plague were reported to the surgeon-general during the week ending June 16, 1900:

Small-pox—United States and Insular.

Oakland, Cal	May 12–June 2	5 cases.	
Arapahoe County, Colorado	May 28–June 4	1 case.	
Archulita County, Colorado	May 28–June 4	1 "	
El Paso County, Colorado	May 28–June 4	2 cases.	
Logan County, Colorado	May 28–June 4	1 case.	
Mesa County, Colorado	May 28–June 4	1 "	
Wilmington, Del	June 2–9	1 "	
Washington, D. C	June 2–9	4 cases.	
Cairo, Ill	May 26–June 2	4 "	
Chicago, Ill	June 2–9	4 "	
Evansville, Ind	June 2–9	1 case.	
Wichita, Kan	June 2–9	5 cases.	
Covington, Ky	June 2–9	28 "	
New Orleans, La	June 2–9	41 "	21 deaths.
Portland, Me	June 2–9	4 "	
Fall River, Mass	June 2–9	9 "	
Lowell, Mass	June 2–9	1 case.	
Grand Rapids, Mich	June 2–9	1 "	
Jackson, Mich	June 2–9	1 "	
Manchester, N. H	June 2–9	2 cases.	
New York, N. Y	June 2–9	4 "	
Newbern, N. C	June 6	Several cases.	
Cleveland, Ohio	June 2–9	22 cases.	
Memphis, Tenn	May 20–June 2	13 "	
Salt Lake City, Utah	June 2–9	2 "	
Manila, Philippine Islands	Apr. 4–28	3 "	

Small-pox—Foreign.

Prague, Austria	May 19–26	5 cases.	
Ghent, Belgium	May 19–26		1 death.
Cairo, Egypt	May 12–20		4 deaths.
Liverpool, England	May 19–26	1 case,	2 "
London, England	May 19–26	5 cases.	
Paris, France	May 19–26		1 death.
Chihuahua, Mexico	May 26–June 2		2 deaths.
Vera Cruz, Mexico	May 26–June 2		7 "
Moscow, Russia	May 12–19	11 "	2 "
Odessa, Russia	May 19–26	7 "	1 death.
St. Petersburg, Russia	May 12–19	33 "	10 deaths.
Straits Settlements, Singapore	Apr. 21–28		2 "

Yellow Fever—Foreign.

Panama, Colombia	May 29–June 5	3 cases.	
Havana, Cuba	May 16–June 2	3 "	
Vera Cruz, Mexico	May 26–June 2		9 deaths.

Cholera.

Bangkok, Siam	Apr. 19	Epidemic.	

Plague—Insular Possessions, United States.

Malabon, Philippine Islands	Apr. 20	2 cases.	
Manila, Philippine Islands	Apr. 7–28	41 "	30 deaths.
San Pedro Macote, Philippine Islands	Apr. 20	Reported.	

Plague—Foreign.

Hongkong, China	Apr. 28–May 5	34 cases,	32 deaths.
Alexandria, Egypt	May 12–19	3 "	1 death.
Port Said, Egypt	Apr. 20–May 28	41 "	21 deaths.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending June 2, 1900:*

ANDERSON, FRANK, Surgeon. Detached from the Naval Hospital, Yokohama, Japan, and ordered home to await orders.

BERRYHILL, T. A., Surgeon. Ordered to the Naval Laboratory and Department of Instruction, Brooklyn.

BROWNELL, C. D., Passed Assistant Surgeon. Detached from the Naval Training Station, Newport, Rhode Island, and ordered to the Naval Hospital, Chelsea, Massachusetts.

COOK, F. C., Passed Assistant Surgeon. Ordered to temporary duty at the Naval Hospital, Norfolk, Virginia.

DE LANCY, C. H., Assistant Surgeon. Detached from the Naval Hospital, Washington, and ordered to the Naval Training Station, Newport, Rhode Island.

HARMON, G. E. H., Medical Inspector. Detached from the *Oregon* and ordered to the Naval Hospital, Yokohama, Japan.

HESLER, F. A., Surgeon. Detached from the Naval Hospital, Chelsea, Massachusetts, and ordered to the *Yosemite.*

PICKRELL, J. F., Surgeon. Detached from the Naval Station, Cavite, Philippine Islands, and ordered to the Naval Hospital, Yokohama, Japan.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the United States Marine-Hospital Service for the Seven Days ending June 14, 1900:*

BROOKS, S. D., Surgeon. Granted leave of absence for three days from June 25th.

CARRINGTON, P. M., Surgeon. Directed to proceed to Charlestown, West Virginia, for special temporary duty.

MCINTOSH, W. P., Surgeon. Granted leave of absence for twenty-eight days from June 19th.

PERRY, T. B., Surgeon. Relieved from duty at Baltimore and from special temporary duty at Atlanta, and directed to proceed to Mobile and report to the medical officer in command for temporary duty and assignment to quarters, assuming temporary charge during the absence of the medical officer.

ROSENAU, M. J., Passed Assistant Surgeon. Directed to proceed to Reedy Island Quarantine for special temporary duty.

CLARK, TALIAFERRO, Assistant Surgeon. Granted leave of absence for thirty days from June 13th.

BILLINGS, W. C., Assistant Surgeon. Directed to proceed to Charlestown, West Virginia, for special temporary duty.

MOORE, DUNLOP, Assistant Surgeon. Relieved from duty at Portland, Oregon; directed to proceed to Dutch Harbor, Alaska, and assume command of the service at that port.

CURRIE, D. H., Assistant Surgeon. Directed to proceed to Charlestown, West Virginia, for special temporary duty.

ADAMS, F. B., Acting Assistant Surgeon. Granted leave of absence for eight days from June 12th.

COOK, ALTA F., Acting Assistant Surgeon. Granted leave of absence for ten days from June 12th.

SAFFORD, M. C., Acting Assistant Surgeon. Granted leave of absence for fourteen days from June 26th.

TODT, W. C., Acting Assistant Surgeon. Granted leave of absence for ten days from June 3d.

Society Meetings for the Coming Week:

MONDAY, *June 25th*: Cambridge, Massachusetts, Society for Medical Improvement; Baltimore Medical Association.

TUESDAY, *June 26th*: Buffalo Academy of Medicine (Section in Obstetrics and Gynæcology); Richmond, Virginia, Academy of Medicine and Surgery.

WEDNESDAY, *June 27th*: New York Academy of Medicine (Section in Laryngology and Rhinology); New York Pathological Society; American Microscopical Society of the City of New York; Philadelphia County Medical Society.

THURSDAY, *June 28th*: New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Brooklyn Society for Neurology; Pathological Society of Philadelphia.

Births, Marriages, and Deaths.

Married.

CALLAWAY—TERRY.—In Fulton, Missouri, on Tuesday, June 12th, Dr. William Lee Callaway, of Chicago, and Miss Martha Anna Terry.

CRANE—HOWARD.—In Boston, on Tuesday, June 12th, Dr. Clarence Crane and Dr. Stella Spaulding Howard, of Dover, Massachusetts.

DAVIS—STREET.—In Ashmont, Massachusetts, on Wednesday, June 13th, Mr. Edwin Horace Davis, son of Dr. Wesley Davis, of Worcester, Massachusetts, and Miss Violet Kenah Street.

DUXBURY—BRADLEY.—In Lincoln, Massachusetts, on Thursday, June 14th, Dr. Joseph E. Duxbury, of Boston, and Miss Estelle May Bradley.

GIBSON—COWDREY.—In Edgewater-on-the-Hudson, New York, on Wednesday, June 13th, Dr. Walter Campbell Gibson, of Utica, New York, and Miss Mary Llewellyn P. Cowdrey.

PAINTER—ANGIER.—In Newton, Massachusetts, on Wednesday, June 6th, Dr. Charles F. Painter, of Boston, and Miss Alice Angier.

PRICE—KNOX.—In Lakeside, Mississippi, on Tuesday, June 12th, Dr. M. W. Price and Miss Adah M. Knox.

STEEL—PEARSALL.—In Jersey City, on Tuesday, June 12th, Dr. George E. Steel, of New York, and Miss Lydia Clark Pearsall.

Died.

CHASE.—In Putnam, Connecticut, on Friday, June 15th, Dr. Samuel C. Chase, in the eighty-third year of his age.

GAUDET.—In New Orleans, on Monday, June 4th, Marie Celestine Gaudet, daughter of Dr. A. C. Gaudet.

LEE.—In Dorchester, Massachusetts, on Saturday, June 9th, Dr. Luther M. Lee, in the sixty-second year of his age.

STORRS.—In Hartford, Connecticut, on Saturday, June 9th, Dr. Melancthon Storrs, in the seventy-second year of his age.

Pith of Current Literature.

Journal of the American Medical Association, June 16, 1900.

Gastric Hæmorrhage. Oration in Surgery, Delivered at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, New Jersey, June 5 to 8, 1900. By Dr. William L. Rodman.

Address of the Chairman of the Section on Stomatology. By Dr. M. N. Fletcher.

Dental and Oral Surgery. Its Relation to the General Field of Medicine and Surgery, and the True Professional Status or Rank of the Properly Educated Practitioner of Dental and Oral Surgery. By Dr. N. S. Davis.—The author believes that there is no more propriety in having a separate profession of dentistry than there is of ophthalmology or neurology or gynæcology, and advocates the presence in every medical faculty of a professor of dental and oral surgery.

A Course of Study. By Dr. W. A. Evans.

Technical versus Theoretical Training. By Dr. John S. Marshall.

Encouragement of Higher Education and Original Research. By Dr. W. E. Walker.

Medicine and Disease in the Philippines. By Dr. David J. Doherty.

Neurasthenia: Some Points in its Pathology and Treatment. By Dr. G. W. McCaskey.—One of the most important problems in the study of neurasthenic patients is that connected with the phenomena of tissue metabolism. Attention is called to that group of cases in which the chemical processes of the body seem to bear the brunt of the neurasthenic state. These cases are clinically represented by the phenomena of a more or less marked hypoazoturia. Rest would seem to be at the foundation of any and all lines of treatment. Hydro-therapeutics and electro-therapeutics serve well. As to gastric disease in the neurasthenic, the author believes that, with slight modifications, it requires the same treatment that it does under other circumstances; and cases that would explain the sweeping condemnation of Charçot in regard to local gastric medication in neurasthenia are, in the author's experience, exceedingly rare.

Report on Massage. By Dr. Douglas Graham.

Report of Case of Splenectomy, with Attempted Surgical Cure of Ascites due to Cirrhosis of the Liver. By Dr. T. N. Rafferty.

Laryngeal Papillomata Requiring a Special Instrument. By Dr. Seth Scott Bishop.

Medical Record, June 16, 1900.

The Occurrence of Mold in the Stomach and its Probable Significance. By Dr. Max Einhorn.—The significance of these mold fungi in gastric pathology is by no means clear. In two groups of cases, however, the mold formation is met with particularly: (1) Cases of intense hyperchlorhydria (occasionally attended with hypersecretion and vomiting); and (2) gastralgia with normal or reduced gastric secretion. It is a question whether the mold formation produced the existing pathological condition. Gastric lavage, followed by spraying with a one- to two-per-mille solution of nitrate of silver, in many cases causes the mold to disappear, and as the result a subjective improvement in the patient can be observed. Yet we find cases analogous in every respect without the presence of the mold fungi.

Diffuse Septic Peritonitis and the Elevated Head-and-trunk Posture. A Report of Three Additional Consecutive Cases of Recovery. By Dr. George Ryerson Fowler.

Disease of the Thoracic Division of the Sympathetic Chain. By Dr. Joseph Fraenkel.

Philadelphia Medical Journal, June 16, 1900.

Angina Pectoris. By Dr. Clifford Allbutt.

The Surgical Treatment of Congenital and Pathologic Disfigurements of the Face. By Dr. John B. Roberts.

An Experimental Study of the Origin of the Epidemic of Tetanus following July 4, 1899: Report of Case, with Recovery. By Dr. H. Gideon Wells.

The Necessity for State Aid in the Treatment of the Consumptive Poor. By Dr. Howard S. Anders.—An able and interesting article written to show that the tuberculosis problem is too great and too vitally urgent to be solved by the charitably disposed alone; and that it is a matter of governmental duty, as well as of philanthropic opportunity; and that upon the State, even in its broadest political sense, rests the obligation of justice and providence in this matter.

A Case of Hereditary Ataxia with Generalized, Bilateral, Choreiform and Athetoid Movements. By Dr. Bernard Oettinger.

A Contribution to the Study of Exophthalmic Goître. By Dr. Alfred Gordon.

Boston Medical and Surgical Journal, June 14, 1900.

Realism in Medicine. By Dr. A. T. Cabot.

Closing Statement for the Remonstrants to the Massachusetts House Bill No. 917, entitled "An Action for the Further Prevention of Cruelty to Animals," before the Joint Committee on Probate and Insolvency, March 15, 1900. By Dr. Harold C. Ernst.

The Mechanics of Lateral Curvature of the Spine. By Dr. Robert W. Lovett.—The author sums up his paper as follows: Torsion and side flexion of the spine are parts of one compound movement and neither exists to any extent alone. Lateral deviation of any part of the spinal column is therefore necessarily associated with torsion at the seat of the deviation. In flexed positions bending is associated with torsion in one direction, in extended positions by torsion in the opposite direction. It is obvious, therefore, from the kind of torsion observed in scoliosis that the deformity originates in the flexed position of the spine. To correct the deformity the spine should be thrown into extended positions, and side bending should be taken from extended positions. The harmful effects of the flexed position of school children in writing are referred to.

Malaria and Mosquitoes. By Dr. Irving C. Rosse.

Medical News, June 16, 1900.

The Prophylaxis and Control of Leprosy in this Country. By Dr. Prince A. Morrow.—There is great need of reform in the methods of dealing with leprosy in this country, both in the interest of the public health and the welfare of those afflicted. The policy of inaction no less than the policy of penal infliction should give place to a wise, comprehensive, and energetic system of segregation which should be carried out with humanity and intelligent discrimination. Instead of the traditional lazaretto, asylums should be provided which should be suggestive in their surroundings and mode of management of a sanatorium rather than a prison.

Causation and Relative Frequency of Typhlitis, Perityphlitis, and Appendicitis in Infancy and Childhood. By Dr. Joseph Henry Byrne.

Periods in Gynæcology. By Dr. Henry J. Garrigues.

The Lancet, June 9, 1900.

Primary Syphilitic Chancres. By Dr. J. Hutchinson. Lecture II.—The writer has seen only one case in which primary syphilitic chancre was not accompanied by bubo. It also happens very rarely that a syphilitic bubo occurs without any primary sore. As regards this latter occurrence, it must be remembered that primary sores in women are easily overlooked. Where the chancre is on the cervix uteri, the bubo will be within the abdomen. The bubo is often on the opposite side to the primary sore, owing to crossing of the lymphatics. Attention is called to the frequent occurrence in the same individual of tertiary gland disease and syphilitic arthritis. The question of diagnosis between soft and hard chancres, and the advisability of giving mercury from the start, are discussed. The writer holds that a positive diagnosis is only possible after several weeks have elapsed, but believes in beginning mercurial treatment early in all cases where there is any doubt, and states that this is the general opinion.

Tertiary ulcers on the genitals may sometimes be mistaken for primary sores; they yield rapidly to specific treatment. Attention is also called to the interesting cases of relapsing induration at the site of a former chancre, and to the great importance of early diagnosis in cases of epithelioma of the genitals.

In the treatment of primary sores, ointments should be avoided. Drying powders are far better: iodoform and boric powder for the non-specific and doubtful sores, and calomel powder or black wash for the syphilitic sores.

The Use of Massage in Recent Fractures and Other Common Injuries. By Dr. W. H. Bennett.—The writer calls attention to the great value of immediate massage in cases of fracture of the patella and of the olecranon. The object is to prevent adhesion, which almost certainly follows treatment by means of fixed immovable apparatus (plaster splints, etc.), and which adhesion is the cause of the stiffness and pain on motion. In fracture of the patella smooth massage and patellar manipulation should be begun at once, followed in a fortnight by passive movement of the knee. It is remarkable how little stretching of the union occurs when care is taken from the outset to secure free movement of the patella upon the femur. Attention is again called to the necessity of preceding all manipulations by simple, smooth massage. The writer believes in the operations of wiring, pegging, etc., in suitable cases, but holds that there are a certain number of cases where operation is not necessary, and where massage will work wonders. In joint dislocations massage is of the greatest value in preventing the wasting of the joint muscles, which so regularly occurs when the joint is fixed for any length of time. The tonicity of a joint depends upon the state of its muscles, not upon its capsule; where the muscles are wasted, the tendency to secondary dislocation is much greater. Smooth rubbing of the joint should be begun immediately after the reduction of the dislocation, followed in two days by passive motion, which should be very free in all directions save that which is in the direction of the muscles which tend to waste. No voluntary movements should be allowed during the first week. Massage is often of great use as an aid in the reduction of dislocations. In sprains, wrenches, and bruises, massage rapidly restores the parts to their normal state by the rapid removal of the various effused products. As regards passive motion in sprains, the last movement to be practised should be that which was concerned in the production of the injury.

The Primary Disorders of Growth. By Dr. H. Gilford.—A continued article, which will be reviewed as a whole upon its completion.

On the Relative Value of Symptoms of Acute Peritonitis. By Dr. E. S. Bishop.—The writer reviews the various symptoms of acute peritonitis, and states his belief that the only positive and absolute sign of this condition is rigidity of the abdominal muscles. Of the other symptoms so long looked upon as classical, such as vomiting, tympanites, and distention, fever, pain, and tenderness, etc., they are none of them to be depended upon. They are as often absent as present, and may vary to any extent. Rigidity of the abdominal walls is invariably present, however, and can always be detected when the examination is properly carried out. Inasmuch as this rigidity is temporary, lasting about three or four days, it is useless as a pathognomonic sign in cases of chronic peritonitis. The writer reports three cases of acute peritonitis which illustrate his views as above stated.

The Influence of the Buxton Thermal Water on the Excretion of Uric Acid. By Dr. W. Armstrong.—The writer reports the result of investigations to determine the influence of the Buxton thermal waters on the excretion of uric acid. His conclusions are as follows: 1. The excretion of urine and that of uric acid are both largely increased by the drinking of and immersion in Buxton thermal water. 2. As regards the excretion of uric acid, bathing is more efficacious than drinking. 3. Diuresis is greater after drinking the water. 4. Any deviation from the normal temperature of the water interferes with its efficacy. 5. The alterations in temperature affect the contained gas.

On Suprapubic Lithotomy in Old Men with Enlarged Prostate. By Dr. W. T. Thomas.—The writer reports four cases of suprapubic lithotomy performed by him upon men over sixty years of age, for vesical calculi. There was prostatic enlargement in all. He enumerates the difficulties of lithotrity in such cases, the frequent necessity for subsequent crushings, and points out the simplicity and bloodlessness of suprapubic lithotomy. The various steps of the operation are described in detail. All his cases recovered without complications and have remained free from calculi.

Monogamy in its Relation to Longevity and the Diseases of Late Life. By Dr. H. Campbell.—The writer calls attention to the deleterious effects of monogamy in reducing the age limit of reproduction in the man to that of the woman. He believes that the death-resisting powers of the father are transmitted to the children, so that a very virile and long-lived man with only one wife is unable to have any more children than the inferior man who dies at forty-five. This is to be remedied by elimination of the unfit: by their abstaining from marriage they are racially eliminated—unrepresented in posterity.

The British Medical Journal, June 9, 1900.

The Hill Stations of India as Health Resorts. By Sir Joseph Fayrer.—A description of the various hill stations of India, and their advantages as health resorts.

Clinical Lectures on Pneumonia. By Dr. J. Barr.—Lecture I.

Ætiology.—The writer holds that the pneumococcus of Fraenkel is not the only cause of pneumonia, and that the streptococci and staphylococci so frequently found in the expectoration often play a large part in its causation.

Statistics.—Pneumonia stands next to tuberculosis as a foe to human life. No age is exempt; contrary to the general belief, it is most common and most fatal during the first five years of life. It is less fatal in women than in men.

Symptomatology.—The various symptoms are reviewed in order, attention being called to the frequency with which it is overlooked in the young and aged.

Physical Examination.—In percussing the chests of children it is recommended that the whole hand be laid flat on the chest, thus decreasing the amount of vibration. Attention should be paid to the cardiac signs, and if there is any evidence of cardiac failure the patient should be encouraged to take long, deep breaths.

Pathology.—The views of Dr. A. H. Smith, of New York, are thoroughly discussed, but the writer does not entirely agree with him as to the specific nature of the disease.

Location.—Of 169 cases of pneumonia seen by the writer, the right upper lobe was affected in 16 cases, the right lower in 33, the left upper in 9, the left lower in 30, in 10 the whole right lung, in 5 the whole left lung, and in 25 cases both lungs were affected.

Prognosis.—The total death-rate of the writer's cases was 24.2 per cent. If secondary, terminal, and moribund cases are eliminated, the mortality was only 16.8 per cent. The prognosis is unfavorable in delirium tremens, diabetes, nephritis, etc. Herpes labialis can not be looked upon as a favorable sign.

Notes on the Treatment of Chronic Gout. By Dr. W. Bain.—After reviewing the pathology of gout, the writer states that in treatment our aim should be to prevent the formation of abnormal proteid decomposition substances and their accumulation in the system. Also to promote their elimination. The most important rule as regards diet is moderation. All errors of digestion must be corrected at once. The amount of habitual exercise must be considered. The diet should consist chiefly of lean meat, vegetables and food rich in nuclein being prohibited. Absolute abstinence from alcohol is best; good whisky and claret are the least harmful. The writer holds that while the salicylates relieve the joint pains, they increase the amount of uric acid at the expense of the leucocytes, and if there is any evidence of renal disease they should not be given. Potassium iodide is of peculiar value in chronic gout, seeming to retard the development of vascular and renal changes. He has had good results with guaiac, given in the form of tablets of the resin, twenty grains twice a day. It should not be given uninterruptedly. Pure water is the best biurate solvent.

Personal Experiences of Gout terminating in Acute Myositis of Entire Left Lower Extremity. By Dr. A. S. Myrtle.—The writer reports his own case. Many years previously his left knee was injured by being crushed in a fall with a horse. For the last four years it has shown marked gouty symptoms. In the autumn of 1899 he had an attack of acute gouty myositis of the entire left leg, from the hip down. The limb was swollen, hard, and painful, the tenderness being limited to the muscles. The acute pain was relieved in three days by colchicum and lysidine, but the leg remained swollen until the following spring, when a course of constant-current electric baths brought about a cure. There were never any signs of thrombosis or inflammation. The œdema was limited to the outer surface of the leg. Since 1896 he has been taking five grains of morphine daily for enlarged prostate and its attendant difficulties.

A Note on Gout. By Dr. J. Edmunds.—The writer has discarded sodium salicylate in favor of potassium salicylate, finding that it gives greater relief. Where urates are deposited from the urine he uses a solution of potassium bitartrate as a beverage. Twenty grains of the salt are put in a tumbler, which is filled with Salutaris or distilled water. In persons of a spare habit, a little sugar may be added.

Glasgow Medical Journal, June, 1900.

The Developments of Intracranial Surgery in Relation to Purulent Diseases of the Ear, accompanied by a Demonstration of Cases. By Thomas Barr, M. D.—The author, in his presidential address to the Glasgow Pathological and Clinical Society, discusses the history of pioneer surgery in this direction, and refers to the fact that Dr. Nelson, of Belfast, related to the British Medical Association in 1883 a case of intracranial suppuration successfully operated on, though his remarks were not recorded. The author refers to the following points as bearing on early diagnosis: 1. The practitioner, in the presence of symptoms suggesting intracranial mischief, should not fail to examine the ears for signs of past or present purulent disease. 2. The serious significance of rigors in the subjects of purulent ear disease is emphasized. 3. The absence of pyrexia is overrated as a safety signal. A normal or subnormal temperature is a common feature of uncomplicated brain abscess. 4. Striking intermissions in the symptoms often cause dangerous delay in carrying out operative measures which are nevertheless requisite. 5. The absence of pain does not exclude serious mischief of the sigmoid groove. 6. Exaggerated importance is, in the author's opinion, attached to vertigo. It may be present in almost any form of ear disease, and is of little value as an indication of intracranial mischief in the absence of other symptoms. 7. Chronic otitis media is more dangerous than the acute form. There seems to be a relation between pneumonia and purulent otitis, the pneumococcus being often present in both, and many cases of pneumonia apparently supervening on acute otitis media. Finally, the author vindicates the aurists as having lifted up warning voices on the dangers of discharges from the ears long ago.

Notes on Cases Simulating Extra-uterine Pregnancy. By John Edgar, M. B., F. F. P. S. G.—The author says that the cases which occasion the greatest difficulty in diagnosis are (1) those of pelvic hæmatocele due to other causes; and (2) those of pyosalpinx or suppurating pelvic tumor, accompanied by exudative pelvic peritonitis, in which no clear history of elevated temperature at the onset can be obtained. Five cases are recorded.

Some Observations on the Sterilization of Milk in Infant Feeding. By Carstairs Douglas, M. D.—The mixture which the author has found most suitable in general for infant feeding consists, for each drink, of six drachms of whole milk, twelve drachms of thin, strained barley water, two drachms of cream, half a teaspoonful of sugar of milk, a pinch of common salt, and one of sodium bicarbonate. If the child is constipated, part of the barley water may be replaced by fluid magnesia; while, in the event of diarrhœa, limewater may be used in the same way. As the child grows older, the mixture may be increased in strength and quantity.

Notes of a Case of Uncontrollable Vomiting of Pregnancy. By Andrew Wauchope, M. B.

Journal des praticiens, May 26, 1900.

Treatment of Psoriasis by Baths in Oil of Cade.—M. Balzer and M. Monsseaux recommend the treatment of psoriasis by bathing the patient in water which contains these elements:

℞ Black soap	3 ounces;
Water	6 “

An emulsion is made of this, and there is added:

℞ Oil of cade	3 ounces;
Emulsion of soap	q. s. ad 8 “

This is the dose for one bath. Although the authors make no pretense of curing the disease, they allege that their results are as good and as rapid as under other methods of treatment.

Soft Chancre.—M. Hallopeau and M. Lerrede print this chapter from their book on dermatology. When a balanitis is present, they advise irrigations with this solution for cleansing purposes:

℞ Alcohol	2 ounces;
Water	1 ounce;
Boric acid	45 grains.

The destruction of the chancre may be obtained by the use of this paste, which is left in place for twenty-four hours:

℞ Chloride of zinc	15 grains;
Oxide of zinc	150 “

Distilled water sufficient to make a paste.

The actual cautery may be reserved for rebellious chancres or phagedenic ulcers. Enlarged inguinal glands may be repeatedly painted with tincture of iodine. They must be incised if fluctuation is present and iodoform gauze or a carbolic-acid compress is used as a dressing.

La Presse médicale, June 2, 1900.

Lesions of the Cortical Nerve Cells.—M. G. Marinesco concludes from a study of cortical nerve cells in the fœtus and in the adult that a genuine chromatolysis is found in both. In the former, the perinuclear chromatophylic elements appear late, representing a physiological process, while in the adult they are the consequence of a degenerative process. This observation applies equally to medullary as to cortical neurones.

Beginning Signs of Diabetes.—M. E. Dufourt says that the first signs of diabetes may manifest themselves in a great variety of ways. The nervous system, the respiratory tract, or the genital organs may be the first to give evidence of the disease. In three hundred and fifty cases, two hundred and nineteen complained solely of polydipsia as the first sign of diabetes. Lassitude, neuralgia, insomnia, neurasthenia, and syncope were, in the order named, the principal complaints. Diabetes, then, may show symptoms in a number of different ways before attention is directed to it.

Le Progrès médical, June 2, 1900.

Contusions of the Chest.—M. Duplay says these may result in a laceration of the soft parts or in fracture of the rib or sternum or the costal cartilage. The lung may suffer directly or indirectly from rupture, the symptoms depending upon the character of the lesion. Hæmoptysis points with certainty to a pulmonary contusion, and an emphysema may arise in complication of an injury to the lung and a fracture of the rib, which may be limited or may embrace the entire parietes of the chest. Bronchitis, pneumonia, empyema, or pulmonary gangrene may be a sequel. The treatment is of two kinds, that for the immediate effects of the accident, and that for the traumatic lesions and their complications.

L'Indépendance médicale, June 6, 1900.

Gymnastic Exercises for Scoliosis and Vicious Attitudes.—M. E. Laurent and M. A. Dumontier describe a number of calisthenic exercises which they have devised for children suffering from kyphosis, scoliosis, and the assumption of vicious attitudes in standing. The exercises are given in the standing and lying positions and on a trapeze; some are passive and some active; some are undertaken with resistance. They consist mainly of flexions and extensions executed in such a manner as to have a gradual correcting tendency. The authors report a number of cases which show a decided amelioration of their former condition.

Lyon médical, June 3, 1900.

Diabetic Coma.—M. L. Hugounenq believes that the presence of β-oxybutyric acid in the urine of diabetics is an evidence of an intense disassimilation of proteids in weakened persons who have expended their metabolic energies in the maintenance of calorification at a constant level, and a sign of the difficulty or impossibility of oxidation of these waste products. The excretion of urea and oxybutyric acid should be parallel; when the former becomes greatly increased and the latter disappears, the author believes that the patient is threatened with coma.

Tuberculosis in the Postal and Telegraph Corps of Lyons.—M. Navarre shows that tuberculosis is on the increase among these persons, reaching in 1899 a percentage of 31.57. He attributes this high incidence of the disease to deficient sanitary arrangements in the workrooms and water-closets. (To be continued.)

Gazette hebdomadaire de médecine et de chirurgie, June 3, 1900.

Radiography for the Detection of Bullets in the Head.—M. Ed. Laval says that by means of two photographs taken at right angles to each other, or one in a horizontal, the other in a perpendicular plane, a bullet may be so perfectly localized in the head that its extraction is rendered a simple surgical operation, or the impossibility or inexpediency of its removal definitely shown.

Orthoform for Cracked Nipples.—M. Oui says that by the use of orthoform in a paste or in alcoholic solution he has obtained anæsthesia and complete relief from pains. He prefers a saturated alcoholic solution which is placed on a compress over the fissure in the nipple and allowed to remain for fifteen minutes. Complete analgesia follows rapidly.

Gazette hebdomadaire de médecine et de chirurgie, June 7, 1900.

Sterilization of the Hands.—M. Pierre Delbet, in a controversial article, repeats that his method of sterilizing the hands has been proved satisfactory by bacteriological tests as well as by his operative results. He believes that in this manner the hands may be rendered absolutely free from germs. He first scrubs the hands in a basin of still water with soap and a brush, and changes the water once, scrubbing for five minutes, especially about the nails and between the fingers. He prefers still water, since in running water it is not possible to secure a sufficiently thick lather to remove the fat. The hands are then rinsed in hot running water and then brushed in warm alcohol to get rid of the loose epidermis, the most fruitful source of infection. They are then plunged alternately into a basin of Van Swieten's fluid until the solution no longer runs off the skin, but wets it. This indicates the saturation of the epidermis with alcohol. The hands are then kept for one minute in corrosive sublimate and during the operation are rinsed in alcohol.

Deutsche Medizinal-Zeitung, June 4, 1900.

Prophylaxis in Cancer.—Dr. Robert Behla believes in the infectiousness of the secretions of a carcinoma and advises the utmost cleanliness on the part of attendants. The parts affected should not be touched unless necessary and rigid disinfection must follow contact. Intercourse is to be interdicted, and the linen and bedclothes of the patient are to be scrupulously cleaned. The author believes that cancer is due to a vegetable mold.

Hydriatic Treatment of Catarrh. By Dr. L. Linkenheld.

Die Medicinische Woche, June 4, 1900.

Therapeutic Exercise in Locomotor Ataxia.—Dr. Kindler gives directions for the execution of calisthenic exercises, which can be carried out without the aid of apparatus. The exercises consist mainly of flexion and extension of the legs and thighs in the standing, sitting, and recumbent positions.

Archiv für pathologische Anatomie und Physiologie und für klinische Medicin, clx, 1, 1900.

On the Mutual Relations of the Different Colorless Blood Cells. (Continued.) By Dr. A. Pappenheim.

On Tumors of the Dura Mater. By Dr. Felix Eugert.

Psammoma. By Dr. Rudolf Virchow.—The author reminds his readers that it is thirty-seven years since he gave the name psammoma to certain sandlike tumors of the brain and its membranes. Since that time, he says, others have applied the term to formations which he expressly excluded in his description, and great confusion has consequently arisen. He has been patient all this time, but he now cites passages from his original lecture on the subject to show that he restricted the name psammoma to true tumors developed in connective tissue, denying it to sandy growths formed in epithelial tissue, with which he was familiar at the time, for example meningitis arenosa and peritonitis arenosa, and denying it also to mere physical concretions as distinguished from organic growths.

On the Thymus Dullness. By Dr. Robert Blumenreich.—In this elaborate article, the entire purport of which can not well be given in a short abstract, the author insists upon the practical point that, to ascertain the outline of the thymus by percussion in the living subject, one should percuss lightly, for otherwise the resonance of the underlying trachea will be elicited.

On Nuclear Changes in Muscular Atrophy. By Dr. Walther Kottmann.

The Ependyma of the Cerebral Ventricles in Tuberculous Meningitis. By Dr. Otto Walbaum.

The Histological Processes in the Healing of Ovarian Injuries and the Capacity of Ovarian Tissue for Regeneration. By Dr. Alexander Maximow.

On Ochronosis and the Pseudo-ochronotic Coloration of Cartilage Produced by Formol. By Dr. Heile.

On Alimentary Oxaluria. By Dr. Galileo Pierallini.

On Lymphomata of the Liver in Infectious Diseases. By Dr. Bernhard Marcuse.

Rhabdomyosarcoma with Hyaline Degeneration (Cylindroma) in Voluntary Muscle. By Dr. Akira Fujinami.

The Intrapleural Pressure in the Living Healthy Person. By Dr. E. Aron.

Riforma medica, May 5, 7, and 8, 1900.

A Contribution to the Pathologic Anatomy of Progressive Muscular Dystrophy. By Dr. G. Gianni.—The writer reviews the literature of the subject since 1894, and reports a case of progressive muscular dystrophy in which he had the opportunity of examining microscopically the muscles, the nerves, and the spinal cord at an early stage of the malady. The patient was a boy, aged twelve years, who presented the clinical signs of muscular pseudo-hypertrophy. The microscopic appearances of the muscles in which the process was advanced did not differ essentially from those described by other observers. In the muscle fibres in which the process had but recently begun two facts were particularly noticed —viz., that the fibres increased in size, some of them to a very marked degree, and that there was a remarkable increase in the number of the nuclei of the sarcolemma. The greater part of the fibres of such muscles, however, was normal. These facts are not without importance. It is known that Charcot and his pupils have maintained that in this affection a hypertrophic stage precedes the atrophy of the muscle fibres. The same is also affirmed by Erb and Hitzig. The writer's findings therefore corroborate the statements of the above-named observers. Some writers, among them Eulenburg, Auerbach, Berger, and Vizioli, believe that in this disease there is a true hypertrophy of the muscle fibres at the beginning, while Golgi, for example, claims that we have to deal with a sort of metamorphosis or retrogressive change into connective tissue on the part of the muscular elements. The writer has met in his microscopic sections the same characteristics that Golgi cites as arguments against the theory that there is a true muscular hypertrophy—namely, the markedly homogeneous character of the thick fibres, the enlargement of the nuclei of the sarcolemma, and the appearance of large nuclei in the interior of the fibres, but can not see how these exclude the presence of a true hypertrophy. What must be excluded, however, is the presence of compensatory hypertrophy, as some have contended (Silva, N. Cardarelli). True, it is possible that in a muscle in which a large proportion of fibres is atrophied some fibres are hypertrophied as a consequence of the increased amount of labor which falls upon them. But this argument holds good when muscles are in an advanced stage of alteration, but not in cases in which the affection is in its initial stages, when the greater part of the fibres is normal, and when the function of the muscles is not yet notably affected. The multiplication of the nuclei of the sarcolemma is a true increase in number, as Bizzozero, Golgi, Babinsky, Mingazzini, and others have claimed, and not only an apparent increase, as Raymond and Artaud maintain. This increase is not constant, as appeared from the examination of sections of muscular tissue at different stages of the disease. They are greatest when the morbid process has reached its maximum. The author does not pretend to explain how the atrophy takes place; he merely emphasizes what he has found on microscopic examination. The spinal cord was not affected to any appreciable extent. Hence the present state of our knowledge of the pathology of the disease does not strengthen the teachings of the clinic. There is a group of muscle atrophies in which the lesions begin in the muscles, while the spinal cord is not affected, even at the height of the process in the muscle tissue. Hence this group of dystrophies must be distinguished from those in which the changes in the spinal cord and nerves play an important rôle.

Riforma medica, May 9, 1900.

Research Concerning the Indican-forming Substances and Glycuronic Acid in the Urine. By Dr. Enrico Reale.—The writer noticed some time ago that if urine is treated with a solution of ferric chloride in hydrochloric acid, as Obermeyer suggested, for the purpose of testing for indican, the quantity of the latter which is precipitated as a result differs if the solution is cold from that obtained when the mixture is heated. Thus a urine which will give no indican reaction, or a scarcely perceptible trace, if the test solution is added cold, will give a marked reaction if the urine is boiled after the addition of the reagent. This, of course, may be explained by the fact that heat favors chemical reactions. But there are cases where just the reverse obtains—namely, that a urine will give an abundant precipitate of indican if the reagent is used in the cold state, while scarcely any reaction will be obtained when the urine is boiled with the reagent. If the test tube is carefully watched while the urine is boiling it will be noticed that at the beginning there is a separation of blue indican, which, however, does not remain very long, but changes to a pink color (transformation into red indican), and sometimes even this tint disappears (transformation into a colorless substance). These facts may be explained by supposing the presence of an indican-forming substance in the urine which is very unstable. Naturally, the first thought is of a glycuronic combination (indoxyl-glycuronic acid). This is also suggested by the fact that these urines ordinarily belong to lithæmic subjects, and react more or less to the reduction test, so that sometimes they are thought to contain a small quantity of sugar.

This hypothesis was demonstrated to be true by the author's researches during the past few months. The chief fact which he has shown is that the decomposition of the indican-forming substance, and therefore the separation of blue indican, may be secured in the above-mentioned urines by the simple addition of an organic acid in the cold state. Of the latter, formic acid is the most efficient, and was therefore preferred by the writer. Lactic and acetic acids also serve this purpose. To show the formation of indican in boiling urine on the addition of organic acids the following test may be used:

To from twenty-five to a hundred cubic centimetres of urine in a beaker the same quantity of solution of barium chloride is added. The mixture is well shaken, and the white precipitate, insoluble in acids, is barium sulphate, which represents the so-called "mineral" sulphuric acid of the urine.

The urine is then filtered, and to the filtrate enough hydrochloric acid is added to change the reaction to acid. Then two to ten cubic centimetres of the same acid are added (according to the amount of urine used in the test) and the mixture boiled. A new cloudy precipitate is produced, and is due to the formation of barium sulphate, which corresponds to the sulphuric acid liberated by the decomposition of the sulphuric ethers in the urine. If the same test is repeated with formic acid a new precipitate is formed in the beaker and settles very slowly. If the liquid is now decanted and distilled water is poured into the same beaker, the precipitate will dissolve completely if the beaker is heated on a sand bath, showing that the precipitate is not barium sulphate.

That this precipitate is a barium compound is shown by the fact that the solution gives a white sediment of barium sulphate on the addition of a few drops of sulphuric acid. The writer has proved by chemical analysis that this barium compound is a salt of glycuronic acid. The distillate of the liquid contains furfurol (aldehyde of alpha-furfurancarbonic acid). The author at present is working upon a method of quantitative determination of glycuronic acid.

Riforma medica, May 10, 1900.

Concerning the Action of Atropine in Hyperthermia due to Injections of Peptone. By Dr. Guido Ferranini.—This preliminary communication relates to a research on the question as to the production of the rise of temperature which follows the injection of peptone into the blood. It is well known that atropine paralyzes the secretory functions of all the glands of the body, among others the glycogenic function of the liver. The liver is an important thermogenetic centre, and principally so because there the glycogen becomes changed into glucose. Hence it may be supposed that large doses of atropine may lower the temperature by inhibiting this phase of metabolism. As Seegen has shown, the injection of peptone into the mesenteric veins of animals increases the amount of glucose in the blood, and, as Lepine has proved, antipyretics oppose the secretion of glucose. Hence the question arises whether atropine reduces the temperature in the hyperthermia of animals into whose veins peptones have been injected. The investigations of the writer were conducted with a view of determining this question, and if possible localizing the focus of heat production in these circumstances. The conclusions drawn from the writer's experiments are as follows: 1. If the dose of atropine is proportionate to that of peptone, preventive injections of atropine inhibit the elevation of temperature due to the peptone. This result is more constant if the atropine is injected in fractional doses, at intervals, before the injection of the peptone. For example, in guinea-pigs about fifteen milligrammes of atropine to a kilogramme of the animal are necessary to prevent the pyrexia caused by about forty centigrammes of peptone. 2. The injection of atropine at the same time with that of peptone almost always succeeds in impeding the pyrexia. Although there is a certain amount of pyrexia in these circumstances, the temperature is not so high as it would be with injections of peptone alone. It is always preceded by a distinct lowering of the temperature. 3. Injections of atropine practised during the course of the pyrexia due to the peptone arrest the progress of the hyperthermia, accelerate the defervescence, and sometimes favor the occurrence of a slight hypothermia.

Riforma medica, May 11, 12, and 14, 1900.

Clinical and Histologic Study of Tuberculous Polyneuritis. By Dr. Gaetano Finizio.—The writer reports the case of a man, aged twenty-six, who presented the symptoms of multiple neuritis, and who died of general tuberculosis. The autopsy showed the presence of tuberculosis of the lungs, the peritonæum, the spleen, and the liver. The central nervous system did not show any gross pathologic changes. On microscopic examination the peripheral nerves of the upper extremities did not present anything abnormal, but those of the lower extremities showed degenerative changes on staining by Marchi's method. The spinal-cord sections, stained by Nissl's method, also exhibited various phases of degenerations in the cells of the motor tracts. In the brain the most conspicuous changes were found in the Rolandic region, especially in the large pyramidal cells, and consisted of various stages of degeneration and atrophy. This case may therefore be considered as one of polyneuritis and polyencephalitis. The cause of the disease could not be referred to anything else but the action of the toxines of tuberculosis upon the nerves and nerve cells. Several cases have been reported in literature in which the cause of the neuritis was the tuberculous process. In the present case it is interesting to note that though the action of the poison of tuberculosis upon the peripheral nerve cells was more marked, the cerebrospinal portions of the neurones were also affected. This localization of the toxic influence of the disease upon the motor neurones may be explained by an elective tendency of the posion of tuberculosis toward the motor cells and fibres; but in other published cases the sensory neurones were also affected, in some instances before the motor neurones were attacked. The elective property of the toxine may vary according to the comparative resistance of certain parts of the nervous system in the individual affected. In conclusion, the author emphasizes the fact that the patient had a hereditary neuropathic taint, and says that the present case proves the dictum of Charcot that in nervous diseases of infectious origin heredity plays a well-marked rôle.

Vratch, April 29, 1900, O. S. (May 11, N. S.).

On the Technique of Enucleation of Cervical Lymphomas. By Dr. Lisiansky.—This operation requires considerable anatomical knowledge and careful dissection. In addition, some experience is necessary to be able to determine the particular incision required in a given case. The author describes briefly the methods of Koenig, Tillmanns, Bergman, Bruns, Mikulicz, Jordan, and Kuettner, and gives the details of his own operation. His incision begins "a fingerbreadth from the hairy portion of the head, and a fingerbreadth and a half to two fingerbreadths away from the external border of the sterno-mastoid muscle. This incision runs parallel to the latter muscle down to the clavicle." From the upper end of the cut he makes a horizontal incision across the sterno-mastoid to the angle of the lower jaw, slightly curving the line upward. This last incision must be a fingerbreadth and a half to two fingerbreadths distant from the mastoid process. From the angle of the jaw the cut curves sharply downward parallel and about a fingerbreadth to a fingerbreadth and a half from the sterno-mastoid to the middle of the thyreoid cartilage. If the affected glands lie near the border of the lower jaw, he does not make this last incision parallel to the anterior border of the sterno-mastoid, but somewhat nearer the jaw. This shorter incision can be lengthened at will. The longer incision, parallel to the external (posterior) border of the sterno-mastoid muscle, may also be made in a diverging direction backward, if the situation of glands so demands. The transverse incision is continued through the sterno-mastoid, and the entire flap of skin and muscle is dissected downward. He begins the enucleation of the glands from the lower outer end of the wound—*i. e.*, from the clavicle—and gradually ascends to the hairy part of the head. The reflection of the sterno-mastoid facilitates the work of dissection and enucleation to a remarkable degree. The author has never had any difficulty in avoiding the vessels nor in preserving the nerve of Willis.

In tuberculous cases he washes the wound with bichloride solution and sprinkles it with sterilized iodoform in order to prevent the infection of the wound with liberated tubercle bacilli. The muscle and the skin were always sutured with silk, and the lower end of the wound was drained by means of tubes or wisps of gauze. The transverse incision he makes almost straight with rounded ends downward, because this shape facilitates approximation of the skin flap in suturing. Out of fifteen cases he obtained primary union in all except two. All the cases were cured.

Concerning Chloral Psychoses. By Dr. A. F. Akopenko.—The ætiology of mental affections is gradually becoming clearer since the toxic or autotoxic theory of their causation has been advanced. A certain group of psychoses is now explained by the presence of toxic conditions. It seems probable that the remaining psychoses are also due to some form of poisoning. The present paper deals with the psychic disturbances that are the result of the habitual use of chloral hydrate. The writer reports two cases of psychoses due to this drug habit, and draws the following conclusions: In cases where the psychic disturbances due to the habitual use of chloral develop into a true psychosis, the condition of the patient resembles very closely the condition of normal sleep. In fact, the author saw complete unconsciousness to surroundings at it occurs in sleep. The few sensory impulses that reach the patient's consciousness only provoke hallucinations and illusions. The functions of association are abnormally excited, and the patient rapidly changes from one subject to another in his delirium in the same way as occurs in sleep. This, of course, is due to the absence of the controlling influence of reason. The sense of time disappears, and in a few minutes the patient lives through events that occupy years. The author emphasizes the resemblance of the psychosis of chronic chloral poisoning to natural sleep, and believes that the reason of this will be found in the fact that, like natural sleep, chloralism is the result of a congestion of the brain or of the action of a poison upon the brain cells.

On the Therapeutic Applications of Hypnotism. By Dr. I. V. Viasemsky.—The writer reports his experience with hypnotism as a curative agent during the past two years, and relates seven cases that were of special interest.

Chloroform Narcosis without Preparation of the Bowels. By Dr. G. A. Gorbounoff.—The author shows by statistical data that, contrary to the generally accepted idea in patients whose bowels had not been emptied before the operation because there was no time to give laxatives, or even enemas, less chloroform was required, less time required to anæsthetize to the surgical degree, and the after-effects were less disagreeable. He asks whether the emptying of the bowels is really necessary before an operation with general anæsthesia.

Medical Statistics of Taschkent. By Dr. Schwarz. (Continued.)

Russian Archives of Pathology, Clinical Medicine, and Bacteriology, April, 1900. (Roussky Archiev Pathologyi, Klinitcheskoy Meditsiny y. Bakteriologyi.)

The Formation of Spider-leg-like Processes during the Growth of Colonies of the Bacillus of Typhoid Fever as a Differential Sign in Diagnosis. By Dr. M. A. Stchegolieff.—This formation of prolongations resembling the legs of a spider was first noticed by Rosenthal, and was more definitely described by Klie. Both writers used three-per-cent. to five-per-cent. nutrient gelatin. The urine-gelatin suggested by Piorkowsky was a step in advance in this direction, but did not give a definite diagnostic result when the differentiation of the colon bacillus from the typhoid bacillus in the stools of the patients was attempted. The passage through different culture media in the laboratory seems to favor the appearance of the characteristic colonies of typhoid-fever bacilli, while the colon bacillus seems to lose in these circumstances all tendency to grow with the prolongations so characteristic of the typhoid germ. The author based his research both upon laboratory cultures and upon colonies of bacilli from the fæces of typhoid patients.

Summarizing his results, the author draws the following conclusions: 1. The characteristic spiderlike appearance of colonies of typhoid bacilli grown upon urine-gelatin often enable one to make a differential diagnosis between this germ and the common colon bacillus by means of plate cultures from the fæces. 2. This sign only loses its diagnostic value in those cases in which the colon bacillus that is present in the fæces also grows with the spider-leg processes on gelatin. 3. In contrast to the loss of the capacity to grow with these processes, which occurs in the case of the *Bacillus coli*, if cultivated artificially, the typhoid bacillus never loses this property, even if grown artificially for years.

Concerning Mycotico-embolic Aneurysms. By Dr. Oscar Ling.

A Case of Gonorrhœa with Rheumatism, a Symmetrical Eruption on the Skin, and Loss of the Nails. By Dr. V. Stanislavsky.—This type of eruption was first described by Vidal in 1893, and similar cases were reported by Jeanselmo, Chauffard, Kobert, Jacquet, and Ghika. The patient was twenty-eight years old, and had contracted gonorrhœa for the first time. Three weeks later polyarthritis of the lower limbs appeared, together with horny crusts, simple or stratified, semitransparent, at times adherent, at times easily detachable, leaving the skin slightly red and moist. Some of them grew into conical masses with thickened epidermis around them. These latter crusts were very closely adherent; the elevations were principally found on the soles, occupying symmetrical positions; others were found on the scrotum, perinæum, and on the skin of the penis. The eruption was more abundant in the regions affected by the arthritis. Thus, on the left thigh there were true cutaneous horns, conical in shape, stratified, semitransparent, and consisting of completely hornified epithelial cells. These elevations were one centimetre in diameter at their base, and one centimetre in height. Their bases sometimes were confluent, sometimes distinct and isolated. The concave surface of these corneous elevations adhered to a small reddish papule, papillomatous in character, and slightly moist. Similar projections of horny substance were found on the anterior surfaces of the toes; these gradually pushed off the nails. The mucous membranes showed the presence of similar eruptions in the form of red, elevated, circumscribed plaques. There was a febrile movement of the remittent type. After three months the temperature fell to normal, the joint pains disappeared, and the eruption diminished. After six months all traces of the disease vanished.

The Influence of Repeated Injections of Toxines upon Nutritive Exchange. By Dr. K. Dmitrievski.

Concerning the Production of Amylolytic Ferment by the Leucocytes. By D. Zabolotny.—The writer made a series of experiments with the view of establishing the chemical relations of starch and leucocytes. He found that: 1. Leucocytes are capable of digesting starch. This proves that their protoplasm contains an amylolytic ferment. 2. By injecting starch into the blood of animals we can produce a certain degree of immunity against this chemical reaction. 3. The serum and organic extracts of such immunized animals possess greater amylolytic powers than those of normal animals. 4. Leucocytes devour particles of starch paste and digest them. They then become iodophile. 5. The presence of an amylolytic ferment in the phagocytes can not be doubted. In view of the possibility of the presence of other ferments in the phagocytes, the author proposes the name " amylo-phagocytase " for the amylolytic substance.

Annals of Surgery, May, 1900.

Two Cases of Œsophageal Diverticulum, with Remarks. By Dr. Maurice H. Richardson.

Post-diphtheritic Stenosis of the Larynx (Retained Intubation Instruments and Retained Tracheal Cannulæ). By Dr. John Rogers, Jr.—" The commonest cause of post-diphtheritic stenosis necessitating long-continued intubation is a hypertrophy of the subglottic tissues accompanied by a chronic inflammation. The intubation is in no way the cause of this, as it occurs irrespective of the operation. Less often there is an ulceration, and subsequently a formation of greater or less amount of cicatricial tissue and contraction. This likewise is not the result of the intubation except in rare and practically unavoidable instances. But it certainly may follow a tracheotomy, and in a larynx already chronically stenosed it makes the condition worse, but not necessarily more difficult to cure. Exuberant granulations *within* the larynx apparently do not occur with intubation, no matter how prolonged." Incidental testimony to the value of antitoxine is given in the case of a house surgeon who complained to the author that his predecessors had always averaged at least one intubation a week and had thereby obtained valuable experience; whereas, in consequence of the rule that antitoxine should be given to every patient as soon as there was any suspicion of diphtheria, he had not during a year's service had a single opportunity to practise intubation on the living subject.

A Contribution to the Surgery of the Stomach, including Wounds, Gastrostomy, Gastro-enterostomy, and Gastrectomy. By Dr. H. Beeckman Delatour.

Report of a Case of Recovery after Ligation of the First Portion of the Right Subclavian Artery for Aneurysm of the Third Portion. By Dr. A. E. Halstead.—The author says that there are several points in connection with this case which he regards as worthy of consideration. 1. The aneurysm involved the entire third portion of the subclavian and encroached slightly upon the second portion, so that the only rational method of treatment was ligation of the first part. 2. The anomalous position of the subclavian vein, which was found above the artery throughout its whole course. Owing to this position of the vein, it was torn while endeavoring to retract it downward so as to reach the artery external to the internal jugular. As a result of this accident, a considerable amount of time was consumed before the hæmorrhage could be controlled by lateral ligation of the vein. 3. The anomalous origin of the right subclavian and the unusual depth of this vessel were for a time very confusing. 4. The possibility of having to resect the clavicle was considered before the operation. Dr. Halstead had determined to ligate the vessel without this, if possible. He now considers it a necessary step, and would strongly recommend preliminary resection of the clavicle and a portion of the sternum in all cases. In his opinion, it makes very little difference whether the portion of the clavicle which is resected is restored or not. In the case reported the patient had an almost perfect clavicle at the end of six weeks, although the inner third, together with the upper end of the sternum, had been removed. 5. The ligatures employed in this case were of formaldehyde catgut. The suggestion of Souchon, of applying two or three non-contiguous absorbable ligatures, should be followed in all cases. The ordinary surgeon's knot is all that is required. The ligatures should be drawn sufficiently tight to occlude the vessel, which can be determined by cessation of pulsation in the aneurysm, and not tight enough to rupture the arterial wall. 6. Probably the most important factor in securing favorable results in these cases is the preservation of an aseptic condition of the wound. 7. As regards the results so far obtained in the ligation of the first portion of the right subclavian, this case is, the author believes, the second on record where the patient survived the operation. The first case of recovery after ligation of the first portion of the right subclavian artery is probably that published by Curtis in the *Annals of Surgery,* April, 1898.

Complete External Dislocation at the Elbow. By Dr. Randolph Winslow.

Report of a Case of Actinomycosis of the Human Lungs. By Dr. James B. Bullitt.

Report of a Case of Superficial Bilateral Gangrene with Asymmetrical Lesions. By Dr. George F. Wilson.

Dislocation at the Shoulder Complicated by Fracture through the Anatomical Neck of the Humerus. By Dr. Charles Brooks Brigham.

The Quarterly Medical Journal for Yorkshire and the Adjoining Counties, May, 1900.

An Address before the Leicester Medical Society. By Sir William Broadbent, M. D., F. R. S.

The Ancestry of Man. By W. H. Gaskell, M. D.

A Case of Bilateral Coxa Vara. By R. J. Pye-Smith, F. R. C. S.

On the Occurrence of Air Embolism, with Report of a Case. By J. Basil Hall, F. R. C. S. Ed.—Air embolism is caused by failure of a vein to collapse on being opened, and is usually produced by manipulations during operation rendering the vein taut. The passage of the external jugular through rigid deep fascia tends to the same result. Inflammatory thickening or pathological tissue may act as a cause. The amount of air necessary to cause death varies with the size of the animal and the mode of infection. Air embolism has occurred most frequently in wounds of the head, neck, and shoulder, the axilla, the longitudinal sinus of the skull, and finally from putrefaction gases entering the circulation from the uterus in puerperal septicæmia. The author, noting Welch's researches, thinks this latter case probably due to a gas-producing microbe, which would also explain cases occurring during gangrene. The impunity with which the lateral sinus is opened in some mastoid operations seems remarkable. Post mortem, air is found in the right auricle, sometimes greatly distending it, and a frothy mixture of blood and air in the whole right side of the heart. Air bubbles may be observed in the pulmonary artery and its branches. The symptoms consist of a sucking noise when a vein has been opened, resembling that caused by puncture of the pleura; stoppage of respiration, followed by inspiratory gasps; extreme pallor; dilatation of pupils; tetanic spasm and risus sardonicus; fluttering and imperceptible pulse, the heart beating rapidly and tumultuously, and a distinct thrill over the præcordium. Then the muscles relax, respiration ceases, and the heart beats become imperceptible. The whole period occupied in a case recorded was from fifteen to twenty seconds. As to treatment, prevention is better than cure. Clamp all veins before dividing them in dangerous regions. If the accident happens, inspiration can not occur in a wet wound; so, if the opening can not be seen, fill the wound with water or any lotion at hand, as recommended by Treves. Use vigorous and persistent artificial respiration and injection of cardiac stimulants. If immediate syncope does not occur and distress continues, bleeding to relieve the right side of the heart will do most good. Bégonin (*Semaine médicale,* 1898) has recommended aspiration of the right ventricle by capillary puncture. Tracheotomy and inflation of the lungs do not seem to possess any advantage over artificial respiration.

A Fatal Case of Cocaine Poisoning. By Henry Ernest Knight, M. D.

Notes on Two Cases of Poisoning from Stramonium. By Duncan Gray Newton, M. B.

Fracture through the Surgical Neck of the Scapula. By John Brown, M. D.—This condition is rare and its existence has been disputed, but undoubted cases are on record, notably one by Spence which was proved post mortem. In the present case the arm was an inch longer than its fellow and there was flattening over the deltoid with marked prominence of the acromion. By pulling the elbow upward the deformity could be made to disappear and at the same time rotation of the arm elicited distinct crepitus. The deformity recurred at once when the arm was allowed to hang. Pressure applied over the coracoid process caused pain with the reappearance of the deformity. On fixing the body of the scapula the coracoid process could be moved independently of it. Under ether the parts were accurately adjusted and the upper arm strapped to the side over a firm pad in the axilla. The elbow was then well supported under the elbow and across the opposite shoulder first by strapping, next by a flannel bandage, and finally by a plaster bandage. Union was perfect.

The Medical Chronicle, May, 1900.

Widely Conducted Cardiac Murmurs. By Dr. E. M. Brockbank.—The author discusses the conduction of cardiac murmurs, and states that the accidental discovery in one case that a mitral murmur was audible over the lumbar vertebræ set him to examine patients with heart disease. He has collected notes of twenty-four cases—three in children from eleven to twelve years old, the rest in adults from nineteen to forty-seven—in which a murmur of a soft blowing "hoo-o-o" character, arising generally at the mitral valve, but occasionally at the aortic valve, was heard over the cardiac area, and in some, or all, of the following situations, namely, over the spleen, liver, the whole of the chest anteriorly or posteriorly, the carotid arteries and the abdominal aorta (without any pressure from the stethoscope), the vertebral column from the fourth dorsal vertebra to the sacrum, and over the right and left kidney regions. Of the cases recorded, eight were subsequently the subjects of autopsy. Of these, six were cases of ulcerative endocarditis and two of mitral stenosis. Of twelve cases passed from view, two or three were probably suffering from ulcerative endocarditis and the rest from chronic endocarditis, one or two of the aortic, the rest of the mitral valve. Four cases under observation are all of mitral incompetence. The only explanation of this wide conduction of murmurs that occurs to the author is that the sound is carried along the aorta and large vessels and transmitted to the surface over the liver, spleen, and kidneys by the intervening tissues, and over the upper part of the chest by the resonant qualities of the thorax. The author has never met with them in healthy or merely anæmic subjects, or in any case without a cardiac lesion, though he has frequently sought for them. Their occurrence must be remembered in examining cases of supposed aneurysm or obstruction of the thoracic or abdominal aorta.

The Enucleation of Interstitial Fibromata by Cervico-vaginal Hysterotomy. By Louis Dartigues, M. D.—M. Ségond's method of removing fibromata is detailed in the report of a case. The uterus being drawn down, the lips were separated by a volsella forceps applied to each. The sides of the cervix up to the vaginal vault were then incised and the two halves of the cervix separated. Morcellation of the tumor by a volsella was practised (M. Ségond usually employs a corkscrew), and the tumor removed piecemeal till the capsule could be enucleated. The uterus was examined bimanually, swabbed out with bichloride solution, and loosely packed with iodoform gauze; the cervical incisions were sewed up with catgut and the vagina packed with gauze. No severe hæmorrhage and no inversion of the uterine wall took place.

Immunity to Diphtheritic Infection, and Reinfection after the Use of Antitoxine. By R. W. Marsden, M. D.—The author records four cases from the Monsall Fever Hospital of laryngeal diphtheria in which tracheotomy was performed and antitoxine injected. Steady and satisfactory progress continued in the first two cases for three weeks, and in the last two for five weeks, when suddenly an accession of identical symptoms supervened. With the exception of Case II, in which a second tracheotomy was called for, the administration of a second injection of antitoxine promptly cut the attack short. While reinfection from without was of course possible, the author gives good reasons for considering it highly improbable, and his view is that when the immunity afforded by the first dose of antitoxine is spent, the bacilli may again flourish and give clinical evidence of their presence. He considers that reinjection of antitoxine should be performed immediately upon the supervention of "croupiness" or signs of early laryngeal stridor.

A Case of Pneumothorax Complicating Whooping Cough. By Francis Villy, M. D.

Two Cases of Intestinal Obstruction due to Peritoneal Bands. By J. E. Platt, M. S., F. R. C. S.

The Edinburgh Medical Journal, May, 1900.

Points of Practical Interest in Surgical Gynæcology. I. Some Points in Gynæcological Asepsis. By Dr. H. Macnaughton Jones.—The author considers that "the gradual evolution of gynæcology, in its application to diseases of the sexual organs of women, rests on the triple basis of anæsthesia, asepsis, and hæmostasis." As to anæsthesia, the author has had the greatest satisfaction from gas and ether. At Schauta's clinic in Vienna there is used "an admirable mixture of chloroform, 1 part; ether petrolei, 1 part; sulphuric ether, 2 parts." This is given freely on the ordinary chloroform cap. Dr. Jones's practice, however, of selecting a competent anæsthetist and never interfering with him, deserves great credit. As to asepsis, it is not infrequently the result of hæmorrhage. Hurry should not be mistaken for celerity in operating. Hæmorrhage should be always fully checked, not only at the time, but preventively also, by the ligation of any pouting mouth of a vessel in a pedicle or elsewhere, and the refusal to cover over any surface or area in which there is still oozing—even though the operation has to be prolonged a little. "The days of suckers, clamps, and drainage tubes are practically over," the conditions really necessitating their employment being very exceptional.

Among the usual details of preparation the author insists on the complete sterilization of the rectum and vagina by aperients and lavage with antiseptic solutions for at least forty-eight hours prior to operating, and the avoidance of nailbrushes that have been previously and indiscriminately employed. "No operation of any importance should be commenced without the sterilized needle for submammary injection of artificial serum being in readiness, together with the sterilized saline solution, so proportioned as to make, with the addition of sterilized warm water, the strength of 7 in 1,000 at a temperature of 100° F. to allow for cooling to 90° F."

"It will be generally agreed that it is safer to drain in any of the following circumstances: *a.* When pus has escaped into the peritoneal cavity. *b.* When there has been considerable hæmorrhage difficult to arrest, and in which it has been necessary to use the aseptic tampon to restrain it, and when there is the consequent danger of the formation of clots. *c.* In the presence of septic complications, where there has been an escape of septic fluids, and, as is frequently the case in such instances, where extensive adhesions have necessitated prolonged stripping of tumors or sacs, with consequent more tedious manipulation. *d.* Drainage is indicated in certain cases of enucleation of myomata—in pan-hysterectomy for myoma, when there is the complication of pus tubes, or suppurating cysts of the ovary; when there has been hæmatosalpinx or blood cysts of the ovary or mesosalpinx which may have been ruptured; in pan-hysterectomy for cancer; in some cases of supravaginal hysterectomy, with complications similar to those just mentioned, and where we are in doubt as to the infectivity of the cervical stump and canal. Here the plan may be adopted of dividing the cervix, covering each separate pedicle, and passing the iodoform drain between the two; in sanguineous and suppurative ovarian cystomata; in colloid multilocular cystoma in which there is ascites present, and where there has been rupture of the cysts with escape of the contents into the peritoneal cavity. Drainage is necessary in colpotomy performed for pyosalpinx or hydrosalpinx, hæmatocele, and other cases of ectopic gestation, and in suppurating cysts of the ovary or mesosalpinx. Drainage is indicated in vaginal operations and in cœliotomy, when there have been wounds of the bladder or bowel."

On the Mechanism of the Intestinal Movements, and on the Reversal of the Intestine. By J. L. Bunch, M. D.

The Clinical Varieties of Visual Aphasia. By W. Elder, M. D.

Some Practical Observations on the Early Diagnosis of Cancer of the Stomach. By Carstairs Douglas, M. D. —There are three factors in diagnosis: 1. The ætiological. 2. The symptomatic. 3. The objective. But little information of real value can be obtained from the ætiological. Incidentally the author considers that the development of gastric malignant disease from food errors must be negatived.

"In summarizing the leading symptomatic indications, we may note that: 1. Nausea, feeble digestion, and vomiting generally precede hæmatemesis. 2. Pain is often present early, is frequently constant in character, is aggravated by the ingestion of food, and is not relieved by vomiting. 3. Loss of flesh, with concomitant loss of bodily vigor, often forms an early and striking symptom. 4. Hæmorrhage, when it does occur, is usually scanty and irregular, and the blood is much altered. 5. Appetite rapidly fails, the patient often losing all desire for food, and showing no sense of hunger, such as is present so frequently in gastric ulcer, where the patient wishes to eat but fears to do so."

The Objective Signs.—Cachexy is usually present, and notable anæmia. The red cells may be reduced to 3,000,000 per cubic millimetre, or below this; the hæmoglobin to form twenty-five to thirty per cent., while the leucocytes show a normal count, or may be increased. Inspection may detect the presence of the peristaltic wave, which is always suspicious. Palpation, both with the hand flat on the surface and by "dipping," may enable us to detect a tumor. It should be practised under anæsthesia, and the bowels should have been previously well emptied, care being taken by the physician to be sure that the measures taken *have* cleared the bowel. Percussion has but little value, though in disease of the cardiac orifice an impairment of note over the lower part of the sternum, especially close to the left border, may suggest a tumor. Auscultation is of little use, but auscultatory percussion may be helpful as a means of mapping out the stomach, though it can give little positive information. Chemical examination of the contents should be a routine measure. Vomited matter or the siphoning of a test meal (two ounces of bread and a glass of water) an hour after ingestion may be employed. In the large majority of cases of gastric cancer, free hydrochloric acid is absent a couple of hours after a test meal, while often lactic acid takes its place. Finally, if a stomach case fails to improve under general and dietetic treatment, suspicion should be aroused and an exploratory incision sought. One of two good results is possible: the finding of a tumor amenable to operative treatment, either palliative or curative, or the inexplicable result of relief which sometimes follows from a simple incision.

Observations on the Excretion of Nitrogen in Rheumatoid Arthritis. By William Bain, M. D.

Optic Neuritis in Children. A Clinical Note. By Leslie Buchanan, M. B.—The author calls attention to the frequent association in children of optic neuritis with enlarged glands, not necessarily, though often, tuberculous. The author has come to the conclusion that the cause of the neuritis is often meningitis, tuberculous in origin and mild in type, and that "unless another distinct cause can be found, if either atrophy or inflammation of both optic nerves be seen in a child or young person, the presence in the neck of enlarged glands, even of very moderate size, is an indication that there may have been, or may be, a meningitis or a tubercular growth in the brain."

Miscellaneous.

Sodium Saccharate for Physiological Saline Solution.—A. Schuecking (*Therapeutische Monatsheft*, December, 1899; *Journal of the American Medical Association*, March 31st) says that infusion of a solution of sodium saccharate neutralizes or in some way renders harmless the accumulating carbon dioxide in the blood, which he considers the cause of the accidents in uræmic and septic conditions. He is now testing it internally, and has already established that it has a tonic effect on the heart, and will even make the isolated heart of a frog commence to pulsate anew sixteen hours after it has stopped beating. He finds a 0.03 per cent. solution of sodium saccharate with 0.6 per cent. sodium chloride the most effective combination. He relates a number of observations in which immediate relief and prompt recovery followed the subcutaneous injection of two hundred and fifty grammes, after the same amount of salt solution had been injected without effect.

The Climate of Tucson, Arizona.—Olcott (*St. Louis Courier of Medicine*, February) says that the chief benefits realized in this climate are in pulmonary and bronchial affections. Persons with severe cardiac affections should not come, as even the moderate altitude of this town is not favorable to such cases. Even far-advanced cases of tuberculosis often do surprisingly well here, and, while they can not expect a cure, live in comparative comfort and find relief from many distressing symptoms. Most tuberculous cases are sent from home only for the winter season; this, the author thinks, is a mistake. As soon as a diagnosis of tuberculosis is made, if the conditions are such as to render a change of climate advisable and possible, he believes that they should be sent somewhere in the arid region. While some do well in the hot summer of this climate, even better than in winter, there are more who do not stand the heat well; for these the cooler summer of New Mexico or northern Arizona would prove more beneficial. The summer in the mountains close around Tucson can not be surpassed.

Disease of the Maxillary Antrum Successfully Treated through a Root Canal.—C. R. Marshall (*Ohio Dental Journal*, April) says that a pulp died in his left superior molar and he was seized with severe rhinitis and profuse mucopurulent discharge of an offensive nature. The drill was applied and had scarcely got in motion when it suddenly plunged through a mere shell of amalgam, with which the crown of the tooth had been capped, giving exit to a small quantity of foul-smelling pus. Further examination revealed the fact that one canal was freely open and communicated with the antrum, into which a slender probe could be readily passed, while the two remaining canals contained live pulp. The latter were cleared of their contents and filled, and appropriate treatment was begun in the open canal.

The discharge from the nostril immediately ceased, but promptly returned whenever medicated cotton or any other impediment to free drainage was placed in the canal; the prospect of saving the tooth seemed to be as remote as ever.

The author found that he could readily pass the needle of an ordinary hypodermic syringe well up through the root canal, and by that means was enabled to thoroughly wash out the antrum, first with dilute hydrogen dioxide and next with an antiseptic solution. Perfect drainage existed through the nasal foramen, by which route all detritus came away freely. In a few days he discovered that it was no longer possible to force fluids into the antrum, as the sinus had evidently closed. After that occurred the nasal discharge never again reappeared. The next step was to check the formation of pus at the apex of the diseased root; to this end various antiseptic solutions were persistently employed for several weeks, but whenever applied the peroxide test revealed the presence of pus.

The author at once began using euthymol, diluted with three parts of sterile water, for injecting the root canal, keeping the pulp chamber constantly packed with cotton saturated with euformol. As the latter contains formaldehyde, he thought this volatile substance would perhaps penetrate farther than fluids into the apical pus cavity, and, permeating the entire canal, would tend to keep it aseptic. These applications were continued for several weeks, until at last the action of euthymol and euformol proved positively germicidal and curative, for all evidences of the presence of pus had disappeared under their use. The canal was then filled with a mixture of iodoform and some excipient, the nature of which he does not recall, and the pulp chamber was packed with cement. Several months having since elapsed, the author feels well satisfied with the result, for he has escaped what might have proved a very serious condition, and, moreover, has now a useful tooth.

Vascular Changes in the Eye of Import in General Diseases.—Dr. G. E. de Schweinitz (*Maryland Medical Journal*, June) summarizes his address before the Medical and Chirurgical Faculty of Maryland as follows: 1. Flitting conjunctivo-episcleral congestions may be the only symptom of masked gout. 2. Such congestions, may be the prodromes of later gouty manifestations in the eye or elsewhere in the body, but also (and most importantly) may be the forerunners, associates, or alternates of retinal-vessel changes, which, in their turn, are the indications of general arterio-sclerosis of serious prognostic import. 3. The same conclusion applies to recurring subconjunctival and recurring subcutaneous palpebral hæmorrhages, which seem, however, to be related especially to the chronic form of nephritis, exactly as is the classical retinitis. 4. Inflammation, hæmorrhage, and œdema, with exudation, are not necessarily the ophthalmoscopic signs of general arterial disease or of its special localization in certain organs—for example, the kidney. It may be manifested with perhaps equal frequency by alterations in the walls of the retinal arteries and changes in the course and calibre of the veins, together with signs of mechanical pressure where veins and arteries cross. 5. These retinal-vessel changes may be present when ordinary physical examination does not reveal the signs of endarterial change in the surface vessels of the body generally.

Letters to the Editor.

HOSPITALS AS CONSULTANTS.

72 Lexington Avenue, New York, *June 4, 1900.*

To the Editor of the New York Medical Journal:

Sir: In my work as a dispensary surgeon I frequently am confronted by patients who are being treated either at another hospital or else by an outside doctor. These come in to see if the "treatment is all right." Now, they don't come to consult me, but to consult the hospital. Every hospital has two classes which go forth from its portals: one great class which goes out to sing its praises and hand down its greatness as a family heritage to its children's children and another contingent which wishes that the Inferno inscription were placed above its gates. By a little questioning I am enabled to get at the truth of the matter, and whether I look to see if the "treatment is all right" depends on circumstances. If I remove the dressings, I return them as nearly as possible to the condition they were in before, and give the patient, in addition, some wholesome advice. Thus far I have never come across a case in which I could not say "Go back to your doctor; you are being treated just as I (the hospital) would do it." When I do meet with such a condition after an inquiry, I shall make it my business to inform the doctor, whoever he may be, of the patient's action and my conclusion.

An experience of my own within the past week is a fact in point. Some three weeks ago I was called to see a boy of fourteen who had had his foot jammed in some planking. In the extrication of the foot his leg became twisted and he sustained a green-stick fracture in the lower third of the right tibia. I saw him two days after the accident. His lower leg and ankle were slightly swollen and painful, he hobbling about with the aid of a cane. On account of the tenderness, to determine the diagnosis, he was put under an anæsthetic, and during the manipulations the sprung bone snapped into place. A wet dressing and padded lateral splints were applied, the whole was tied in a pillow in lieu of a fracture box, and the boy was kept in bed. Three days after, inflammation having subsided, I incased the leg and ankle in plaster. This was kept on for five or six days, the boy up and about, using a stick, but spending the days mostly with his leg on a chair. At the end of this time, the cast being loosened, it was removed, a new one was applied, and the boy was allowed to walk without any pain or discomfort being experienced. I ordered him to come to me at my office the next day. As he did not come, I called to learn the cause. One of the household informed me that he had been taken to a hospital in a cab, that the "plaster cast had been removed and something been pulled back into place, and the boy would soon be all right without any bad effects." The father of the boy (an extreme type of an excitable race) the day before had called on me, and I stated that it was possible, owing to the conditions when the boy was first seen, there might be some stiffness of the ankle for a time resulting. After some further conversation the father went away apparently satisfied.

Calling at the hospital in question, I learned the facts. The boy was in bed. The resident told me he would keep him under observation a few days and then let him go. The interne (the hospital) gave me a statement verifying my diagnosis and my treatment. This I sent to those most interested. To the father I sent a letter of resignation and a bill. The hospital which received the patient is a competitor of mine, and as such I think should receive adequate compensation; it played the rôle of a consultant and as such should be recompensed.

There is not such an arrant abuse of hospital privileges in this city as many of our medical brethren from afar, who seem to do much of the writing on the subject, affirm. The conditions here in New York are different, such as the profession outside the city know not of. Relief, if such is needed, can never come from legislation enacted at Albany. It may be obtained by a little closer study into the family history, and by a rule of the medical board of managers that a hospital which brings renown to a doctor should be rewarded, and where the doctor adds to the reputation of the hospital he likewise should be benefited. I mean by this that a hospital should have a fee chargeable where it, determined by a careful investigation of the circumstances, enacted the rôle of a consultant. The resident physician or surgeon is to find out the particulars in each instance. His chief can then decide the merits of the case, and thus many of our younger doctors will be enabled to keep track of a certain portion of their patients, and the resident will be gaining valuable lessons in the study of human nature. **Frederic Griffith, M. D.**

THE LESSONS OF MILITARY SURGERY TO THE EMERGENCY SURGEON.

Jermyn, Pa., *May 28, 1900.*

To the Editor of the New York Medical Journal:

Sir: I should like to express my appreciation through the *Journal* of Dr. William H. Wilson's article The Instruction of the Hospital Corps, United States Army, for it comes just at a time when I personally need such instruction. I have been located for the past twelve years in the anthracite coal region, where we have a great many accidents. These accidents often occur one or two miles underground, and the injured man has either to be transported in a slow-moving mule car or carried by hand on a litter up and down inclines, winding in and out over rough places. Even when the surface is reached he has probably to be further transported in an ambulance to his home or to the hospital, over several miles of rough, rocky mountain road. His wounds have been probably bound up, moreover, with a piece of dust-laden, oil-saturated coat sleeve, and tobacco applied to stop the flow of blood; so you see that by the time medical aid has reached him he has lost a great amount of blood, his jagged wound is dirty, he is suffering from shock, and his vital forces are weakened, making his recovery tedious if not doubtful. Or, if he has merely sustained a simple fracture, he has been so shaken up that the fragments of bone have torn and lacerated the surrounding tissues, thus adding to the shock, increasing the internal bleeding, and sometimes making a compound out of a simple fracture. This condition I have seen again and again, and I have known several cases in which men have bled to death from moderately severe wounds through not receiving intelligent and prompt aid. So, some three months ago, I organized a first-aid society among the miners of our colliery consisting of twenty-five men, five men for each gangway of the mine. Each man is provided with a first-aid packet and instructed how to use it; but, as the text-books on surgery devote but little attention to this subject, Dr. Wilson's article came at a very opportune time.

M. J. Shields, M. D.,
Visiting Surgeon, Carbondale Emergency Hospital.

HATPINS IN THE MALE URETHRA.

New York, *May 20, 1900.*

To the Editor of the New York Medical Journal:

Sir: In response to your editorial comment of the 19th inst., p. 779, regarding "the purpose of introducing hatpins into the urethra," I beg leave to state that in a case reported by me in the *Philadelphia Medical Journal* of May 6, 1899, the patient in question, having had gonorrhœa with consecutive stricture, had been in the habit of introducing a hatpin, head foremost, into his urethra whenever urination became difficult. He had been doing this for nearly ten years when, finally, after a night of intoxication, the pin slipped from his tremulous fingers into the bladder.

The pin point could be felt right under the skin at about a quarter of an inch from the junction of the scrotum and penis. I extracted the pin through an external incision, which healed rapidly without further trouble.

The pin was seven inches and a half in length, its head about three eighths of an inch in diameter. It was quite black and rusty, especially at the insertion of the shaft into its head.

No septic infection followed, although no precautions were taken to prevent it, thus tending to show that the bladder is well capable of taking care of itself if not interfered with by the physician.

H. B. Sheffield, M. D.

THE ACTING ASSISTANT SURGEONS OF THE CIVIL WAR.

Blue Mound, Ill., *June 4, 1900.*

To the Editor of the New York Medical Journal:

Sir: I have just read the brief of a bill before Congress for the relief of acting assistant surgeons, United States Army, published in your issue of May 26th.

I am strongly in favor of the bill, provided they will include the acting assistant surgeons of the civil war, many of whom served in the field and endured all the hardships endured by regimental surgeons, or more, and were subject to the same orders.

It seems to me that they should be entitled to all the honors and pensions that any soldiers have.

If they will include them in this bill, I am ready to work for it.

I was myself an acting assistant surgeon, but was also a cadet in the regular army. I am a member of the G. A. R., but will do all I can to further the interests of the acting assistant surgeons, provided they include those of the civil war.

J. G. Harvey, M. D.

Book Notices.

The International Text-book of Surgery. By American and British authors. Edited by J. COLLINS WARREN, M. D., LL. D., Professor of Surgery in Harvard Medical School, etc., and A. PEARCE GOULD, M. S., F. R. C. S., Lecturer on Practical Surgery and Teacher of Operative Surgery, Middlesex Hospital Medical School, etc. Volume II. Regional Surgery. With Four Hundred and Seventy-one Illustrations in the Text and Eight Full-page Plates in Colors. Philadelphia: W. B. Saunders, 1900. Pp. 9 to 1072. [Price, $5.]

THE second volume opens with a most interesting chapter on the surgery of the mouth and tongue. Congenital deformities are then made clear to the student by the writer's careful consideration of the arrests in fœtal development, and this subject is followed by those of the results of injury and new growths, both benign and malignant. Under the head of epithelioma of the lip, we should perhaps be more radical, and advise an actual inspection of the glands beneath the jaw in every case, not depending on palpation through the skin, which is often deceptive.

The common error of regarding an epulis as a distinctive condition is corrected in the second chapter. The term simply expresses the situation and not the pathological condition to be found. Under it may be found nearly all forms of both benign and malignant growths. A full consideration of the surgery of the breast is given in the seventh chapter. In it the author has spared no pains in demonstrating the advantages of an early and complete operation. A description of the writer's method follows, which is perhaps even more radical than the operation devised by Halsted. The chapter on the surgery of the stomach and intestines by McCosh, that on hernia by Bull, and that on appendicular inflammation by McBurney are especially interesting and attractive.

There are thirty-one contributors, all men well known to the profession as fully masters of their selected subjects.

We have already spoken in highest terms of volume i, and we feel fully justified in doing the same for this volume. It has been our pleasure of late to review a number of good surgeries, and we can safely say that nothing better has come to our notice, and few quite so good. We predict for the publishers a most successful return for their efforts.

Atlas von Beleuchtungsbildern des Trommelfells. Von Dr. KURD BÜRKNER, a. o. Professor der Medizin und Direktor der Universitäts-Poliklinik für Ohrenkrankheiten zu Göttingen. XIV Tafeln, chromolithographirt nach den Originalskizzen des Verfassers von Ad. Giltsch, in Jena. Dritte, verbesserte und durch eine Anleitung zur Ohrenspiegel-Untersuchung vermehrte Auflage. Jena: Gustav Fischer, 1900. Pp. 20.

AFTER a few words on methods of examination, illumination, etc., the author describes the appearance of the membrana tympani as seen in health and disease. His ideas are illustrated by the plates, on each of which are six representations of the membrane in various pathological conditions. Each representation has a diameter of three eighths of an inch, centred on a black ground an inch square. The pictures are in colors and executed with remarkable clearness and fidelity to fact as seen in clinical work. We unhesitatingly commend the *Atlas* to all students of otology.

Leçons sur les suppurations de l'oreille moyenne et des cavités accessoires des fosses nasales et leurs complications intracraniennes. Par le Dr. HENRY LUC, Ancien interne des hôpitaux de Paris. Avec 28 figures intercalées dans le texte. Paris: J.-B. Baillière et fils, 1900. Pp. x–500. [Prix, 10 fr.]

WHILE nothing new is set forth in this volume, it will serve as a useful guide to any one desiring to follow the latest advances in these particular topics in otology and rhinology. Marginal subtitles render the consultation of the work easy. The author has long been known as an industrious and conscientious clinician. In this book he goes into full details as to operative methods, and presents a very vivid picture of the diseases included under the title.

BOOKS, ETC., RECEIVED.

Annual and Analytical Cyclopædia of Practical Medicine. By Charles E. de M. Sajous, M. D., and One Hundred Associate Editors. Assisted by Corresponding Editors, Collaborators, and Correspondents. Illustrated with Chromo-lithographs, Engravings, and Maps. Volume V. The F. A. Davis Company, 1900. Pp. viii–662.

A Manual of Obstetrical Technique, as Applied to Private Practice. With a Chapter on Abortion, Premature Labor, and Curettage. By Joseph Brown Cooke, M. D., Late Attending Physician at St. Mary's Free Hospital for Children, etc. Philadelphia and London: J. B. Lippincott Company, 1900. Pp. 5 to 109.

A Manual of Medicine. Edited by W. H. Allchin, M. D. Lond., F. R. C. P., F. R. S. E., Senior Physician on Clinical Medicine, Westminster Hospital, etc. Volume I. General Diseases. Diseases Excited by Atmospheric Influences. The Infections. New York and London: The Macmillan Company, 1900. Pp. x–442.

Contributions from the William Pepper Laboratory of Clinical Medicine. University of Pennsylvania. Philadelphia, 1900. Pp. 5–17 to 479.

Transactions of the Chicago Pathological Society, from May, 1897, to June, 1899. Volume III.

Transactions of the Associated Physicians of Long Island. June, 1898, to January, 1900. Volume I.

Miscellany.

Rape.—Dr. G. V. Poore (*Clinical Journal*, April 25th) says: "The definition of rape is 'the carnal knowledge of a woman forcibly and against her will.' Now first of all we ask 'What is force?' The law lays it down strictly that 'force' may be moral force. For instance, if a man were to threaten a woman that he would bring her into trouble with her mistress or the establishment she was working in, or make it difficult for her to get her livelihood, that is force in the eyes of the law. It is very important to remember that moral force is quite as strong as physical force. The next point is 'What is carnal knowledge?' There again the law has laid it down very strictly indeed, that if the vulva be touched by the penis that is carnal knowledge. The act of insertion is not necessary, the act of emission is not necessary; so that you must remember that, technically and legally, if in obedience to moral force or a threat the penis touches the vulva that is rape. I would emphasize the fact that a rape of this character leaves no physical traces behind, and between a rape which leaves no physical traces at all and that which leaves changes of a gross kind there is every gradation. . . . In cases of rape, when you are called to such a case, note the time. There is a law in Scotland, not in England, that accusations of rape must be brought within three days. Of course there are many cases of rape which are a little like what Byron describes—

> "'A little while she strove, and much repented,
> And, swearing I will ne'er consent, consented.'

That is not rape, and it is very important to remember that. There must be justice, and I hold very strongly that a woman may rape a man as much as a man may rape a woman. A woman may rape a boy (morally, not legally), and that also has happened not seldom. A girl, having consented to the act, recognizes later that she is pregnant, and to get out of her trouble she says she was not a consenting party, and that there was force employed. In the history of rape such cases are not at all uncommon."

Old-time Specialists.—The *Presse médicale* for April 25th quotes the following from Herodotus to prove that specialists existed among the ancient Egyptians: "Medicine among them is subject to division of labor; each physician occupying himself solely with one disease and not with many. Everywhere doctors abound; some for the eyes, others for the head, for the teeth, for the abdomen, and for internal diseases respectively."

How to Overcome Habit.—The *Medical Herald* for June culls the following from the *Stylus:* "Somebody has been trying his hand on the word 'habit,' and he works it out thus: 'Habit' is hard to overcome. If you take off the first letter, it does not change 'a bit.' If you take off another, you still have a 'bit' left. If you take off still another, the whole of 'it' remains. You take off still another and it is—no 'it' is totally used up. All of which goes to show that if you wish to get rid of habit, you must throw it off altogether and at once; it can not be done a part at a time."

An "Absent-minded Beggar."—The *Canadian Journal of Medicine and Surgery* for June tells the following story of Sir William MacCormac, the president of the Royal College of Surgeons: Often, to save time when studying in his laboratory, he used to have a light lunch served there. Once his assistant heard him sigh heavily, and, looking up, saw the doctor glaring at two glass receptacles on his table. "What is the matter, doctor?" he was asked. "Nothing in particular," was the reply; "only I am uncertain whether I drank the beef tea or that compound I have been working on."

Travel and Thirst.—The English law allows, indeed enjoins, the service of liquid refreshments on application at public hostelries to all *bona fide* travelers, in the hours during which such establishments are compulsorily closed by law. The act of Parliament defines a *bona fide* traveler as one who is three miles away from his home, or from his temporary residence of the preceding night. Various methods of evasion are oftentimes practised, and not infrequently cases come into court. According to the *New York Times* for June 1st, citing the London *News*, a magistrate at Norwich, commenting on such a case, defined the difference between a "traveler" and a "bona fide traveler" as lying in the fact that "the one is thirsty because he travels and the other travels because he is thirsty."

Kava as a Drink in Samoa.—Mr. Curtis G. Lloyd (*Pharmaceutical Review*, June) writes of the use of kava, the cultivated root of the *Piper methysticum*, to make a drink largely used by the Samoan Islanders. The dried roots are preferred, though green roots may be used. The root is dried and powdered between two bowlders. It is then put into a kava bowl, and the Taupou girl, or village virgin, having washed her hands, pours water on it and thoroughly stirs it with her hands for five or ten minutes. Then, taking the fibre of the cocoanut husk, or the bark fibre of the fan tree, *Hibiscus tiliaceus*, she strains the powdered root out of the liquid and the kava is ready. Kava looks and tastes, says Mr. Lloyd, something like soapy water. If a person is hot and thirsty it will quench thirst as water will not. Diseased eyes have been attributed to the prolonged use of kava. That is the only injurious effect. It has been said that taken "to excess it will make the legs 'drunk,' though not the brain." But the author has not seen or experienced this effect in any instance. He does not consider that it can be classed among intoxicating drinks any more than tea or coffee can. The statement commonly made that the kava root is prepared by mastication Mr. Lloyd holds to be incorrect so far as the present custom in Samoa is concerned, though it may possibly have been the practice aforetime.

The Retention of Murphy's Button.—Dr. Tuttle, in a discussion at the Atlantic City meeting of the American Medical Association, mentioned five cases in which the button appeared not to have been passed by the rectum, and in none of them had harm resulted.

The Properties of Odor and Taste.—The *Lancet* for May 26th asks Why is Sugar Sweet? It says: "The chemistry of sugar gives perhaps a bare hint in the way of explanation, but sweetness is undoubtedly a condition where constitution or structure rather than percentage composition is responsible for a specific physical property. Smell is a related subject and at present we can not tell what determines the characteristic smell of many familiar substances. The chemical composition of turpentine or oil of roses is identical with that of a good many other essential oils—that is to say, the percentage and kind of elements in these bodies is the same; but no one would maintain for a moment that turpentine or oil of cloves is as pleasant as oil of roses. We are dealing here with a question which most probably relates to the arrangement of the atoms in the molecule. Doubtless a difference in the relative position of atoms determines a great difference in physical character. In other words, the elementary materials are the same, but they are placed, so to speak, in such a way in different bodies having the same composition as to present manifold shapes. A given structure, for example, may contain a certain number of bricks and present an ugly exterior, but the same number of bricks may be contained in another structure which may present an artistic and pleasing appearance. Sugar is not the only substance known to us possessing sweetness, but it is the only known naturally occurring substance which possesses this characteristic. Therefore it is not uncommonly thought that when a substance is sweet it must contain sugar. Such a notion, of course, is quite erroneous."

The Boer Surgeons and the Red Cross.—The special correspondent at Cape Town of the *British Medical Journal,* in its issue for May 12th, says that he was talking the other day to a well-educated prisoner, a pure Transvaaler, who told him that he fully expected the kindest treatment, and that he had been glad when he became sick that he fell into the hands of the English, as the arrangements on his own side were shockingly bad. He added that unless a man were under the care of one of the foreign ambulances there was very little chance of recovering from anything bad. The actual Boer medical arrangements worked, he said, fairly well at the beginning of the war, but they had utterly broken down later. There was no system at all, and not only a deficiency of doctors, but those doctors appeared "just to wander about as they liked," so that sometimes there were two or three where they were not wanted, and none where they were. The correspondent continues: "Then, again, he admitted to me that it was not at all an uncommon thing for the doctors to take up a rifle and fight. He mentioned this, not apparently with the least idea of its impropriety from a Red Cross point of view, but as a grievance on account of the doctor being wanted to do his own work."

Dentists and the Thirteenth International Medical Congress.—The executive committee announces that dentists who are not doctors of medicine, but who hold a French or foreign state diploma, may become members of the Section in Stomatology.

The Harlem Medical Association.—On June 11th officers for the ensuing year were elected as follows: President, Dr. Montrose R. Richardson; vice-president, Dr. Joseph E. Lumbard; secretary, Dr. William H. Luckett; treasurer, Dr. William F. Farrell; trustees, Dr. Henry W. Mooney, Dr. David Franklin, and Dr. M. C. O'Brien.

The Massachusetts Medical Society.—At a meeting of the councilors held on June 12th officers were elected as follows: President, Dr. Frank W. Draper, of Boston; vice-president, Dr. William W. Eaton, of Danvers; treasurer, Dr. Edward M. Buckingham, of Boston; corresponding secretary, Dr. Charles W. Swan, of Brookline; recording secretary, Dr. Frank W. Goss, of Boston; librarian, Dr. Edward H. Brigham, of Brookline; orator, Dr. Charles F. Folsom, of Boston.

The International Directory of Laryngologists and Otologists.—The following appeared in the April number of the *Journal of Laryngology, Rhinology, and Otology,* of London: "An appendix to the *International Directory of Laryngologists and Otologists,* compiled by Mr. Richard Lake, is in course of preparation. In it will be found corrections of names and addresses already given, an additional list of names and addresses received since publication, and an obituary list. . . . Considerable additions have been obtained for the foreign list, which will materially add to its value and completeness. The decision of the editors of the *Journal of Laryngology, Rhinology, and Otology,* under whose auspices the *Directory* is published, to allow no name to be inserted in the British list for which sanction has not been given in writing, at once explains some omissions and criticisms. The editors, while desirous of making the *Directory* as complete as possible, consider it best to adhere to this course. It is therefore hoped that all engaged in the practice of laryngology, rhinology, and otology will assist as far as possible in making this useful work complete," by sending in their names and addresses to the editor of the *International Directory of Laryngologists and Otologists,* 129, Shaftesbury Avenue, W. C.

The Thirteenth International Medical Congress.—We learn from a circular issued by the French executive committee that the time for receiving titles of communications for insertion in the programme expired on May 31st, but that subscriptions will be received up to July 15th. Subscribers should send their visiting cards and a postal order for 25 francs to Dr. Duflocq, 21 rue de l'École de médecine, Paris, and indicate which section they wish to join.

The Association of American Medical Colleges held a meeting in Atlantic City on June 4th and 5th at which several educational papers were read and discussed. Fifty-six colleges were represented. Such amendments as would exclude "sun-down" medical colleges were adopted, to take effect in July, 1901. Dr. Albert R. Baker, of Cleveland, was elected president, and Dr. Thomas H. Hawkins, of Denver, and Dr. W. H. Earles, of Milwaukee, vice-presidents. Dr. Parks Ritchie, Dr. W. W. Keen, and Dr. J. M. Dodson were added to the judicial council. The Cooper Medical College, of San Francisco, the Medical Department of the University of Kansas, and the American Medical Missionary College, of Chicago, were elected to membership. A committee was appointed at the request of the federation of State examining boards to cooperate with a similar committee appointed by them to consider common interests. This committee consisted of Dr. W. J. Holland, Dr. Dudley S. Reynolds, Dr. W. E. Quine, Dr. W. J. Means, and Dr. Parks Ritchie. The papers and proceedings of the association are published in the *Bulletin of the American Academy of Medicine.*

St. Helena as a Place of Military Confinement.—We quote the following from the *Polyclinic* for May: "From the health point of view probably no place in the world could be found more suitable than St. Helena for the confinement of our prisoners of war. There is not in the whole island an insalubrious spot. The common English gorse (*Ulex Europeus*), a good judge of climate, grows abundantly. The temperature is remarkably equable, and although the island is so much nearer the equator than is the cape, it is yet very much cooler. The winters are much warmer than those of England, but the summer heat is rarely so great. The whole of the island is much above the level of the sea and always breezy; even Jamestown, its harbor, is four hundred feet, while the greater part of the plateau is little under a thousand, and much of it yet higher. The water supply (from 160 wells) is excellent, and almost all kinds of European fruits and vegetables are grown. Should the prisoners desire employment, there is much land needing reclamation and abundant scope for gardening. As the island lies on the ocean highway, there should be no difficulty in supplying abundance of mutton, coffee, and other Boer necessaries."

Original Communications.

INFLUENZA IN CHILDREN.

A CONTRIBUTION TO THE STUDY OF INFLUENZA IN CHILDREN, WITH SPECIAL REFERENCE TO ITS TREATMENT WITH SODIUM BENZOATE.

By HERMAN B. SHEFFIELD, M. D.,
PHYSICIAN TO THE METROPOLITAN DISPENSARY AND HOSPITAL, ETC.

INFLUENZA is an acute infectious and contagious, epidemic and sporadic disease, due to Pfeiffer's bacillus. It is characterized by a group of inflammatory symptoms of the respiratory, digestive, and nervous systems, severe prostration, and a marked tendency to complications and sequelæ.

Influenza attacks children irrespective of age; one attack does neither predispose to nor immunize against another one. The belief that very young children are exempt from the disease has lost ground within the last decade, when, with the discovery of the influenza bacillus, its occurrence could repeatedly be proved microscopically. The literature on this subject has, therefore, been very scarce and untrustworthy until then. The first account of this malady has been offered by Dr. Bierman (1), who claims that an epidemic of influenza occurred in 1557. Dr. Dürr (2) observed an epidemic in 1837, Dr. Guibont (3) in 1857, and Dr. Filatof (4) in 1873. Since the epidemic of 1889 influenza has been the subject of numerous monographs, those of Dr. Korman (5), Dr. Earle (6), and Dr. Holt (7), among a few others, deserving special attention. Dr. Strassman (8) observed an epidemic among infants under four weeks of age. Dr. Charles G. Kerley (9) treated thirty cases of influenza in the New York Infant Asylum. Dr. Cartens (10) reports an epidemic of influenza at the Leipsic Polyclinic, whih attacked forty-one out of a hundred and thirty-one children. A case of congenital influenza has been recorded by Dr. Townsend (11), and another one is quoted by Dr. Earle (12). Valuable papers have been contributed by Dr. E. P. Davis (13), Dr. M. Flesch (14), Dr. Matting and Dr. Hansen (15), Dr. Fuchs (16), Dr. T. M. Crandal (17), Dr. L. Fisher (18), Dr. A. Schlossman (19), Dr. J. M. Taylor (20), Dr. M. L. Fürst (21), Dr. B. M. Smith (22), Dr. T. W. Westcott (23), and Dr. C. O. Donovan (24), all emphasizing the frequency with which influenza is met in children. The writer's observation corroborates these views, he having treated in 1895 an epidemic of influenza consisting of forty-nine cases at the Hebrew Sheltering Guardian Society Orphan Asylum, twelve sporadic cases in 1896, four cases in 1897, seven cases in 1898, sixteen cases in 1899, and thirty-one cases of influenza within the last three months.

Influenza is caused by a thin little bacillus with rounded-off and thickened ends, twice as long as broad, which was discovered by Pfeiffer (25) in 1892. It is found in pure culture in the expectoration or nasal secretion of patients suffering from acute influenza, and imbedded in pus cells in protracted cases. The bacillus stains well with Ziehl's carbol-fuchsine solution and decolorizes after Gram. Hæmoglobin is indispensable to the growth of this organism. Cultures on blood agar produce very minute glistening drops, often barely visible with the naked eye. Its failure to grow on ordinary agar serves as a discriminating point from the many similar micro-organisms. It lives for several weeks in bouillon or non-dried sputum. Desiccation arrests its development; this feature accounts for the epidemics during damp seasons of the year.

It is generally accepted that influenza enters the system through the respiratory tract. According to Dr. Guenther (26), it is yet uncertain how the digestive and nervous systems become infected. I am inclined to think that the former is implicated directly by swallowing the infected expectoration, and the latter by the gradual spreading of the disease by way of the Eustachian canal and frontal sinus. On the other hand, it is probable that the influenza bacilli enter primarily with the ingesta and infect the blood, which serves them as the source of further propagation. This view is supported by Dr. Canon (27), who was the first to detect this micro-organism in the blood of influenza patients. It must be remembered, however, that the latter observation is as yet lacking authoritative corroboration.

The pathology of influenza is, to say the least, very obscure. It differs with each epidemic as well as each individual attack. The lining membrane of the pharynx and whole respiratory tract of a case of influenza of moderate severity is usually hyperæmic and sparingly covered with grayish spots. The bronchi and bronchioles are filled with muco-purulent secretion containing colonies of influenza bacilli. Here and there the alveoli of the lungs are involved, undergoing hepatization. In severe and protracted cases the inflammation extends throughout the whole lung substance and even to the pleura, presenting the pathological characteristics of broncho-pneumonia, croupous pneumonia, or pleurisy.

The alimentary canal very rarely escapes infection, catarrhal inflammation of the stomach and duodenum being the mildest lesion. Quite frequently the solitary and Peyer's glands are grossly inflamed and thickened, giving rise to the suspicion of typhoid, especially when the spleen is found enlarged. In two infants who died of influenza after forty-eight hours' illness Dr. Flesch (28) found severe inflammation of the jejunum, and in one infant, nine weeks old, dying suddenly two hours after the onset of this disease, he detected perforation of the jejunum associated with congestion of other parts of the alimentary canal.

Reviewing the literature of influenza, I find but little said on the pathology of the circulatory system. As with many similar febrile disorders turgescence of the venous system is often encountered. The heart disturbances spoken of later are probably functional in nature. Occasionally small thrombi are located in the brain and spinal cord. Cases are also on record in which there were found hæmorrhagic extravasations and purulent exudations in the ventricles filled with influenza bacilli.

SYMPTOMATOLOGY.—With such a diverse and complex pathological anatomy the attempt to classify this disease into three distinct types—to wit, catarrhal, digestive, and nervous—is based upon an erroneous conception of clinical facts. There is no line of demarcation as to the extent of the poison traveling through the system. The subdivision of the disease by some authorities into mild and severe, uncomplicated and complicated forms is, to say the least, a superfluous task, as it leads to a repetition of the symptomatology under each heading. I believe, therefore, that the enumeration of the usual symptoms and complications *seriatim* is much more simple and avoids a great deal of confusion.

Respiratory Symptoms.—Preceded by a brief prodromic period, consisting of indistinct symptoms of coryza, indigestion, and general malaise, the active stage of influenza is ushered in with vomiting, chilliness, and rise of temperature. The sneezing and cough become more harassing, and the breathing is greatly accelerated and apparently very painful. The cough is dry, loud, and harsh, remaining so until the decline of the attack. The whole throat is deep red in color, and the tonsils and pillars are swollen and covered with mucus, and at times with yellowish little dots. This muco-purulent secretion, like the expectoration, invests large colonies of influenza bacilli. Physical examination reveals the usual signs of laryngobronchitis. At times fine crepitation may be heard along the apices which, with the previously mentioned symptoms, is apt to lead to the erroneous diagnosis of pneumonia. Indeed, those who study these cases carefully will agree with the writer that the differentiation between the respiratory disturbances of *la grippe* and actual pneumonia is next to impossible at the outset of the attack. In young infants marked dyspnœa and cyanosis are not uncommon.

Digestive Symptoms.—The digestive organs are almost invariably implicated, anorexia and vomiting marking, as a rule, the beginning of the active stage. Vomiting may prove a very troublesome symptom, leading, as it does, to rapid exhaustion. There is a difference of opinion as to whether diarrhœa or constipation predominates in influenza. In ordinary cases neither of them is alarming, and we are inclined to attribute the former to the administration of laxatives and the latter to that of opiates.

Nervous Symptoms.—I stated before that the Eustachian canal and frontal sinus serve as portals of entry to grippal infection of the nervous system. The points of entrance of these canals are, as a rule, more or less involved in almost every case, giving rise to the terrific headache and earache respectively. With the spreading of the inflammation toward the brain a chain of complications arise, varying in severity with the intensity and extent of the infection from slight irritability, which is associated with every febrile affection, to expressed symptoms of meningitis. A case of primary meningitis of this nature came under my care four years ago. The boy in question, eight years old, was sent to the hospital after having complained of headache and dizziness throughout the previous night. He vomited twice during the night, had symptoms of coryza, coughed a little, and, as there were at the time a few cases of influenza at the orphan asylum, this disease was naturally thought of at first, and microscopic examination of the sputum verified the assumption. Toward afternoon the symptoms mentioned became worse, vertigo, photophobia, and stupor being especially pronounced. His temperature rose to 104° F.; the pulse varied from 108 to 130 to the minute. About eight o'clock in the evening he had a slight twitching of the right arm. At about 10 P. M., in response to my question, he answered that his headache had improved, but he still felt dizzy; half an hour later he had rotatory twitching of the right arm and left leg, lasting about thirty seconds. These spasms recurred every fifteen to eighteen minutes, notwithstanding the administration of bromides with chloral. He lost consciousness about 11.30 P. M. The convulsions finally assumed a wider range, attacking simultaneously the upper and lower extremities, and the boy succumbed during such a fit at 12.45 midnight.

Among the characteristic nervous phenomena of influenza we may mention, in the order of their frequency, hyperæsthesia, somnolence, insomnia, and vertigo. The pain is apparently very severe. The child cries when it is being lifted or moved about in the bed, but if left alone it can stretch its limbs apparently without difficulty. The pain in the neck, trunk, and extremities often keeps the little patients in a position closely resembling opisthotonos, thus tempting the observer to diagnosticate meningitis, especially if somnolence appears early. The latter symptom varies from mere drowsiness and apathy to pronounced semicoma. One child, ten months old, dozed away for six successive days, awakening with a fit of crying if disturbed. She took nourishment only when coaxed to do so. On the other hand, cases are on record of suffering from insomnia for days, resisting even hypnotics. Dr. Earle (29) relates a case of influenza in a child, four years of age, who was awake four nights. A few cases of this kind came under our observation. The following one deserving special mention:

H. F., a boy, four months old, bottle-fed, well-developed. He was taken sick with cough, vomiting, and considerable fever at the time when the mother and sister were suffering from influenza. The attending physician believed the child to be "teething," and advised the administration of one teaspoonful of oleum ricini every hour, "until the stool would turn yellow." The mother gave it eight teaspoonfuls within eight hours. I found the child in an alarming condition. The stool was green and mixed with mucus and blood. The child was unconscious, the temperature 103.5° F., and pulse 168. He coughed badly and vomited frequently. Within the next two days the child had several attacks of convulsions, those of the laryngeal and respiratory muscles predominating. For four days he did not sleep more than about two hours out of twenty-four, bromides and chloral having remained ineffectual. Examination of the expectoration showed an abundance of influenza bacilli. The child gradually improved, and within a fortnight recovered.

Vertigo in infants mostly escapes our notice; in those able to hold up their heads, it manifests itself by dropping and swaying of the same in various directions. The eyelids droop, the face turns pale, and vomiting supervenes. Older children invariably complain of this miserable feeling, and are often unable to raise their heads from the pillow.

General Symptoms.—Influenza begins with an abrupt rise in temperature of three to five degrees, which remains constant for a few days and declines by lysis or crisis, and is usually accompanied by sweating. In very young infants the temperature, being naturally subnormal, does not serve as a reliable guide, but, on the contrary, is misleading. Thus in eight infants under two weeks of age, presenting unmistakable symptoms of influenza, Dr. Strassman (30) found the temperature to average 95° F. Prostration is invariably present even when most of the other symptoms are masked. The little patient lies exhausted, almost in a state of collapse, seemingly without a spark of life in body or mind.

COMPLICATIONS AND SEQUELÆ.—There are but few acute affections which can compare with influenza in the tendency toward prolific complications and sequelæ. Mild and brief as some attacks may appear, the chain of complications may be of the gravest nature and persistency. Moreover, they may set in after apparent recovery from the original malady. Pneumonia is especially common. I have observed one case of croupous and three of broncho-pneumonia among the forty-nine cases of influenza which occurred at the orphan asylum, and four cases of croupous and eleven of broncho-pneumonia among the sixty-nine in private practice. Attention is invited to the comparatively higher ratio of pneumonias among the private patients, an observation which can only be explained by the fact that the orphans were kept in the wards at least one week after convalescence, while such precautions could not, as a rule, be carried out in private practice, the complications having usually developed during convalescence through exposure to atmospheric changes. I may add here that small pneumonic foci are quite often found in cases of influenza presenting severe respiratory disturbances and are apt to escape our notice, as they usually abate together with the other inflammations of the body.

Meningitis is met next in order among the grave complications. It occurs, as alluded to before, either primarily with the invasion of the grippal attack or secondarily following other complications, such as otitis and mastoiditis. Indeed, otitis is of such common occurrence and so often neglected that the rarity with which mastoiditis is encountered is rather a conspicuous feature.

Dr. Holt (30), Dr. Earle (31), and Dr. Fürst (32) mention nephritis as a complication of influenza. In a girl, twelve years of age, under our care, nephritis supervened two weeks after the grippal attack; she died eight weeks later. Dr. Earle, Dr. Davis (33), and Dr. Holt saw cases of pulmonary tuberculosis following this disease. Dr. B. M. Smith (34) observed several cases of pleurisy. Dr. Holt records also a case of pyelitis. Dr. Earle reports four cases of purpura hæmorrhagica. One case of empyema came under the care of the writer. The child in question, two years and a half old, was sick with the *grippe* for twelve days. After the disappearance of all other symptoms there remained a short cough and an evening rise of one to two degrees of temperature. The cough became gradually worse, and the child lost in flesh in spite of careful medication and good feeding. Thorough examination revealed dullness over an area of about two inches in circumference at about an inch below the right scapula along the posterior axillary line. Dr. C. Beck, in consultation, obtained with the hypodermic needle about half a drachm of turbid fluid and advised waiting a few days for further developments. The next day the writer withdrew a drachm of pus which contained an abundance of influenza bacilli. The child was put on large doses of iodide of iron and external applications of iodine and guaiacol and recovered completely within three weeks.

Reviewing the literature of influenza, I find no reference made to cardiac neuroses in children. The following case of bradycardia may prove, therefore, of interest:

L. F., six years old, a delicate-looking boy, had an attack of influenza of moderate severity. On the tenth day he sweated profusely, the temperature fell to 97° F., and pulse to 52, being barely perceptible at the wrist. Proper stimulation failed to improve it, but, on the contrary, three days later the pulse sank to 38–44. Physical examination showed no cause for this peculiar phenomenon. It rallied gradually, attaining on the twelfth day 72 beats to the minute. We had the boy under observation for over a year, and, notwithstanding all efforts, the pulse never reached above 76. He was otherwise in perfect health.

I am not aware of any cases of articular rheumatism having been met in association with the *grippe*. Recently we treated a child, ten months old, for acute influenza, which lasted eight days. Six weeks later the mother noticed that the baby refused to stand on the left foot and cried when stretching of the same was attempted. Slight swelling of this ankle was discerned. The temperature rose to 101.5° F. The next day the same symptoms appeared in the right foot. The child was put on small doses of sodium benzoate and sodium salicylate internally and a five-per-cent. ointment of ichthyol and iodine was applied externally. It recovered gradually in two weeks.

Adenitis may at times become a troublesome complication. The submaxillary glands are principally involved and manageable without special medication. It is different, though, when the parotid gland is affected, as it is very apt to suppurate and undermine the patient's health to a very serious extent. Two cases of this kind came under my care. One of them, a girl two years and a half old, developed parotiditis on the fourth day of sickness; fluctuation could be felt three days later. A free incision was made, about an ounce of pus evacuated, and the child recovered gradually after several weeks. No influenza bacilli were found in the pus.

The other little patient was a boy, twenty-two months old. There had been considerable inflammation of the lymphatic glands and connective tissue around the angle of the jaw during the grippal attack. Two weeks after I was called and found that he had vomited several times during the night; his temperature rose to 104° F., pulse to 148. The parotid gland was greatly enlarged, bulging out toward the anterior portion of the face, apparently exerting firm pressure upon the facial nerve, as unmistakable signs of facial paralysis supervened. Hot poultices were applied for twenty-four hours, resulting in softening of the abscess, which was opened and drained, with the immediate relief of all painful symptoms. Convalescence was slow.

Every form of cutaneous eruption may accompany influenza and baffle the skill of even the keenest observer. I have often seen a bright-red punctiform rash resembling that of scarlatina. At times the eruption is roseolar or pustular in character, simulating that of measles or varicella respectively. Urticaria is not uncommon, and simple erythema may be seen in the majority of cases at some stage of the disease.

We may finally add that influenza is productive of otitis, rhinitis, conjunctivitis, and periostitis, and a few more minor complications, which are usually met with in other febrile diseases of children.

Diagnosis.—The diagnosis of influenza is easy during an epidemic, but quite the reverse in its absence, "colds" and gastro-intestinal disorders being of such ordinary occurrence among children that influenza is generally not thought of when such symptoms present themselves; furthermore, the diagnosis is often obscured by the complication. So far as my experience goes, I have never failed to discriminate influenza from similar acute affections when I have taken pains and time to do so, relying chiefly upon the following symptoms:

1. The invariable presence of influenza bacilli of Pfeiffer in the expectoration.
2. The simultaneous development of respiratory, digestive, and, at times, nervous phenomena.
3. Early and pronounced prostration, incommensurate with the severity and duration of the attack.

In addition to these differential points we must bear in mind the characteristic signs of all the other diseases resembling influenza, such as pneumonia, meningitis, gastro-enteritis, typhoid fever, scarlatina, measles, continued hyperpyrexia (35), and rheumatism, and of those associated with influenza not mentioned here.

Prognosis.—The prognosis of *la grippe* differs with each epidemic as well as the hygienic surroundings. The mortality is generally believed to vary from twenty to thirty per cent. If this is true, I must have been exceptionally fortunate in having lost but two children out of a hundred and nineteen. I am inclined to believe that a death-rate of even twenty per cent. among children is a high overestimation, excepting, perhaps, during particularly virulent epidemics. The mortality is at any rate lower in children than in adults, owing probably to the fact that earlier and better care is received by the child during the onset of the disease as well as in convalescence.

Treatment.—When we realize that influenza, aside from being transmitted through the air, is also communicable from one person to another, the question of prophylaxis appeals to us, the most important and effective measure of which is early isolation. I am at a loss to understand why such signal interest is being taken by the health authorities in the prevention of measles or even chicken-pox and none at all in the spreading of influenza. To be sure, the complications and sequelæ of the latter by far excel those of the former in severity as well as multiplicity, and, looking at the appalling mortality of influenza among adults, there is every reason to anxiously adopt preventive means which will stay its ravages. Indeed, carrying my reasoning into action, I frequently succeeded in confining the disease to a single member of large families, and the fact that in an orphan asylum of over eight hundred children the disease was limited to but forty-nine speaks well for the efficiency of such prophylaxis.

It is perhaps needless to say that general hygienic rules must be insisted upon. Furthermore, as the maintenance of a high state of health is Nature's preventive, the appearance of any respiratory or digestive disturbances during an epidemic of influenza must be remedied at once. Careless exposure to atmospheric changes and grippal surroundings must be avoided. The early prostration calls for wholesome, nutritious, and easily digested diet. Beef tea or the expressed juice of meat, milk, and farinaceous food must be given in small quantities and frequently repeated. In cases of intolerance, predigested foods must be resorted to, and where vomiting is pronounced nutrient enemata are indicated.

The active treatment is chiefly symptomatic. Numerous drugs have been lauded as specifics; there are, however, but few worthy of trial. Antipyretics in the form of coal-tar products are certainly of great value, as they simultaneously reduce temperature, relieve pain and allay nervous irritation, and dispense to a great extent with morphine preparations. Sodium salicylate, salol, and quinine answer well in many cases. There is one drug which, in my experience, acts almost as a specific in influenza, and has so far not received deserving attention. I am referring to sodium benzoate. In 1857 Dr. Soquet and Dr. Bonjean (36) recommended this drug in gout and rheumatism; since then various experiments have been made with it which have proved its value as an antiseptic, antipyretic, antirrheumatic, diaphoretic, diuretic, and expectorant. Dr. Rokitansky (37) and Dr. Schüler (38), for instance, were very enthusiastic over its effects in arresting and curing phthisis pulmonalis. Dr. Letzerich (39), Dr. Demme (40), and Dr. Tordeus (41) praised it highly in diphtheria, scarlatina, and whooping-cough. Dr. Virchow (42) and Dr. Senator (43) found it very serviceable in rheumatism, lithæmia, and cystitis. According to Dr. Bartholow (44), sodium benzoate has lately occupied a large place in professional attention. Having similar antiseptic and antipyretic properties to those of salicylate of sodium, and being without any injurious effect, it came to be largely used in the septic maladies. In eruptive fevers, in typhoid and malarial fevers, this salt is preferable to the salicylate. Dr. Potter (45) and Dr. Shoemaker (46) agree as to Dr. Bartholow's observations, and Dr. Shoemaker adds that sodium benzoate exerts a stimulating effect upon the liver and works well in diarrhœa and dysentery. It may thus be seen that we possess in sodium benzoate a remedial agent capable of meeting most, if not all, indications in the treatment of influenza.

The writer's experience with this drug began five years ago, when a child with a severe attack of acute articular rheumatism was rapidly cured with sodium benzoate and salol. Encouraged also by the fact that large doses are well borne by children, I decided to employ it in influenza, an epidemic prevailing about that time. The results were exceedingly satisfactory, most of the symptoms having subsided within forty-eight hours. Since then sodium benzoate has formed my remedy not alone in influenza, but in all its complications as well. Occasionally it is found necessary to administer small doses of acetanilide for reduction of high temperature and relief of pain, and, when the latter is severe, also a little codeine. I may state that after having given acetanilide to thousands of patients in diverse diseases I have yet to see any untoward results following its use, provided proper caution is taken in prescribing a moderate dose. Where any depression is to be feared a small dose of caffeine is a safe addition. Whenever "rheumatoid" pains predominate I combine the just-mentioned drugs with salol, which acts at the same time as an intestinal antiseptic. Thus, when I am called upon to treat a case of the *grippe* of moderate severity I order:

℞ Sodium benzoate,
Salol, } of each...... 1½ grain;
Acetanilide,
Caffeine .... ¼ "
M. Make one powder.

Sig.: One powder every three hours to a child six years old, or, if the pain is severe and the child is kept awake, add one twelfth grain of codeine sulphate to each powder. Where children refuse to take powders I prescribe the following mixture, again adding codeine if necessary:

℞ Sodii benzoat., } āā .... ʒss.;
Antipyrin.,
Liquor ammon. anisat., } āā .... ʒij;
Syr. scillæ comp.,
Syr. althææ .... f℥jss.;
Aquæ anisi .... q. s. ad f℥ij.

M. Sig.: One drachm every three hours to a child six years old.

In connection with sodium benzoate by the mouth I always direct the inhalation of compound tincture of benzoin, which acts as an admirable respiratory antiseptic, expectorant, and antispasmodic. One tablespoonful of the tincture is added to a quart of boiling water in a tea kettle or tin basin and maintained in a state of constant simmering over a gas or alcohol lamp during the entire sickness. Occasionally a hot flaxseed poultice and expectorants are indicated. Where digestive disturbance is predominating, small doses of calomel and ingluvin form a useful combination. Nervous phenomena, such as extreme irritability and convulsions, usually yield promptly to the administration of sodium bromide and chloral, although under the sodium-benzoate treatment I had but few cases requiring nerve sedatives or hypnotics. By far the more important is the remedying of the characteristic prostrations, and I found that small doses of strychnine sulphate and the diverse ammonia preparations were most useful. If the cough is very protracted, I order minute doses of creosote with glycerin, alcohol, and a pleasant adjuvant. Special attention must be paid to the prevention of complications, be they grave or mild, and it must be remembered that it is the attention to the comparatively little things that renders an attack of influenza devoid of danger. Simple acute otitis, rhinitis, and adenitis must be arrested at their inception. There are, of course, complications which will find their way in influenza in spite of the most careful and diligent management. Considering, however, my low mortality in comparison with the extreme fatality recorded by others, I am tempted to believe that this most fortunate result is due chiefly to the administration of sodium benzoate and the enforcement of all the suggestions enumerated in this paper.

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ARE THERE VERITABLE VALVES IN THE RECTUM?

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The writer will observe that a question of no small importance to the physiologist, the pathologist, and to the rectal specialist, has arisen among some anatomists, histologists, and others respecting the existence or non-existence of true valves in the rectum.

The very peculiar adjustment of the redundant mucous membrane of the rectum into numerous and various undulating plicæ has led a few anatomists to infer and to endeavor to prove that these rugæ are true valves, like those in other parts of the body. A plain description of these plicæ, including their formation, structure, ætiology, and function, will be given in its proper place.

But, before entering into the main features of the subject, the writer will in a brief episode remark that about forty years ago he published some observations upon the negative of the question in dispute, denying the existence of valves in the rectum, as well as denying the necessity for such in that organ; he still holds the same opinion, and will on this occasion endeavor to maintain it.

The writer was moved to resume this subject at this time from the fact that Dr. Thomas C. Martin, of Cleveland, Ohio, an able and distinguished member of the American Proctological Society, read a paper before the American Medical Association, at their late meeting at Columbus, Ohio, entitled Phantom, Semilunar, and Annular Strictures of the Rectum: their Diagnosis and Radical Treatment under Direct Inspection.

Dr. Martin said that his paper was based upon the assumption that the rectal valve existed, and he showed two specimens to bear out his views, one from a three-months-old child, the other from an embryo in the third month.* The writer will only remark here that it seems strange that an anatomist should select two such intangible examples, as it were, in subjects in which the rectum itself is in a rudimentary or undeveloped state, for the purpose of attempting to demonstrate the existence of perfect valves in an organ itself imperfect. Why not select specimens for this purpose from fully grown and fully developed adult subjects, which abound? Dr. Martin's first specimen was taken from a three-months-old child. Now, it is well known that in early infancy, say from birth to twelve or eighteen months, the rectum and colon are not developed beyond the common calibre or diameter of the small intestines. Dr. Martin's second specimen was taken from an embryo in the third month. Now, it is equally known that the rectum during embryonic life is completely confounded with the bladder, the urinary and the genital canals, commingling with them promiscuously and indistinguishably, and terminating in a common cloaca; consequently, the question might here with propriety be asked: How and where was this second rectal specimen obtained?

It will now be shown that Dr. Martin maintains that the rectum has not only one valve, but sometimes as many as four, and he makes the astounding affirmation that these rectal valves, like the rectum itself, have numerous disorders and diseases, as he proclaims in a quite recent treatise entitled *A Practical Monograph on the Disorders and Diseases of the Rectal Valve* (8vo, Philadelphia, 1899).

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* *Medical Record*, June 17, 1899, p. 885.

Now, according to Dr. Martin, the rectum is in no better condition, with its valves and their many disorders and diseases, than is that hybrid blood-vessel of the liver, the *vena portæ*, in which there is an entire absence of valves in its dependent plexus, and which for the want of them is overflowing with diseases. These two organs, the rectum and the vena portæ, are in one sense in the same category, and, like Pandora's box, are the source from which issue hæmorrhoids, and with them innumerable maladies. It is indeed a curious fact, and believed by many physicians of antiquity, and even so believed by some at the present day, that the vena portæ for the want of valves was the source not only of a few peculiar affections, but of all diseases. This theory regarded or contemplated portal congestion and hepatic derangements as the essential elements of all diseases. Pertaining to the same subject, the eminent German professor Stahl, who considered the vena portæ as the source of numerous diseases, said: "Vena portæ, porta malorum."[*] The writer begs pardon for this digression, and will now proceed to take up the subject *seriatim;* but as a preliminary to its investigation it is necessary in the first place to consider briefly the amplitude of the mucous membrane of the rectum, the numerous plicæ when the organ is empty, the columnæ, and the lacunæ or sacculi which it normally presents. The necessity for demonstrating these phenomena of the mucous tissue, giving their true function, structure, and location, will be obvious when it is especially considered that the plicæ and the lacunæ are claimed as valves of the rectum by some authors. It is also important, in the second place, to demonstrate the anatomy and physiology of the internal and external sphincters of the anus, as well as the partial contraction of the rectum, about four or five inches above the anus, improperly called the third or superior sphincter of the anus by some authors, and claimed as a rectal valve by Dr. Martin.

As regards the existence of a third or superior anal sphincter, the writer feels disposed to dismiss it at once from discussion, having repeatedly failed to find it; but, as some very able authors claim to have found something like it, the writer will just here call attention to the subject.

The first author who suggested the possibility of a third anal sphincter was the distinguished French surgeon M. Lisfranc, who did not, however, either describe or demonstrate by dissection such a sphincter, but merely imagined its existence from the fact that he had observed at about four inches above the margin of the anus that the rectum at that point possessed the power of contraction and retention without incontinence of fæces taking place, after he had in several instances incised three or four inches of the inferior extremity of the rectum on account of cancer.[*]

From this suggestion of M. Lisfranc, M. Nélaton subsequently described, at the place indicated, a muscle which he proposed to call superior sphincter ani, and which was afterward verified by M. Velpeau, who thus speaks of it: "I have proved the existence of a kind of sphincter of the rectum which is described by M. Nélaton; it is a fleshy semicircular ring placed about four inches above the anus."[†]

The late learned and eminent German anatomist, Professor Hyrtl, of Vienna, a few years ago revived the subject of the imaginary internal sphincter of M. Lisfranc by devoting much time, labor, and talent in endeavoring to demonstrate and prove the uniform existence of this sphincter, which he denominated sphincter ani tertius.[‡]

The late able and distinguished anatomist of our own country, Professor Horner, after making repeated efforts to find this so-called third or superior sphincter ani, failed to do so, and says that if it ever exists, it does not do so uniformly; that it is neither normal nor constant.[#]

The late distinguished Professor Van Buren makes the following very pertinent remarks upon this subject: "Writers," says he, "have described slighter and more or less constant and permanent narrowings at and below a certain point of the rectum as a 'third sphincter,' and, in fact, have cumbered the archives of surgery with a good deal of fruitless speculation concerning an organ on which anatomy and physiology have been equally unsuccessful in assigning either certainty of location or certainty of function."[||]

The writer will observe here that no arrangement whatever of the circular muscular fibres into semicircles or into segments of circles can constitute a true sphincter or constrictor muscle, for the aggregated form of the circular muscular fibres must as a band completely embrace or surround and close a canal, a tube, or an orifice, in order to be a sphincter muscle in the true and original sense of that word. The difference between a sphincter muscle and a valve in any part of the body is so great that no student of anatomy will confound them as one and the same thing. Now, it is a fact that not one of those authors who claim that a superior or a third sphincter, or something like it, exists ever intimated that he considered such sphincter a rectal valve. It remained, therefore, for Dr. Martin alone, for the first time, to call this unsubstantial thing a valve. He says: "The sphincter ani tertius, superior sphincter, and detrusor fecium muscles are one and the same thing, and this thing is essentially a valve."* This assertion of Dr. Martin might at once be discarded as being equally unreasonable, unreliable, and untenable. It will be seen that the doctor claims as valves of the rectum the phantom sphincter of Lisfranc, the superior sphincter of Nélaton, the sphincter tertius of Hyrtl, the circular muscular fibres of Chadwick, the plica transversalis recti of Kohlrausch, the sphincter ani internus, etc. The writer has looked in vain for Dr. Martin's definition of a rectal valve, but, whatever it may be, it seems to be very grasping, and including in its grip almost everything in the rectum, and even holds that this organ itself is "the typical anatomical valve." †

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[*] *Dissertatio de vena portæ, porta malorum*, 12mo, Helæ, 1722.

[*] Malgaigne. *Traité d'anatomie chirurgicale et de chirurgie expérimentale*, tome ii, p. 343, 8vo, Paris, 1838.

[†] *Anatomy of Regions.* Translated from the French of Velpeau by H. Hancock, p. 515, imp. 8vo, London, 1838.

[‡] *Handbuch der topographischen Anatomie*, Band ii, sec. 36, p. 162, imp. 8vo, Wien, 1882.

[#] *Anatomy and Histology*, eighth edition, vol. ii, p. 46, imp. 8vo, Philadelphia, 1851.

[||] Phantom Stricture and other Obscure Forms of Rectal Disease, *American Journal of the Medical Sciences*, October, 1879.

Dr. Martin refers to the theory of Dr. Chadwick, who believed that the function of the circular muscular fibres of the rectum was propulsory, or, as he very appropriately called them, detrusors fæci (Latin, *detrudo*, to push or thrust down). ‡

Dr. Chadwick did not call the circular muscular fibres of the rectum valves, as Dr. Martin does.

The Mucous Membrane.—The mucous coat of the rectum is much more ample, much more vascular, considerably thicker, more porous, and of a deeper red than that in any other portion of the large intestine; its redundancy is quite evident in every direction, but especially so in the superior part of the organ; as it approaches the inferior portion, however, it begins to lose this redundancy to a considerable extent, and this is most evident in its circular direction.

The Plicæ, their Ætiology, Structure, and Function.—In consequence of the great amplitude of the mucous membrane, it is, when not distended, disposed into irregular undulating plicæ in the superior part of the rectum, which usually assume a transverse direction. It is sometimes, however, thrown into distinct ridges, which observe a slightly oblique and circular direction. A similar arrangement of numerous plicæ is observed upon the mucous membrane of the duodenum, forming the so-called valvulæ conniventes of Kerkring.#

Ætiology.—The corrugated condition of the redundant mucous coat of the rectum is solely caused by the tonic or involuntary contraction of the muscular fibres of the organ, as corrugators. Plicæ of a similar kind are caused by the tonic contraction of the sphincter ani externus, as are observed on the cutis around the anus, extending some little distance into the anal canal, as well as on the external surface; so that, whenever the anus is distended, the cutaneous plicæ are completely effaced for the time being; indeed, the mucous membrane and the cutis seem to be analogous, the former investing the internal cavities communicating with the air, while the latter clothes the exterior parts of the body.

The plicæ of the mucous membrane, as well as those of the cutis, may be completely effaced by distention or dilatation; for instance, the rectum sometimes becomes abnormally distended and enlarged by the accumulation and impaction of fæcal matter, the result of atony; if a specular examination is now made, after the organ is emptied, it will disclose the fact that all these plicæ of the mucous membrane have been entirely effaced, and the rectum presents a smooth, unwrinkled mucous surface like a membranous bag. The writer affirms that such cause can not possibly obliterate veritable valves; hence these plicæ are not valves.

These plicæ may also be defaced or obliterated by death, because the tonic contraction which caused them depends entirely upon an active principle which ceases with life; hence nothing whatever can be learned concerning them post mortem; consequently, they can not be valves, for all the valves of the body can most certainly be easily distinguishable in the living body, and in the dead body the removal of the organ ought not to obliterate them, but, on the contrary, they should be capable of being discovered, demonstrated, and verified easily, and at any period previous to decomposition, notwithstanding the assertion of Dr. Martin, who says that "post-mortem valves can not be found." But every student of anatomy knows that valves may be found, described, or verified post mortem just as well as ante mortem.

Structure and Function of the Plicæ.—These plicæ are composed solely of the mucous coat of the rectum, of which they are simply the folds. The writer affirms that no circular muscular fibres nor cellular tissue enter into their composition, as a few authors attempt to show; but, in the opinion of the writer, they can neither be revealed nor demonstrated, even by the aid of the most powerful microscope.

The function or office of the plicæ or rugæ of the mucous membrane, together with the three curvatures of the rectum, is to check any undue movement of the fæces downward; they especially present a barrier to the too rapid involuntary evacuations of fluid fæces or gases from unduly passing out of the body. They do not, however, exert their office of prevention to the same extent when the evacuations are natural, healthful, and consistent; forasmuch as the fæcal mass, before reaching this point, has been almost entirely deprived of its fluid properties, and is merely arrested here and detained, not by valves, but by the anal sphincters, to await its final expulsion. Indeed, the three curvatures of the rectum, together with its plicæ, are the brakes which Nature employs to prevent a too rapid transit of the

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* *Op. cit.*, p. 31.

† *Op. cit.*, p. 62.

‡ *Transactions of the American Gynæcological Society*, vol. ii, p. 43, Cambridge.

Observationes anatomicæ rariores, p. 125, 4to, Amstelædami, 1760.

contents of the organ downward. All admit that these plicæ form a barrier or an obstruction to the free egress of the fæces in the downward direction; they also offer an obstruction to the regress of the index finger or bougie, thus causing opposition in both directions, which no valves of the body do. Indeed, so far as valves of the rectum are concerned, these plicæ can only be considered valvate (Latin, *valvatus*), which signifies a resemblance merely to valves—that is, they look like valves, but do not possess the essential functions of such; consequently they are not valves. Sappey, who has examined the rectum carefully in numerous instances, declares positively that the various plicæ of its mucous membrane are very uncertain in locality and in number, and have no determinate direction. He says there is no proof that they persist when the rectum is full, and that they may be effaced by distention; and he further says that it is an abuse of language to apply the name *valve* to them.

Now, the anatomical evidence against the existence of these plicæ as being valves of the rectum is plainly corroborated by the numerous facts already given, so that the writer must be pardoned for adducing a few more. These plicæ, not being supplied with muscular fibres and cellular tissue, are not strong enough to act as valves; they neither observe any regular or permanent form, any certain number, nor always any particular direction or situation; hence they are too uncertain for valves. They do not, as heretofore observed, afford a free and easy egress to the fæces in their passage downward, as rectal valves should do, but, on the contrary, they actually offer an obstruction to this action, and they do not present any serious obstacle to the regress or ingress of the index finger or bougie, as valves should do, but only offer a slight resistance, which is easily overcome by an intelligent and qualified explorer. And, furthermore, these plicæ, except in an indurated or diseased condition, are never firm and unyielding, as some declare; but, on the contrary, they are soft, pliable, and unresisting, being easily removed by a proper sized bougie, or, if within reach, by the index finger. It will be observed that a small-sized rectal bougie is apt to become hooked or entangled in these plicæ or superabundant mucous membrane, while one of a much larger size will so dispose of them as to pass readily, as any one must have experienced who has frequently sounded the rectum or the urethra. Now, the writer has thus minutely described these plicæ because some few authors claim them as veritable valves or valvulæ; but, if they are so, so are the similar plicæ or rugæ of the mucous membrane of the stomach, of the vagina, of the bladder, etc.

An Anatomical Valve.—It may now be proper just here to explain the meaning and the application of the term *valve* (Latin, *valva*), which in anatomy signifies a membranous partition firmly affixed within the cavity of a canal or tube, including its whole circumference, and that it opens in one direction only, to allow the free and easy egress of a fluid, a gas, or other substance, and then it shuts, to prevent regress or regurgitation, as may be exemplified by the beautiful valve of Bauhin, the ileo-cæcal valve.

A valve in any canal or tube, such as the rectum, the blood-vessels, etc., to act and be effectual as such, must include at the point of location the whole circumference of such passage, and must also control to some extent the parietes of it. There are no such valves in the rectum that occupy the whole calibre of it. The plicæ, which are erroneously called valves, are found to occupy different sides of the rectum; they do not close it in any direction or at any point, and they offer to a certain extent an opposition to the free and easy egress of the fæces downward, which act has already been shown to be their normal function, not as valves, however. The writer will repeat that no valve in any part of the body, unless diseased, will obstruct a passage in both directions at the same time, as the plicæ always do, as has been shown.

The Columnæ.—The mucous coat of the rectum, after having presented itself in transverse plicæ, as already observed, begins just above the superior margin of the internal sphincter ani to display itself in parallel longitudinal plicæ which stand out or project in such a remarkable manner as to have obtained from the famous Morgagni the appellation columns or pillars of the rectum; hence they are termed by the French "*colonnes du rectum de Morgagni.*" * These plicæ are not so numerous and so irregular as the transverse and the oblique, nor as the radiated plicæ of the cutis at the anus. Their dimensions are unequal, and they vary in number from four to ten or twelve, and when they are more numerous some of them are rudimentary; their number and position to a considerable extent appear to be fixed by the peculiar terminal arrangement of the longitudinal rectal muscular fibres. They differ from the other mucous rugæ of the rectum by being formed of the mucous membrane, the adjacent cellular tissue, and the longitudinal muscular fibres, which give these pillars additional density and strength; by their not being alone the result of muscular contraction, and by their not being capable of entire obliteration by distention or dilatation. These columns as they proceed downward, diminish in size, and terminate rather abruptly in rounded extremities just above the inferior margin of the internal sphincter ani. They very much resemble the longitudinal duplicatures of the œsophagus.

The Lacunæ or Sacculi.—In the sulci formed by the columns of the rectum another arrangement of the mucous coat takes place, which is always, however, most remarkable at the termination of the sulci, just below the inferior margin of the internal sphincter ani. At this point membranous plicæ, more or less numerous, of a semilunar form present themselves, their number corresponding to that of the sulci; their direction is usually transverse, though sometimes, but rarely, oblique. These plicæ, occurring as they do at the lower end of the sulci, and between the columns, have each of their ends attached to the base of one of these columns, and their free and curving margins directed from below upward, thus forming a series of narrow, semilunar lacunæ or sacculi, varying in depth from one to four lines, and the orifices of which present upward. These lacunæ or sacculi always contain more or less mucus, furnished them by the glands of the vicinity, and ready to be poured out for the lubrication of the lower portion of the anal canal whenever they are compressed by the act of extruding the fæcal matter. Distention of the canal compresses them, but it does not entirely obliterate them.

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* *Dictionnaire de médecine et chirurgie*, p. 701, Paris, 1845.

The existence in the rectum of these normal lacunæ or sacculi has at an early day been fully recognized, understood, and correctly described by some of the old anatomists more than a century ago, and is therefore not a recent discovery, as some authors declare, as will be plainly shown. The writer will now give the names of some of the most eminent anatomists of modern times, who describe these lacunæ correctly, but do not call them valvulæ; their description is worthy of the highest credence, because it was the result alone of actual dissection. John Astruc, of the sixteenth century, and author of the most complete treatise on the venereal disease of his time, says that "in the margin of the anus itself, several short ducts, or rather lacunæ, appear which convey a viscid humor."[*] This description is brief but correct, even to the function of the lacunæ and the character of their discharge. The celebrated anatomist Winslow describes these lacunæ very correctly, but not as valves.[†] The distinguished anatomist Ruysch also describes these semilunar lacunæ of the anus very correctly.[‡] The eminent French anatomist M. Cloquet gives a full and graphic description of the lacunæ, but not as valvulæ.[#] The great French pathologist M. Cruveilhier also mentions these lacunæ very correctly and concisely.[||] Professor Horner, the late eminent anatomist of our own country, also describes the normal lacunæ or sacculi of the anal canal very minutely, but does not call them valvulæ.[△] Dr. Horner gives the following drawing, which completely illustrates his description.

The late beautiful writer Dr. Reynell Coates, of Philadelphia, also very minutely describes the normal sacculi of the anal canal; indeed, his Anatomy and Physiology of the Anus is the ablest production in any language the writer has ever read.[*]

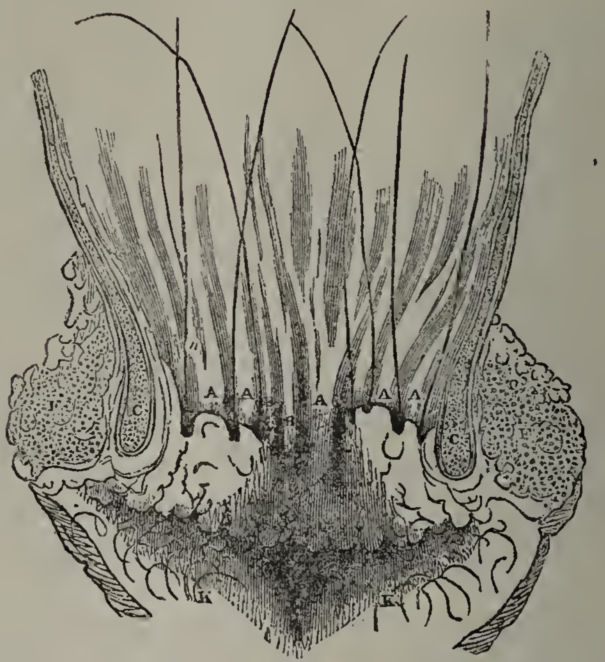

FIG. 1.—A vertical section of the anterior parietes of the anus, with the whole canal displayed so as to show the relations of the sacculi of the middle region and their relations to the surrounding parts, their orifices being marked by bristles. *A*, *A*, columns of the rectum ; *B*, *B*, rudiments of columns ; *C*, internal sphincter ; *F*, external sphincter ; *I*, rudimentary or imperfect sacculi ; *K*, *K*, radiated folds of the skin, terminating on the surface of the nates. *n*, a bristle in one of the sacs.

Now, not one of these eminent anatomists named, who so correctly and so minutely describe these normal lacunæ or sacculi, gives the least intimation that he considered them as valvulæ; and can it be possible such acute histologists, who would know a valve when they saw it, overlooked or omitted so important a matter as valves in the rectum, when such existed.

The writer will now give the names of two able anatomists of the sixteenth century, Morgagni and Glisson, who describe the lacunæ correctly, but call them semilunar valves—*ani valvulæ semilunares.* Morgagni gives the following drawing of a vertical section of the inferior portion of the rectum, showing the bases of the columns of Glisson, or, as they are also called, the columns of Morgagni.[†]

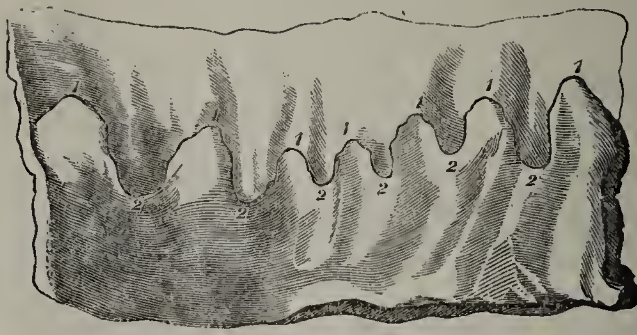

FIG. 2.—1, ani columnæ ; 2, interjectæ iisdem valvulæ semilunares.

The Rectum needs no Valves.—The writer affirms that there is no necessity whatever for valves in the rectum, for this organ can and does perform all its normal and necessary functions without them, being completely controlled in all its movements by its muscular investment, its peristaltic action, its sphinctores ani, together with the diaphragm and other abdominal muscles, and by its profuse nervous endowment; each one of these elements has its peculiar office to perform; indeed, these are the principal factors or motors concerned in the complex and admirable mechanism of defæcation, and they take complete charge and control of the fæces without the aid of valves. Nothing whatever takes place in the rectum like an opening and shutting of its cavity by a valve or valves; this action is done most effectually by the sphincter muscles of the anus, which differ entirely from valves in structure, in form, in action, and in function, as has already been shown. On an impending evacuation of the fæcal matter the internal sphincter ani, the pylorus, warns its colleague, the external sphincter ani, to be on the *qui vive,* for there is a body approaching, and to be ready to cooperate in its expulsion. The quiescent state of the sphincter ani muscles, by means of their tonicity or tonic contraction, is enabled to completely close the anal orifice and canal, and maintain them so until called upon again to open them.

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[*] *De fistula ani*, p. 6, 8vo, Lugduni, 1730.

[†] *An Anatomical Exposition of the Structure of the Human Body*, fourth edition, vol. ii, p. 148, 4to; English translation by G. Douglas, M. D., London, 1732.

[‡] *Opera omnia, Anatomico-medico-chirurgica*, vol. i, p. 221, 4to, Amstelædami, 1737.

[#] *Traité d'anatomie*, tome ii, p. 343, 8vo, Paris, 1822.

[||] *Anatomy of the Human Body.* English translation by G. S. Pattison, M. D., p. 380, imp. 8vo, New York, 1844.

[△] *Op. cit.*, vol. ii, p. 47.

[*] *American Cyclopædia of Practical Medicine and Surgery*, vol. ii, p. 83, imp. 8vo, Philadelphia, 1841.

[†] *Adversaria anatomica*, pars iii, animadversio vi, pp. 10, 11, et addenda adversariis, tabula iii, Fig. 1, p. 109, 4to, Lugduni-Batavorum, 1723.

Defæcation is a reflex phenomenon of expulsion by which the residual portion of the ingesta is expelled from the body. This act, to some extent, is under the influence of the will, for the action or call to evacuate may be resisted or postponed for the time being; but, if this course is persisted in several times, the sensibility of the rectum becomes blunted, so that the presence of the fæcal mass will no longer provoke the reflex action which produces its expulsion.

Dr. Martin says that the reason why the rectal valve is so little known by the profession is the want of proper instruments and of technical art and skill in their use; and then, again, on another occasion, he says that it is very easy to discover rectal valves: all he wants is a patient in the knee-chest posture and two index fingers.* The writer will remark that, so far as his own right index finger is concerned, although he is quite aged, it has not yet lost its cunning.

The writer will say, in conclusion, that he regrets the necessity that compels him to differ so widely from the theory of his friend Dr. Martin, of deservedly high reputation, and one of the founders and promoters of the new and very laudable Society for the Special Medico-chirurgical Treatment of the Ano-rectal Diseases, Injuries, and Malformations. The writer has not hesitated to express decided opinions at variance with those of Dr. Martin, and, as he has done this in a fair and respectful manner, no just exception can be taken, and no apology is necessary.

May 14, 1900.

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* *Medical Record*, June 17, 1899, p. 885.

THE TREATMENT OF PUERPERAL INFECTION.*

By J. B. KILLEBREW, M.D.,
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Puerperal infection is one of the most important as well as one of the most interesting subjects in the annals of medicine and surgery. This is true because every man in general practice has it to deal with; because it causes us greater anxiety than any other affection with which we have to contend; because, in spite of our best efforts, a small percentage of cases will terminate fatally; and, finally, because, if the proper treatment is instituted early enough, not only will nearly all our cases be saved, but in the majority of them the ravages of the disease can be cut short, leaving women who will enjoy good health the balance of their lives, instead of being invalids to whom life is miserable and almost unendurable.

Puerperal infection, used in the broad sense, means any kind of infection occurring in any part of the body during the puerperal period. In this paper, however, I shall use it in a restricted sense and consider only those cases where the infection begins in the uterus. From this point of view, puerperal infection means an infection of the endometrium during the puerperal period.

This infection may be with one or more of the pyogenic bacteria, producing a septic endometritis; or it may be with certain saprophytes, producing a putrid endometritis. The former produces a true septicæmia, while the latter produces a sapræmia.

In putrid endometritis the infection is superficial, and when pure and unmixed with pyogenic bacteria is incapable of producing death. The chief danger of putrid endometritis is that it will become infected with pus-producing bacteria, when, of course, it is converted into a septic endometritis.

In septic endometritis, the infection is at first also superficial, lying upon the endometrium. Later it penetrates the uterine walls and enters the periuterine structures through the lymphatics and veins. If not checked in its progress there will be a general lymphangeitis.

It is a difficult matter to make an early diagnosis between a case of septicæmia and one of sapræmia. The clinical symptoms are almost identical, and the only way of determining the question is by bacteriological examination. Few physicians are expert in making cultures for bacteriological examinations, and, even if they were, valuable time would be lost in making a diagnosis that, for practical purposes, is almost useless. In a case of virulent streptococcus infection so much time would be lost that the infection would probably make progress enough to seriously impair the usefulness of the patient's generative organs, if not ruin them altogether. It is a dangerous thing to hesitate in these cases. We are placing a great responsibility upon our shoulders when we do so. We have the future health and happiness of our patient in our hands. It is our duty to act, and act at once. It matters not if the case be one of septicæmia or of sapræmia, our duty is to treat that case as one of septicæmia. If the case is one of sapræmia, the treatment will not only do no harm, but will effect a cure. This being so, we have no right to waste time in making such a diagnosis.

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* Read before the meeting of the Alabama Medical Association, Montgomery, Ala., April 17–20, 1900.

The treatment of puerperal infection is preventive and curative. As the disease is one of bacterial origin, the treatment, both preventive and curative, must be largely germicidal.

We have means at hand with which we can almost eliminate this dreadful disease from our midst if we will only make proper use of them. With the employment of a thorough and rigid aseptic technique the cases of puerperal infection should be rare indeed. Comparatively speaking, they are already rare. There is not one case now where there were four before the introduction of antiseptics into the practice of obstetrics. I regret to say that this improvement has not been as great in private practice as it has been in hospital work. Before the introduction of antiseptics the percentage of deaths from "puerperal fever," so called, in hospital work was far greater than it was in private practice. Now the percentage of deaths from puerperal infection in the best lying-in hospitals is only about an eighth as great as it is in private work. From this it will be seen that the number of deaths from this cause has been reduced in lying-in hospitals far more than it has in private practice. Now the poorest, filthiest woman in the tenement-house districts of our larger cities, whose general physical condition is the worst, can be taken to a hospital and delivered with less danger of death from sepsis than the cleanest, purest, and healthiest young woman in a private residence. Why is this difference? I believe that it can be explained by the one fact that the technique employed in hospital work is more nearly perfect than that employed in private work. Some will say, no doubt, that it is impossible to observe aseptic and antiseptic precautions in private practice to the same degree as can be done in hospital work. I acknowledge that the technique can not be made so elaborate, but I insist that it can be made just as effective.

The Society of the Lying-in Hospital of the City of New York has an outdoor service where they deliver about twenty-five hundred women a year. This work is confined almost exclusively to the Russian-Jew population living in the tenement-house district on the east side of the city. With the exception, possibly, of the Italians they are the filthiest people living in the civilized world. Their houses are filthy, their clothing is filthy, their bedding is filthy, and their bodies are filthy. In fact, their whole environment is about as unclean as possible. Their food is poor, the atmosphere they live in is foul, and their general physical condition is far from good. Yet with such unfavorable surroundings as these it is a very rare thing for one of them to die from puerperal infection. The success of this institution in the management of these cases is, no doubt, due to the strict aseptic and antiseptic precautions observed. Everything that comes in contact with the parturient woman is sterile and is taken to her home by the doctor who has charge of the case. Nothing in the patient's house is used except the water drawn from the hydrant, a vessel in which it is heated, and a basin for washing the hands. If such excellent results can be obtained under such conditions as there exist, certainly we, in our private practice, should do as well, or even better.

There are so many good methods for the management of a labor case given in the different text-books of obstetrics that it is hardly worth while to speak of it here; but, as the one employed by the Society of the Lying-in Hospital of the City of New York is a good one, and the simplest I know, I shall run over it hurriedly.

When one of the internes connected with the institution is called out to a case of labor, a bag containing the following articles is taken to aid him in handling his case in an aseptic manner: A Kelly pad, a can of sterile vulva pads, a can of sterile cotton, a nailbrush and file, two sterile vaginal douche tubes, a fountain syringe, a jar of green soap, three small porcelain basins, a bottle of bichloride tablets, a tube of sterile tape for tying the cord, a tube of sterile starch, and a bottle of dry sterile gauze squares for dressing the cord.

When the case is reached, the contents of the bag are placed on a table within easy reach of the operator. The Kelly pad is placed under the patient's buttocks. A large tin or porcelain basin is obtained for washing the hands. A solution of bichloride of mercury (1 to 1,000) is made in the small basins. The operator cleanses his own hands first with warm water and green soap, using the nailbrush vigorously, and scraping under the ends of the nails and the groove around their roots with the file. Then the patient's abdomen, external genitals, and thighs are cleansed with soap and water in the same way. It is necessary with these patients to expose them in order that the filth on their bodies may be thoroughly removed. The operator now uses one of the basins of bichloride solution on his hands and another on the external genitals and abdomen of the patient. After using the bichloride on the patient nothing that is not aseptic is permitted to come in contact with her external genitals. The operator again soaks his hands in the bichloride solution for three minutes and proceeds to make an examination. These examinations must be as infrequent as possible. At subsequent examinations it is not necessary to go through with the whole technique again. The hands of the operator should be thoroughly scrubbed, but it is only necessary to wipe off the patient's external genitals with a piece of cotton soaked in bichloride solution.

After the birth of the placenta and membranes they are examined to ascertain that they are complete. If they are, the patient is given a hot vaginal douche of bichloride solution (1 to 10,000) and a pad is placed over the vulva. Nothing more is done except that the fundus is held for an hour to insure good uterine contraction. The vulva pad is changed as often as saturated with blood.

Should portions of placenta or membrane be retained, they are to be removed at once. The hands and forearms of the operator are to be rendered as sterile as possible, and the vagina irrigated with at least four quarts of 1-to-10,000 bichloride solution. One hand is then passed into the uterus, while with the other upon the abdomen the fundus is held steady. After removing all retained material, the interior of the uterus should be irrigated with hot sterile normal salt solution and packed tightly with two-and-a-half-per-cent. iodoform gauze. This should be removed at the end of forty-eight hours and the uterus repacked loosely with the same material. At the end of another forty-eight hours this packing is removed and the patient put upon ergot and quinine.

Most physicians do not agree with me in packing the uterus with the iodoform gauze. In my experience I have never seen any bad result follow its use, and on several occasions I believe it has done good. When the hand is passed into the uterus and retained portions of placenta and membrane are removed, a certain amount of traumatism is inflicted upon the interior of that organ. The report comes from the bacteriological laboratories of Johns Hopkins that it is impossible to render the living hand aseptic. This being so, there is always danger of carrying pyogenic bacteria into the uterus on the hand. Unless some step is taken to check these organisms, they find in the puerperal uterus the most favorable conditions for growth. I prefer to attack these germs, if any have been introduced, before they have had time to do any damage. Hence I pack the uterus. The packing of the uterus in this way, it seems to me, acts beneficially in three ways: it acts as an antiseptic on the interior of the uterus; it prevents hæmorrhage, and, being a foreign body in the uterus, it stimulates uterine contractions.

It may be said that it is impossible to employ such means in private practice as I have suggested; that the delicacy and modesty of the women of the South will not tolerate such exposure. That is true. But it must be remembered that in the best class of private practice we are dealing with people who are cleanly in their habits: women who will take a bath just at the onset of labor. This being so, the soap-and-water part of the procedure can be dispensed with; but, as the bichloride solution can be used without any exposure of the patient, I believe it is our duty to use it, even if it is necessary to expose the patient to a certain extent. I believe the women of the South are too sensible to refuse to submit to any treatment that they are convinced is necessary. We can never convince them, however, unless our efforts are united. When one physician tells a woman that a certain thing is necessary, and another, whose reputation is just as good (although he may not deserve it), tells her it is all nonsense, we can never hope to convince her that anything is necessary. I know that all these things are repellent to a woman of refined sensibilities; but if we can reduce this mortality of one per cent. down to nothing, to say nothing of the morbidity in those cases that do not die, by making our women submit to these repulsive things, it is our duty to do so. We are responsible to them for their lives and their health; our reputation is at stake, and I do not believe that we should permit any false notion of delicacy on the part of our women to prevent us from doing what we know to be our duty.

As yet it is impossible to make any technique perfect, and in spite of every precaution a certain percentage of parturient women will become infected. When this is the case the treatment must be promptly begun and thoroughly carried out. It makes no difference if the case is one of sapræmia or one of septicæmia, the indications are the same, and it is supreme folly to waste time in the determination of a question which is immaterial in the treatment of the case. It is a fact that the majority of women who have an elevation of temperature after delivery will recover without treatment in a few days; but among the remainder there may be some cases of virulent streptococcus infection which will die in a few days if not treated. I prefer, always, to employ a method of treatment that will do good in all cases and harm in none.

When from a few hours to several days after a woman is delivered she has a chill with a sudden rise in temperature, the cause of the disturbances must be placed in the uterus. Malaria must be eliminated by thoroughly cinchonizing the patient. Intestinal toxicosis, which is a frequent cause of elevated temperature in a parturient woman, must be eliminated as a causative factor by thoroughly irrigating the bowel with normal salt solution. If the uterus is proved to be the offending organ the following treatment should be instituted at once. The time element is here important. Treatment should be begun, if possible, before the infecting organisms have had time to penetrate the endometrium.

We have ceased now to attack the mortality statistics alone, and are attacking the morbidity statistics in these cases. If treated by palliative measures alone, many of these women will recover from the attack, but always with damaged organs, while if the proper treatment is instituted in time the usefulness of the organs can be saved in many cases. My conception of puerperal infection is that it is a surgical disease and should be treated upon surgical principles.

Treatment.—As putrid infection is always superficial and septic infection is at first superficial, if the case is seen early after the onset of the symptoms the treatment should be begun by giving intra-uterine irrigations of normal salt solution or saturated solution of boric acid. If this treatment is begun early enough, before the infecting organisms have penetrated the decidua, it will cure; but, if the organisms have penetrated the decidua, some antiseptic which will be absorbed more rapidly than the invading germs can advance must be used. Iodine from iodoform gauze is the best antiseptic for this purpose. If the infecting bacteria have penetrated deeper into the walls of the uterus or invaded the periuterine structures, curettage and opening of Douglas's *cul-de-sac,* with the proper application of antiseptic dressings, must be resorted to.

In all this work the strictest aseptic precautions must be observed. The field of operation, the hands and forearms of the operator and of his assistants, the instruments, and all dressings must be made sterile.

Irrigations.—Before giving the irrigations the vulva should be shaved. The patient is then placed on a table in the lithotomy posture, with a Kelly pad or some other device for catching the irrigating fluids placed under her buttocks. The patient's abdomen, pubes, perinæum, and thighs are scrubbed with soap and water, then with a two-per-cent. lysol solution, and finally with 1-to-5,000 bichloride solution. The vagina is douched with at least a gallon of 1-to-10,000 bichloride solution. The operator and assistants should cleanse their hands and forearms by either the permanganate-of-potassium or chloride-of-lime method. All instruments, dressings, douche bags, etc., must be sterilized in the usual way.

No anæsthetic is required. The perinæum is drawn back with a short Jackson posterior retractor. The anterior lip of the cervix is caught with a pair of blunt-pointed bullet forceps and drawn down as far as possible. The largest sized return-flow irrigating tube is passed into the uterus to the fundus, great care being taken that it does not touch any part of the patient's body before being introduced into the uterus, and the greatest gentleness being used so that the endometrium will not be bruised or lacerated. The tube connected with the douche bag is now attached to the douche tube, and at least eight quarts of sterile normal salt solution or saturated solution of boric acid at a temperature of 110° or 115° F. used. The douche bag should be at least five feet above the patient, so as to produce a strong current in the tube. Frequently this one washing will suffice to effect a cure. If, an hour after the douche is given, the patient's temperature is not normal, it is to be repeated, and so on until six such douches have been given.

It is best to use a return-flow irrigating tube for the reason that it is very necessary to have a free return flow of the irrigating fluid; otherwise the detritus in the uterus is not so easily and thoroughly washed out. If there is any obstruction to the return flow, there is also great danger of forcing some of the irrigating fluid out through the Falloppian tubes into the peritoneal cavity, carrying with it some of the septic material from the uterus and setting up a septic peritonitis, the very thing we are trying to prevent.

It is much better to use weak antiseptics or even plain sterile water as irrigating fluids than to use the strong antiseptics.

These irrigations do good more by cleansing mechanically than by any antiseptic properties which they possess. The strong antiseptics, when brought in contact with a raw surface, destroy more or less tissue and produce a certain amount of slough. No one will say that it is possible to remove *all* bacteria with these irrigations, and when the strong antiseptics are used the slough which they produce acts as an excellent culture medium for the growth of the bacteria that are left.

If, an hour after the last douche has been given, the patient's temperature is still elevated, it is an indication that the infecting organisms have penetrated the decidua, and the uterus should be packed with ten-per-cent. iodoform gauze in the following way: The patient is placed in the lithotomy position and the usual aseptic and antiseptic precautions are observed. No anæsthetic is necessary. The perinæum is retracted and the uterus drawn down as in giving the intra-uterine douches. The end of a strip of iodoform gauze four inches wide is caught with a pair of Hunter's sponge forceps or any other blunt forceps and carried to the fundus. The strip is inserted until the uterus is firmly packed, the end of the gauze hanging through the cervix into the vagina. The vagina is then filled with the same and the patient put to bed.

The uterine secretions act upon the iodoform in the gauze, setting free iodine, which is absorbed and acts as an antiseptic as it passes through the tissues. That free iodine is liberated and absorbed is proved by the fact that it is present in the urine within a few hours after the packing is done.

If the temperature is normal twenty-four hours after the uterus has been packed, the gauze should remain twenty-four hours longer, or forty-eight hours in all, and then removed. It should not be renewed.

If at the end of twenty-four hours the temperature is not normal, it is an indication that the infection has passed beneath the endometrium or even invaded the periuterine structures. In this event curettage and opening of the *cul-de-sac* must be resorted to.

Curettage.—In order that the uterus may be thoroughly curetted, it is always advisable to employ an anæsthetic in doing this operation. The patient is placed in the lithotomy posture, and the external genitals are cleansed as heretofore stated. As the patient is anæsthetized the vaginal cleansing can be more thorough. It is first scrubbed out with one-per-cent. lysol solution, using an ordinary soft jeweler's brush for this purpose. Then it is irrigated with 1-to-5,000 bichloride solution. The perinæum is retracted and the cervix drawn down and steadied with a bullet forceps. The largest sized sharp curette is passed into the uterus and the whole of the interior of the organ systematically curetted. No force is necessary, as the decidua is soft and comes off easily. As the uterus is soft and friable, some care must be exercised to avoid puncturing its walls. The bleeding will be profuse, but it need not be heeded. After having been thoroughly curetted, it is irrigated with hot sterile normal salt solution, then firmly packed with ten-per-cent. iodoform gauze and the vagina comfortably filled with the same. As the patient is under the influence of an anæsthetic, a wider piece of gauze can be inserted into the uterus than when the packing alone was done without an anæsthetic. At the end of forty-eight hours this dressing is removed and the uterus and vagina are repacked lightly with five-per-cent. gauze. After forty-eight hours more this dressing is removed and no more applied. The patient is then put on quinine and ergot. This will cure all cases of sapræmia and many cases of septicæmia; but in some cases of septicæmia the infection has invaded the peri-uterine structures. When this is so, this treatment will not necessarily cure. If the symptoms have not subsided within forty-eight hours after curetting, the *cul-de-sac* must be opened and antiseptic dressings applied to the pelvis. When curettage is done for *sepsis,* it is always best to open the *cul-de-sac* at the same time. It is impossible to tell how far the infection has traveled, and, as the operation is a simple one and devoid of danger, I prefer to employ it early, lest the infection get away from me and do irreparable damage.

As the peritoneal cavity is invaded in this operation the aseptic precautions observed should be the most rigid. The patient is, of course, anæsthetized and is placed in the lithotomy posture. The perinæum is retracted and the cervix drawn down as in curettage. When the cervix is drawn down the vaginal mucous membrane is put on the stretch, and it is impossible to locate the exact line where it is attached to the uterus; but by shoving it back slightly a fold appears on the vaginal mucous membrane just where it is reflected from the uterus. The position of this fold is noted or marked by a slight cut. The cervix is then drawn down again, and with a short, blunt-pointed pair of scissors, curved on the flat, an incision is made through the vaginal mucous membrane *only,* at the line marked. This incision is transverse to the cervix and about half an inch long. No more cutting is done. After dividing the vaginal mucous membrane it is an easy matter to push the end of the finger through the remaining tissues into the peritoneal cavity. In doing this the ball of the finger should be used and not the nail. If the operator is at all careless, there is some danger of wounding the rectum if the sharp nail is used.

When the finger is removed there is a discharge of fluid from the peritoneal cavity. The character of this should be noted. Having entered the peritoneal cavity, the posterior retractor is removed, the uterus drawn well down, and a digital examination of the pelvic organs made. This is done through the opening in the *cul-de-sac.* If any adhesions exist, they are carefully broken up, This exploration and breaking up of adhesions should be as thorough as possible, the object being to open all lymph spaces in order that the secretions may drip down upon the dressings to be applied and drained off by them instead of being confined between the planes of adhesions that formerly existed, and also that all possible surface for the absorption of iodine from the iodoform gauze may be obtained.

If there is an effusion of lymph by the peritonæum, it shows that there is a fight going on between the invading bacteria on one side and the living cells of the body on the other, and it is the duty of the operator to assist the latter. Having examined all the organs and satisfied yourself as to their condition, and having broken up all adhesions, the first finger of each hand is passed through the opening in the *cul-de-sac,* turned back to back, and the opening stretched to the level with the sides of the cervix. Everything is now ready for the application of the dressings, which should be done as follows:

A long Jackson's or a Péan's retractor is used for retracting the perinæum; the uterus is held forward with a Pryor-Péan trowel, and each side is retracted with suitable lateral retractors. The end of each of these retractors passes through the opening in the *cul-de-sac,* so that when traction is made the sides of the opening are separated as much as possible.

The iodoform gauze, ten per cent. in strength, is cut in strips five inches wide and a yard long. These are folded until each piece is five inches long, about an inch wide, and half an inch thick. One end of this folded piece of gauze is caught with a pair of long dressing forceps and passed through the *cul-de-sac* opening into the pelvis to the level of the Falloppian tubes, the other end remaining in the vagina. This piece of gauze is drawn well to one side with one of the lateral retractors and another strip inserted in the same way. This procedure is continued until the pelvis is well filled with gauze and the uterus practically surrounded by it. All retractors are now removed from the opening and the vagina filled.

If the patient's pulse runs above 140 beats to the minute under the anæsthetic, an intravenous infusion of from thirty-two to eighty ounces of normal salt solution should be given before she is taken from the table. This not only stimulates the heart, but causes an improvement in the action of the kidneys. Strychnine should be given in small doses, about a fortieth of a grain every four hours. If alcoholic stimulants are indicated, brandy or champagne is best. In nearly all of these cases the amount of muddy toxine-laden serum drawn from the pelvis by the gauze is great, and unless some provision is made for this loss of fluids the patient will feel it. In these cases, therefore, it is always well to give high saline enemata. From eight to sixteen ounces should be given from every three to every eight hours. Water is given as soon as the nausea produced by the anæsthetic has subsided, usually about four hours after the patient comes off the table. I would begin by giving an ounce every hour and increase the amount gradually. Sometimes the addition of a little lemon juice—five drops to an ounce of water—seems to make it more palatable and assists in controlling the nausea.

If the vomiting is persistent, an ounce of champagne every hour is the best remedy. The urine is drawn by catheter every three hours and tested for albumin and iodine. No food is allowed for eighteen hours.

The first nourishment given is a little chicken jelly or beef juice. The bowels are moved at the end of forty-eight hours. The vaginal and uterine dressings are removed in from forty-eight to seventy-two hours. The vaginal packing is renewed, but the uterine is not, unless the symptoms of sepsis persist. The *cul-de-sac* dressing is removed at the end of a week and a lighter one applied. After this it is renewed every three to five days until the opening closes. When the opening has closed, ichthyol or boroglycerin tampons are used to hasten involution.

Pryor, of New York, in conjunction with Dr. Jeffries, the bacteriologist at the New York Polyclinic, has made a pretty thorough investigation of the effect which these dressings have upon the streptococci found in these cases. In every instance it was found that they completely sterilized the field of operation, even though the pus was found free in the peritoneal cavity in one case. This was usually accomplished by the third dressing, but in one case it was not until the fifth had been applied.

I do not claim any originality for the different means employed in this method of treatment. The method of procedure is that which I would employ, and is based upon my observations while at work in the hospitals of New York. I believe that the treatment is based upon sound surgical principles, and if properly carried out will cure most cases.

The application of the *cul-de-sac* operation to these cases is distinctly Pryor's. He was the first to use it, and the credit belongs to him. He has employed it in the treatment of eighteen cases of streptococcus puerperal infection and has lost one patient. That woman was in a moribund condition when brought into the hospital.

"Osteopathic" Examining Boards.—The osteopaths of Ohio wanted a State examining board of their own. All other empirics or quacks would doubtless also like to be examined by boards of their own choosing. This would make all examining boards superfluous.

FORMALIN AS AN ANTISEPTIC IN GENERAL SURGERY, GYNÆCOLOGY, AND OBSTETRICS.*

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Since the establishment of the germ cause of suppuration and Professor Lister's introduction of carbolic spray and dressings in surgery, in the early seventies, and the general adoption of the so-called antiseptic treatment of wounds the world over, the profession has been constantly in search of an antiseptic, potent as a bactericide, yet less toxic and irritating than those generally employed. The organic and inorganic worlds have been ransacked, and substances innumerable have been employed with varied results.

When a great new procedure is discovered and becomes popular, it is generally overdone. This was the case with antiseptic surgery. Wounds of all kinds were washed and filled and covered with antiseptic solutions and powders of every description, often to the positive detriment of the healing process, and not infrequently to the poisoning of the patient.

Conspicuous among these substances is the bichloride of mercury, which, with all its objectionable qualities, has stood the test of years as perhaps the best of its class, and is regarded as a standard of germicidal potency. But, while it is an efficient antiseptic, it is also a powerful irritating poison, and great care is necessary in its use.

The profession in time came to realize that Nature was the healer, and that any kind of foreign substances in a clean wound was but a detriment to be rid of first. So antiseptics are gradually finding their true and legitimate place, that of purifying the unclean. But it took the profession many years to learn that it is much easier to wash away filth than to disinfect it *in situ;* and ours may be called the era of soapsuds.

In the polished language of Dr. Howard Kelly: "Only by a slow process, considering the vast number of experiments conducted in all our hospitals, have we grown out of an antisepsis of toxic drugs into a simpler antisepsis of moist heat and saponaceous detergents." This is especially true of cleansing the hands and the field of operation on the surface of the body. Yet, after scrubbing the hands for fifteen minutes in soap and water, followed by the use of as strong an antiseptic as the skin will tolerate, they are none too clean.

The pendulum is now swinging toward the other extreme. There is a strong tendency in the profession to laud asepsis and decry antisepsis. It is common to hear the remark, "I believe in aseptic surgery, but not in antiseptic surgery."

Asepsis is the ideal condition. But the ideal is usually just a little beyond our reach. So long as we have dirty hands to use and infected wounds to treat, we shall have to employ antiseptics before anything approximating an aseptic condition can be obtained to start with. Therefore I think I am safe in the assertion that we shall always be in need of an efficient antiseptic to cleanse soiled hands and infected wounds. It is the object of this paper to call the attention of the profession to an antiseptic, not altogether new, but not yet receiving the attention which its great value and superiority deserve.

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* Read before the Iowa State Medical Society, at Des Moines, May 17, 1900.

I speak of formalin, the commercial name given by Schering to a forty-per-cent. watery solution of formic aldehyde, or formaldehyde, as it is usually called. Formaldehyde is produced by the dehydration or oxidation of methylic alcohol or wood spirit. The germicidal powers of formaldehyde were discovered by Trillat in 1888. It is a gas, and in this form is now everywhere used as a practical and efficient house disinfectant. In formalin, the saturated solution of this gas, we have a practical antiseptic, applicable to the whole realm of surgery and medicine, as wide-reaching in extent as efficient in its action, and as practical in its application as the gaseous form is to the disinfection of dwellings and fomites.

A somewhat extended use of formalin in almost every variety of cases in which antiseptics are employed, together with observing its use in the practice of my *confrères* at St. Luke's Hospital, particularly that of Dr. Rustine and Dr. Ruml in their railroad surgery—a class of cases in which it is especially valuable—has convinced me that it comes nearer meeting all the requirements of a perfect disinfectant than any other substance yet employed. Its germicidal potency ranks with that of the two or three most efficient bactericides, and its inhibiting power is probably greater and more lasting than that of any of them. It is not only an antiseptic, but a deodorizer as well; and solutions of potent strength are much less irritating, both to the hands and to wounds, than any other equally efficient antiseptic of which I have any knowledge. It is not injurious to instruments, and, most important of all, it is practically innocuous. Large cavities can be freely irrigated, even the peritoneal cavity, and a considerable quantity of the solution can be allowed to remain without injury or danger of toxic effect.

Formalin in sufficient strength coagulates albumin and hardens animal tissue. For several years its chief use was as a fixing agent in the laboratory. The mistake is generally made, in the beginning of its use as an antiseptic, of employing too strong a solution. The surface of the wound is hardened and the healing process retarded. This is not only harmful but entirely unnecessary. A solution strong enough to completely inhibit the development of pus germs may be used to cleanse, wash out, and pack pus cavities and sinuses without interfering in the slightest degree with healthy granulation processes.

I have seen in cases of mashed-up arms and legs a mass of suppuration turned into an odorless, healthy, granulating condition, as if by magic, by free drainage and packing with gauze saturated with a solution of formalin; and large areas of denuded bone, covered by damp fluff in the same way, and protected by cotton and a plaster cast, cover up with healthy granulations when it seemed absurd to expect it. The explanation lies in the fact that the saturated gauze protected in this way slowly liberates its formic aldehyde in sufficient quantities for days at a time to inhibit the growth of septic germs, without interfering with the vital processes of tissue repair.

I have seen railroad injuries of the severest type, where the soft parts were contused and pulpified and the bones comminuted, treated in this way from the beginning, by my associates Dr. Ristine and Dr. Ruml, and the dead tissue dry up and separate, and the processes of repair go on to recovery without a drop of pus ever forming.

The solutions that have generally been recommended are too strong. There is also much uncertainty of statement in the scanty literature of the subject as to just what is meant by a given percentage solution. The strength of a solution depends on the amount of formaldehyde it contains, yet one writer will speak of a fourth-per-cent. solution of formalin, and another of a fourth-per-cent. solution of formaldehyde.

We must take into account that the latter is two and a half times stronger than the former. Formalin is a forty-per-cent. saturation of formaldehyde. But formalin is a definite substance, and is the tangible form in which we employ formaldehyde as an antiseptic in surgery; hence the percentage of a given solution should be that of formalin and not that of formaldehyde.

I have worked out a double table, which gives both the formalin percentage and the formaldehyde strength to one thousand parts, as we are in the habit of expressing the strength of antiseptic solutions. For illustration: A fourth-per-cent. solution of formalin equals a 1-to-1,000 solution of formaldehyde. The quantity of formalin to make such a solution is so small that a dilution of some known strength is found to be convenient from which to prepare the working solutions as they are needed.

I have found a four-per-cent. solution most convenient for this purpose: first, because it is easy to make by adding an ounce of formalin to a pint and a half of sterilized water; or five ounces to seven pints and a half fills the gallon bottle ready for use; secondly, this four-per-cent. solution mixes in even ounces and half ounces to make the ordinary solution used in practice.

A table showing this in full is given on the next page.

The solutions of formalin we commonly use are the eighth, the fourth, and the half per cent.; the two former for washing infected wounds and irrigating and packing cavities and sinuses, and the latter for disinfecting the hands and the surface of the body.

They contain the formaldehyde strength of one two-thousandth, one one-thousandth, and one five-hundredth respectively, are fully equal in germicidal power to the corresponding solutions of bichloride of mercury, and have vastly more inhibiting power when used in moist dressing and packing. The half-per-cent. solution is of about the right strength for the hands. Healthy hands can use it *ad libitum* without the slightest injury or irritation. If the hands have been in septic material they may be washed in a one-per-cent. solution; but if it is used frequently it is likely to roughen the epidermis. Occasionally a person with eczema of the hands finds formalin very irritating; but such hands can not bear any kind of antiseptic well.

Formalin, four-per-cent. solution.

Formalin, five ounces; sterilized water, seven pints and a half.

Working solutions:

$\frac{1}{2}$ oz. 4% solution to 15$\frac{1}{2}$ oz. water = $\frac{1}{8}$% formalin = $\frac{1}{2000}$ formaldehyde.
1 oz. “ “ “ 15 oz. “ = $\frac{1}{4}$% “ = $\frac{1}{1000}$ “
1$\frac{1}{2}$ oz. “ “ “ 14$\frac{1}{2}$ oz. “ = $\frac{3}{8}$% “ = $\frac{1}{666}$ “
2 oz. “ “ “ 14 oz. “ = $\frac{1}{2}$% “ = $\frac{1}{500}$ “
2$\frac{1}{2}$ oz. “ “ “ 13$\frac{1}{2}$ oz. “ = $\frac{5}{8}$% “ = $\frac{1}{400}$ “
4 oz. “ “ “ 12 oz. “ = 1% “ = $\frac{1}{250}$ “

In gynæcological practice formalin is extremely useful. In cervical and vaginal operations, where the field of operation is liable not to be aseptic, a daily douche of eighth-per-cent. or fourth-per-cent. solution prevents all tendency to suppuration; and the residue retained in the *cul-de-sac,* which must be carefully washed away in the case of most antiseptics, is allowed to remain and adds to its efficacy. In curettage, the uterine cavity may be freely irrigated with a fourth-per-cent. solution.

Simple and specific vaginitis and cervicitis are most successfully treated by injections of a fourth-per-cent. and a half-per-cent. solution; the surface being mopped at intervals with a stronger solution if necessary.

To disinfect the surface for abdominal and other operations, after the usual scrubbing with soap and water, ether and alcohol, etc., a compress of gauze saturated with a fourth-per-cent. solution is applied, covered with gutta-percha tissue, and held in place with a binder. This will probably come nearer sterilizing the follicles of the skin than any other method.

In cases of pelvic abscess, pyosalpinx, appendicitis, etc., when purulent matter has escaped into the peritoneal cavity, it can be freely irrigated with one two-thousandth or one one-thousandth formaldehyde in normal salt solution, and a pint or two allowed to remain with safety and advantage.

Dr. J. C. Webster, of Montreal, now of Rush Medical College, Chicago, was the first, so far as I know, to introduce this practice, and with the most gratifying results. He used in some instances a solution of one five-hundredth formaldehyde strength, although he regarded this as unnecessarily strong.

The conditions in which formalin is distinctively superior in every way to any other antiseptic is in the packing and drainage of pus cavities and sinuses, etc., the cases in which iodoform gauze has been so much employed. There is not a condition that I know of in which iodoform is used but formalin will answer the purpose better. Its inhibiting power is a hundredfold greater; it deodorizes a foul wound, whereas the other only adds a stronger and more disagreeable smell to the one already present.

Iodoform is one of the feeblest antiseptics—in fact, it must be sterilized itself before it is fit to use at all; and, if used freely, is more likely to poison the patient than the microbes. There is no good reason why this “skunk” of modern surgery should not be banished from respectable society. It has nothing better upon which to base its claim for the popularity it has so long held with the profession than the onion poultice has among the laity. Two years since I bought five yards of iodoform gauze and I have it yet, and expect it to be an abundant supply for all future use.

In obstetric practice formalin meets all the requirements of an antiseptic to disinfect the hands and the external parts, and as a vaginal douche when one is needed. In difficult deliveries, where there is a great deal of handling and bruising of the parts, or laceration of the perinæum or cervix, a daily douche of an eighth- or a fourth-per-cent. solution is of great value. It purifies the parts, lessens the liability of secondary infection, and deodorizes the lochia, which become very offensive in some of these cases. A perinæum properly sutured invariably heals perfectly under this treatment, and an immediate operation on the cervix would be much more likely to be successful than with any other method. In these cases, as in all others, the innocuous character of formalin adds greatly to its merit.

Another recommendation for formalin as a general antiseptic, though much less important than its utility, yet worthy of consideration, is its cheapness. Like many other things, it is becoming too cheap. It is sold in bulk, under various names, as low as two dollars a gallon; but I should not recommend buying it in this way.

These preparations are of uncertain strength, which is a matter of great importance; and formalin has a tendency to constantly diminish in strength. It is best to get Schering's or some equally reliable make in original pint bottles. This is of uniform forty-per-cent. formaldehyde strength and will not deteriorate before the bottle is used.

A pint will make fifty gallons of a fourth-per-cent. solution, which is the one generally used, at a cost of less than a cent a gallon.

A solution approximating a fourth per cent. can be made at once by adding a drachm of formalin to three pints of water.

THE CLOSURE OF A CLEFT PALATE BY LINGUAL IMPLANTATION;

A PRELIMINARY REPORT.

By CARL BECK, M. D.,
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In a case of cleft palate in which the Langenbeck as well as the Davies-Colley operation failed to cover the immense congenital defect I recently implanted a portion of the tongue. The ease with which even extensive resection of the tongue is tolerated by carcinomatous patients induced me to form a lateral flap from the tongue, which, after being turned and reflected near the base, was united with the freshened edge of the cleft of the same side.

The gaping wound margins of the side of the tongue were accurately united then and the floor of the mouth and the lingual angle packed with iodoform gauze. During the after-treatment a mild solution of boric acid was sprayed through the nostrils every fifteen minutes. Liquid diet was given exclusively. After nine days the basis of the flap was severed and one week later the flap was united with the opposite margin of the cleft according to the usual uranoplastic procedures.

THE LARYNGEAL MANIFESTATIONS OF TYPHOID FEVER.

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Although the importance of typhoid fever from a pathological, ætiological, and therapeutic standpoint has long been recognized and accorded painstaking scientific research, the specific manifestations of the disease in the tissues of the upper respiratory tract have been woefully neglected. While the recognition of these lesions antedates by nearly half a century the establishment of the individuality of the general disease, they have been given almost no consideration by the medical profession at large.

In 1808, Bayle reported two fatal cases of "severe putrid fever" in which striking laryngeal disturbances had been manifest. One showed perichondritis, the other a submucous inflammation without perichondritis, and in both subjects a swelling of the spleen and ulcerations of the intestines were found. Similar cases, more carefully observed, were then reported by Bouillaud (1825), Louis (1829), Elster, and Albers and Chomel (1834). Hasse (1831) attempted to differentiate these lesions into three distinct varieties: catarrh, erosions, and perichondritis. Rokitansky (1842) claimed the existence of a close relationship between the laryngeal and intestinal lesions.

From this time on, constant additions have been made to the literature of the subject until to-day, when the close connection between the mother disease and the laryngeal affections is well understood, and only the pathogenesis remains in doubt.

Frequency.—While opinions differ as to the frequency with which these lesions occur, statistics prove them to be far commoner than is generally believed. Ulcerations were found by Schrotter in three per cent. of all typhoid cases; by Heimer, in 1.57 per cent.; by Griesses, in 14.74 per cent.; by Holscher, in 5.3 per cent.; by Landgraf, in 29.2 per cent. (ninety-six males), and in 18.5 per cent. (forty females). To the varying virulency of the different epidemics is due the great discrepancy in these statistics.

This statement is substantiated by the fact that these percentages are greatly increased when based upon postmortem findings. A high death-rate and severe laryngeal complications ever go hand in hand.

In the Berlin Pathological Institute Campe made 211 autopsies and found the larynx involved 67 times, over thirty-one per cent. Dopfers, in Munich, found ulcerations 72 times in 732 cases; Kanthack and Drysdale, 14 times in 64 cases, and Hoffman in eleven per cent. Ulcerations without involvement of the cartilage occur in about five per cent. of all fatal cases. Landgraf, basing his estimates upon all known statistics, maintains that the larynx is involved in at least eleven per cent. of all fatal cases.

Since the introduction of the cold-water treatment these percentages have been greatly reduced. Thus, in 1,420 cases treated according to the Brand method, Betke found ulcerations in but 1.7 per cent. In Goldhammer's clinic there were but 16 laryngeal cases in a total of 783. This seems to substantiate Ziemssen's claim that the vulnerability of mucous membranes depends to a great degree upon the bodily temperature.

Ætiology.—The ætiology of these processes has long been in doubt. At first they were credited to a modification of the normal nutritive processes due to the presence in the system of typhoid ptomaines.

The next theory advanced was Rhulc's, which maintained that these ulcerations were the result of decubitus; the mechanical irritation consequent upon swallowing, speaking, and coughing when the tissues are in a state of greatly lowered vitality. That decubitus may be a causative factor in some instances is not to be denied, but it is evident that it is not of primary importance; for, otherwise, how could we explain the fact that like conditions are rarely found in other slow diseases and that surfaces not subject to friction are commonly involved?

In 1842, Rokitansky adduced the theory that these laryngeal phenomena are local manifestations of the general disease and not mere accidental complications; in other words, a true metastasis of the poison to definite parts of the laryngeal structures. This, with certain exceptions, is undoubtedly the correct hypothesis.

True typhoid infiltrations and ulcerations attack the larynx and run their course in the same manner as do like processes in the intestines, corresponding tissue being attacked in each case, adenoid tissue in the former and lymph follicles in the latter.

This is in accord with the views of Hoffman, who does not consider typhoid to be a disease of the intestines alone, but of the entire lymphatic system in which the poison is localized. To prove that Hoffman's views are in all likelihood correct I shall quote briefly from Mallory, who in a recent paper describes careful microscopic examinations of the various organs taken from typhoid subjects: "Summing up the lesions thus far described, we have as the essential lesion of typhoid fever a diffuse proliferation of endothelial cells, giving rise to large epithelioid cells characterized by the possession of marked phagocytic properties. This proliferation is most marked in the lymphoid tissue of the intestine, in the mesenteric lymph nodes, in the spleen, in the bone marrow, and in the liver, but it may also be found to a varying extent in the lymphatics all over the body, as shown by examination of the lymphatics of the heart, lungs, testicles, and pia-arachnoid."

In this system occur the first and never-failing changes. In the first days of the disease we shall find in all cases a swelling of the tonsils and posterior lingual glands coincident with the swelling of other lymphatic structures. In addition to the direct action of the bacilli upon the tissues in which they are localized, there is another, due to the poison secreted, which causes marked disturbances in the nutrition of the mucous membranes, and especially in those of the respiratory tract.

Eppinger separated the laryngeal lesions into two great groups: the one identical with the intestinal lesion and the other consequent upon the action of secondary bacteria. The great group of symptoms accompanying typhoid fever may thus be due to one or more of the five following causes: Direct infection: a specific lesion identical with that of Peyer's patch and due to a metastasis of the poison to the adenoid areas of the respiratory tract.

Non-specific Lesions.—(*a*) Alterations of metabolism due to the presence of ptomaines; (*b*) secondary bacteria; (*c*) decubitus; (*d*) diphtheria.

In 1880, Strümpell wrote: "These severe laryngeal affections in typhoid fever are regarded by some authorities, especially by Klebs, as always the direct effect of the infecting poison, but in many cases they are probably due to an invasion of staphylococci."

Since then advances have been made which render it practically certain that the *specific* ulcers are due to the Gaffky bacillus, and that the *Staphylococcus flavus* and *aureus*, which are always found in large numbers, are a secondary infection.

At a meeting of the London Laryngological Society in 1896 a case was reported where the sputum of a man suffering from typhoid laryngitis produced typhoid in two other individuals. In one of these cases laryngeal ulcerations developed, and microscopic examination demonstrated the Gaffky bacillus. This was proof positive of its specific nature.

Pathology.—It is of primary importance to distinguish clearly at the outset between the specific typhoid lesions and those occurring accidentally, or through disturbances brought about by alterations in nutrition, due to the typhoid ptomaines, but not identical with the processes in the lymphatic system. The first is much rarer than the second form.

The *specific* lesions are limited to those adenoid areas first described by Rokitansky and are characterized in the beginning by marked swelling. The more prominent of these adenoid masses are found in the sinus pyriformis and at the base of the arytænoids, where they are known as the tonsilla laryngea and tonsilla sinus pyriformis. Smaller areas occur in the ventriculus Morgagni, at the anterior commissure, in the spatium interarytænoidium, on the false cords, and upon the inferior part of the posterior epiglottic surface. As before stated, the process in these structures is identical with that in Peyer's patches.

Mallory * writes: "The latest views in regard to typhoid fever are those expressed by Rippert in his *Lehrbuch der pathologischen Histologie*, published in 1896. He maintains that the primary swelling in the intestines and mesenteric lymph nodes is due to the typhoid bacilli getting into the lymph sinuses and causing an acute inflammatory exudation of serum and leucocytes into the outer portion of the lymph nodules and the adjoining tissues. After a certain time the exudation disappears, and is followed by an intense desquamation of the endothelial cells lining the reticulum of the lymph spaces. These cells are occasionally phagocytic. The real lymphoid nodules of the lymphatic apparatus, according to him, play no part in the process. Later, necrosis and sloughing of the newly formed tissue occur, and repair by granulation tissue follows from the base of the ulcer."

The ulcers thus formed are always crater-shaped and have prominent and infiltrated edges. No matter how large they may become, either through a degeneration in continuity or the confluence of two or more contiguous ulcers, these characteristics are retained. The secretions from these ulcers may be of a hæmorrhagic character. Even in those cases which show a wide destruction of tissue a remarkable tendency toward recovery is observed. The Gaffky bacillus has in a few cases been found in ulcers of this type.

Non-specific Ulcers.—(*a*) Catarrh; (*b*) erosions; (*c*) perichondritis. The so-called catarrh that occurs so generally through the respiratory tract in typhus abdominalis is not of a diffuse inflammatory character, but a reddening of single circumscribed areas of mucous membrane. At these points the epithelium is thickened, the submucosa is slightly infiltrated, and the capillaries are prominent.

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* *Journal of Experimental Medicine*, November, 1898.

Eppinger writes: "When this inflammation increases in severity it leads to œdema. This œdema occurs most frequently upon the edge of the epiglottis, where, because of the other changes to which it gives rise, it is known as epithelial mycotic necrosis. At this spot the epithelium is separated from the cartilage by a subepithelial layer so thin that slight fissures readily expose the cartilage. The edges of these fissures roll inward and become greatly thickened, thus forming a pocket between them and the cartilage beneath in which dead epithelial cells, blood, and micro-organisms collect. Later this œdematous fluid is discharged, the edges of the membrane return to their normal condition, and the cartilage dies. If, now, the course of the general disease is favorably influenced, the process stops and a thin layer of mucous membrane forms over the denuded section."

The resultant scar persists through life and greatly resembles that of syphilis. The same lesion may occur at other points as well, usually when the fever is of long duration and complicated by pulmonary disease.

These ulcers, in contrast with the specific ones, are but slightly undermined, the edges are covered with normal appearing membrane, and microscopic examination fails to show the slightest trace of infiltration and exudation. While the ulceration is usually superficial, it may extend to the cartilage and cause its complete destruction. In these necrotic areas large colonies of micro-organisms have been found, which Eppinger holds to be the developing typhoid bacilli, although they are probably staphylococci.

Fränkel maintains that these colonies are the cause of the necrosis, but it seems more reasonable to suppose that the failure of nutrition in the membrane is the primary cause, this favoring the development of the bacteria, which do no other harm than to produce some mechanical irritation. The rapidity with which the processes heal when the general disease is mastered lends strength to this opinion. When this is not the case, the ulcers progress until they have caused complete destruction of the cartilage beneath.

Not rarely we find areas of marked thickening in the mucous membrane, together with patches of healthy tissue and ever in connection with like changes in the pharynx. These changes occur on the epiglottis, the false cords, the edges of the true cords, and the posterior wall of the larynx. This condition is independent of inflammation, and depends solely upon the marked disturbance in the circulation which occurs in all cases of typhoid.

All of these processes are occasionally coexistent with diphtheria. The false membrane always covers the epiglottis and pharynx, the trachea is frequently affected, and in many instances the lungs are inflamed. Whether the Loeffler bacillus is the cause of this diphtheria remains yet an open question. In addition to these forms there occur frequently an acute, diffuse, submucous laryngitis and, much more rarely, abscesses of the mucosa. This œdema is always an inflammatory one. In rare cases it occurs without previous ulcerations, but is usually consequent upon such or upon the presence of suppurative processes in neighboring organs—viz., purulent parotiditis and angina Ludovici.

Aside from the acute submucous laryngitis, there frequently develops, subsequent to a perichondritis, a chronic form that depends upon inflammatory hyperplastic processes in connection with disturbances of the blood and lymph circulations. This offers no special characteristics. Perichondritis, without first a break in the mucous membranes through which infection takes place, is rare. A few cases have been reported where with an apparently healthy membrane this did take place (metastatic perichondritis). Whether perichondritis is the result of the presence of the typhoid bacilli is a much-mooted question. While it has been advanced that it results from non-specific changes in the superficial membranes, the fact that suppuration occurring late in convalescence depends upon the presence of the bacilli renders the argument, at least in so far as many cases are concerned, untenable.

Although but one case of tracheal ulceration has been seen, general catarrh is common. As yet no cases of involvement of the nose or nasopharynx, aside from simple catarrh and hæmorrhages, are reported. The pharynx, however, is frequently attacked. Small ulcers, the size of lentils, have been observed on the soft palate, and in a few cases on the uvula and tonsils. According to Bayer, these are especially bad prognostic signs.

Angina is common, but it rarely advances to phlegmon. In a case reported by Comby this did occur; it spread to the larynx and, despite an early tracheotomy, had a fatal termination. The angina occurring in the beginning of typhoid, as well as that form depending upon specific typhoid swelling of the tonsils, can not be told from simple catarrhal angina. Landgraf reports one case which ended with the decline of the fever, but recurred when the patient suffered a relapse.

The specific pharyngeal ulcers, usually from two to six in number, are round or more frequently oval, sharply circumscribed, and surrounded by a reddened zone without particular swelling. The base of the ulcer is covered with a slight yellowish-gray exudate, in which Bayer alone has been able to demonstrate the Gaffky bacillus. They usually appear at the end of the first or beginning of the second week of the disease, though they may come at a much later period. In one case they developed on the forty-eighth day. These inflammatory processes in the pharynx may lead to diseases of the middle ear through the Eustachian tube or to parotiditis by way of Steno's duct.

Cornil and Ranvier say that in many cases the oral mucosa is inflamed and that ulcers from one to three millimetres in diameter appear upon the inner surfaces of the lips and tongue. In these ulcerations one finds the epithelial layer gone and the submucosa partially destroyed. The edges and base of the ulcer are infiltrated with lymph cells.

Symptoms, Prognosis, and Treatment of the Individual Lesions.—A description of the clinical symptoms of the above-described forms is fraught with difficulty, because many of the symptoms are masked by the development of a primary or secondary submucous laryngitis. Many of these lesions, though severe, produce but slight reaction, and even this is uncomplained of, owing to the semicomatose condition of the sufferer. Again, in many cases where pain is manifest, delirium or excessive exhaustion prohibits the use of the mirror. Many of these seemingly innocent conditions which run their course without subjective symptoms may lead to sudden death through a rapidly developing œdema. Especially is this so in the period of convalescence, and hence no patient should be discharged until a careful laryngoscopic examination has shown the tissues to be in their normal condition. From a clinical standpoint a differentiation between the specific and non-specific lesions is unimportant.

Specific Ulcers.—These occur frequently without becoming clinically manifest. As a rule, they are accompanied in the first days by chills and, if severe, by cough and hoarseness. If examined, ulcers will be found at those points where adenoid tissue abounds, the edges will be greatly swollen, and the entire spot covered with a yellowish or hæmorrhagic exudate.

The prognosis in these cases is naturally much worse than in uncomplicated ones. Individual ulcers may heal, but the danger lies in the development of wider and more serious complications. Unfortunately, no procedure is known that will stop the process at the stage of infiltration or cause the developed ulcer to heal. Careful general treatment, with inhalations of a three-per-cent. carbolic solution, gives the most favorable results.

Non-specific Lesions. — Catarrhal laryngitis and pharyngitis never appear before the sixth day of the disease and are accompanied by no subjective symptoms, except perhaps a sensation of slight dryness. This catarrh seldom involves the entire larynx, and is usually confined to the inner surface of the arytænoids, the vocal processes, and the epiglottis. If the epiglottis is involved there will be pain on swallowing, and hoarseness when the cords are affected. Without the laryngeal mirror a diagnosis can not be made. In the early stages it has no prognostic significance, and treatment is without effect.

Mild Epithelial Mycotic Necrosis.—It is rare for a catarrhal reddening to be long existent without the appearance, in the centre of the affected area, of a small gray or yellowish spot. As before related, these usually come upon the free margin of the epiglottis, but may involve other localities, especially the arytænoids. The immediate neighborhood of the necrotic area is always stained a deep red. They never appear before the end of the second week and the laryngoscope alone will demonstrate their presence. The prognosis is usually favorable.

Severe Epithelial Mycotic Necrosis. — Under this head fall by far the greater number of all ulcerative processes. The diagnosis between them and the specific lesions is difficult, but possible when their development can be observed. The most frequent location is the epiglottis; then follow the vocal cords, the arytænoids, and rarely the false cords. There is no definite time for their appearance, but they commonly develop during the second week. Several cases are reported by Landgraf in which they first appeared during a relapse. The subjective symptoms are often surprisingly mild, but hoarseness and some pain on pressure are usually present. Examination reveals just such a picture as that given in the pathology.

From a diagnostic standpoint they are of great value. In referring to those upon the epiglottis, Louis says: "If ulceration, with partial destruction of the cartilage, is found in patients suffering from an acute febrile disease, one can say positively that it is typhus abdominalis." The prognosis is always bad, though recovery may be possible. The severest form of this necrosis comes only in those already beyond hope, and is usually accompanied by like conditions in the pharynx. The process is not influenced by any save general therapeutic procedures.

Diphtheria.—This rare complication generally originates between the second and third weeks of the disease, and in most instances is accompanied by ulcerations, cartilage necrosis, perichondritis, and pneumonia. The chief difference between it and the ordinary diphtheria is the complete absence of enlargement in the lymphatic glands.

The subjective symptoms preceding the occurrence of stenosis are always very slight. Examination reveals the mucosa of the pharynx and larynx reddened and swollen and covered with a false membrane, identical in appearance with that of the genuine diphtheria. The prognosis is absolutely bad, only one case being known where recovery occurred. So far all therapy has been powerless, but experience with antitoxine is lacking.

Laryngitis Submucosa Acuta.—Laryngeal œdema as a primary affection is very rare and always fatal, unless immediate tracheotomy is performed. It generally comes at the end of the second week of the disease, but may develop during convalescence. The symptoms are the same as those of any other acute œdema, be the causative factors what they may. As a secondary affection it is very common and frequently follows some of the various ulcerative processes. It may be localized or widespread, and the time of its development depends entirely upon the process to the existence of which it is due. The severity of the symptoms depends upon the extent of tissue involved. The prognosis is always serious, but ice and free scarification in the slight forms and immediate tracheotomy in the severer will save many.

Purulent Perichondritis.—This may run its course with or without necrosis of the cartilage. The cases where the cartilage is not involved are rare and always fatal, for, where death does not ensue, further changes will always take place. Perichondritis is usually found in connection with ulcerations, yet rare cases are seen in which the suppuration exists in the form of inclosed abscesses. It is a complication that always occurs late in convalescence, and the symptoms are the same as those accompanying perichondritis due to other causes, though usually much less severe. Of the cartilages involved, the cricoid is most commonly affected, then the arytænoids, and the thyreoid least frequently of all. When the cricoid is involved, it is the body alone, in the great majority of cases, that is affected, although in rare instances the entire cartilage may be diseased. In perichondritis of the arytænoids total necrosis is the rule, and in these cases the crico-arytænoidal articulation will be destroyed. In eighty cases of typhoid perichondritis reported by Luning the cricoid was involved forty-four times, the arytænoids twenty-six times, and the thyreoid only ten times. In but two of these ten cases was the thyreoid alone involved; in the remaining eight it was consequent upon other severe laryngeal lesions.

Spontaneous healing with discharge of the sequestrum is rare. All other cases, excluding those subjected to operative procedures, end in death. This usually occurs from asphyxia. This asphyxia may result from a narrowing of the lumen, due to the growing abscess, through a sinking in of one of the walls consequent upon destruction of the cartilaginous framework, or through the lodging of a sequestrum in the air-passage. Without operation the prognosis is absolutely bad. On the other hand, prompt and skillful treatment will sometimes give surprising results. In Bosworth's *System of Laryngology* we read: "Eukovitch adduces a remarkable case of typhoid perichondritis of the cricoid cartilage, and, pointing to the brilliant results obtained in it, and, on the other hand, to the enormous mortality from laryngeal stenosis in general, he lays down the following propositition: 'In all cases of laryngeal stenosis arising from perichondritis in the course of typhoid fever, laryngofissure should be performed in order to thoroughly examine and scrape out the parts, and generally to practise such local treatment as may be indicated by the particulars of the case. In view of the hæmorrhagic tendency in typhoid patients, the operation should be performed by means of the Paquelin thermo-cautery.'"

Paralysis and Spasm of the Cords.—During the height of the disease disturbed innervation of the muscles leads to paralysis of individual muscles and nerves or to various groups of the same. They occur generally during convalescence and offer the same symptoms as paralysis from other causes. No definite prognosis as to ultimate recovery is possible.

Because of the insidious manner in which many of the lesions of typhus abdominalis develop and progress, because of the danger to life which they engender, and because of their grave after-effects, it behooves us to carefully examine each case of typhoid, not alone during the active stage of the disease, but also during the entire period of convalescence, in order that any early trouble may be discovered, and, so far as lies in our power, averted.

Report of Case.—J. B., aged thirty-five, stone-cutter. Previous health good. On May 7th he was taken ill with typhoid fever, the attack proving a serious one. There were persistent hyperpyrexia, tympanites, delirium, and intestinal hæmorrhages. On the eighth day he complained of sore throat, but no examination was made. This soon disappeared, and in the sixth week there was a return of the pain, together with some dyspnœa. Examination revealed an abscess of the left arytænoid. Because of the danger of suffocation, tracheotomy was performed, followed by endolaryngeal incision of the tumor, and the evacuation of a considerable amount of pus.

After recovery the following conditions were found: The left vocal cord fixed in adduction, due to ankylosis of the crico-arytænoidal articulation. The right cord abducted and perfectly rigid, due, no doubt, to a perichondritis that had extended across the median line.

After all signs of inflammation had disappeared dilatation was daily performed and continued for a long time. The cords readily separated, but upon withdrawal of the instrument would immediately fall back into their old positions.

Schrötter's and O'Dwyer's tubes were tried, but without benefit. The tracheal cannula was constantly worn except when the patient was at rest. Even with it in place, hard work could not be performed, and hence its removal was indicated. In order to make this possible the cords were removed piecemeal by the double curette of Heryng, and an opening made sufficiently large to permit free breathing. The patient is now able to do any work, the tracheal opening is closed, and the voice, except for a faint whisper, absolutely destroyed.

A case with almost the same history and result was seen in the clinic of Hajek, in Vienna, four years ago.

The author acknowledges his indebtedness to the following authors, from whom he has freely translated, and especially to Landgraf in the *Handbuch der Laryngologie und Rhinologie:*

Schnitzler. *Klinischer Atlas der Laryngologie.*
Schmidt. *Die Krankheiten der oberen Luftwege.*
Schrötter. *Krankheiten der Luftröhre.*
Burnett. *System of Nose and Throat Diseases.*
Hall. *Annals of Otology.*

VANDEVORT BLOCK.

Plague in Portugal Again.—According to the *New York Times* for June 23d, a fresh case of plague has been reported from Oporto. This city has been free from plague for some months.

THE RÔLE OF PURULENT RHINITIS OF CHILDHOOD IN THE PRODUCTION OF ATROPHIC RHINITIS.

By RICHMOND McKINNEY, M. D.,
MEMPHIS.

Some twenty years ago, that able clinician in diseases of the nose and throat, Dr. Francke H. Bosworth, of New York, first announced his belief that atrophic rhinitis was a sequence to chronic purulent rhinitis of childhood. Since then, although this theory has been not unheatedly contested, Bosworth has unswervingly held to his original view, and only so recently as March 28, 1900, at a meeting of the Laryngological Section of the New York Academy of Medicine, he reiterated this opinion as previously expressed.

A number of capable observers have vigorously controverted Bosworth's contention, and indeed the unsettled status of the ætiology of atrophic rhinitis is best illustrated by the number and variety of opinions as to the cause of this disease.

While I am unwilling to accept as an invariable rule a dictum so arbitrary as Bosworth's, still, I should regard myself as prejudiced beyond reason were I to fail to admit the value of a clinical demonstration recently occurring in my practice which bears Bosworth out in his statement as to the rôle played by chronic purulent rhinitis in the causation of atrophic rhinitis.

On April 28, 1900, there were brought to me from a neighboring town two boys, sons of Dr. W. H. B., of that place. Each of the children had practically the same family as well as personal history. Mother and father both living and well. Dating back several years, both of the boys had been suffering with a purulent discharge from both nostrils. Latterly crusts of hardened mucus were frequently discharged from the nostrils. No similar history could be obtained in either of the parents.

Examination of the patients gave the following results:

Leslie B., aged nine years, well developed physically. Inferior and middle turbinated bodies, and both nares shrunken, showing advanced atrophy. Yellowish-green crusts of mucus clinging to the walls of the nasal cavities. A slight odor. A small quantity of yellow mucopus found in each fossa nasalis. Anosmia. Nasopharynx dry and atrophic. No adenoids.

Hampton B., aged seven years, brother of former, likewise well developed physically. Right naris and inferior and middle turbinated bodies apparently slightly swollen and inflamed. A profuse yellowish discharge, of which patient complained, was apparent from the quantity of muco-pus found in this nasal cavity. There was no crust formation and no odor. Left naris and inferior turbinated body were markedly atrophied; this process was also becoming manifest in the middle turbinated. There was evidence of a tendency to crust formation. A very slight discharge of muco-pus from this naris. The ability to detect odors was not impaired to any marked degree in either naris in this case, the nasopharynx not as yet showing much indication of dryness. No adenoids were present.

One could not wish for cases better illustrative of the atrophic changes being wrought by purulent rhinitis than these. Here are two brothers—in the one we have a clear history, with some evidence remaining, of a former continuous purulent discharge, while there is an existing advanced atrophy of the turbinated bodies. In the other we have the purulent discharge present, with no atrophy in one side, and the atrophic process going on in its fellow. I have several times found atrophic rhinitis in more than one member of the same family, but never before have I had an opportunity to witness a transformation state such as that just described. Furthermore, I should regard these cases as decidedly contradictory of the statement of Herbert Tilley and others that purulent rhinitis of childhood is due to adenoids, for in neither of these cases was there any hypertrophy whatever of the pharyngeal tonsil.

Therapeutical Notes.

A Diuretic Infusion.—The *Journal de médecine de Paris* for May 20th ascribes to Millard the following:

℞ Juniper berries .... 150 grains.
Infuse in 3,000 grains of boiling water and add:
Nitrate of potassium,
Acetate of potassium, } of each..... 30 grains;
Oxymel of squills .... 750 "
Syrup of five roots .... 450 "

M. This amount to be taken in four or five divided doses during the day.

[*Syrupus de quinque radicibus*, or *sirop des cinq racines*, is, according to Foster's *Encyclopædic Medical Dictionary*, "a syrup made of 1 part each of the roots of celery, asparagus, fennel, parsley, and butcher's broom, 30 parts of boiling water, and 20 of white sugar."]

Quinine in Malarial Hæmoglobinuria.—Dr. Thayer, in a discussion at the meeting of the American Medical Association at Atlantic City, said that, while quinine did good in some cases of malarial hæmoglobinuria, in others it did harm. When the parasite was found to be active in the blood of the patient quinine should be given, but if the plasmodium was not to be found it should not be given.

For Sweating Hands.—According to the *Therapeutic Gazette* for June, the *Journal de médecine de Paris* for December 17, 1899, gives the following formula:

℞ Borax,
Salicylic acid, } of each....... 4 drachms;
Boric acid .... 1 drachm;
Glycerin,
Dilute alcohol, } of each...... 2 ounces.

Apply with friction three or four times a day.

THE
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THE PROPOSED NORTH AMERICAN MEDICAL ASSOCIATION.

We understand that a number of representative men among our Canadian brethren have expressed their readiness to enter the American Medical Association in case membership in that body were accorded to them, and that Dr. Reed, the newly elected president of the association, favors their admission. We see no reason why the profession in the two countries should not have a common organization, and we think many advantages would result from its establishment. Such a body would be a North American association, whatever its name might be. Useful as the Pan-American Medical Congress has been and promises to be, it must always, after all, have the inconveniences that are inseparable from a confusion of tongues and from the meetings occurring at long intervals. Moreover, its particular field would not be encroached upon by an association of the physicians of the United States and Canada. The Canadians are more like ourselves than they are like their kindred beyond the sea—not, perhaps, politically, but in their daily life. So far as we have observed, they speak the English language as we speak it; they use a currency that is practically identical with ours; their pursuits in the main are ours; in short, they live as we live. Nowhere on earth is there a people more congenial to us than the people of Canada. The patients of the Canadian physicians are men, women, and children of the same general stamp, with the same varieties, as our own; the diseases prevalent in Canada are those that prevail in the United States, and the differences between the *United States Pharmacopœia* and the *British Pharmacopœia* are so slight that when a Canadian physician mentions a British official preparation there is to us no obscurity as to what he means, and *vice versa.* We believe, therefore, that there would be much profit from joint discussions by representatives of the two countries.

Our national special societies, several of them, have Canadian members, and nothing but benefit has resulted from the fact. Indeed, if we are not mistaken, one of those societies has held an annual meeting in Canada. Several of the Canadian cities are quite capable of accommodating large conventions, and an occasional meeting in Montreal, Toronto, or Quebec would be in the highest degree enjoyable. There are, of course, matters connected with medical registration and the like that a body drawing its members from the two countries might find it awkward to deal with so far as action was concerned, but joint discussions of even such affairs would naturally familiarize the profession of each country more and more with the problems encountered by that of the other, and so strengthen the bond of sympathy, already a close one. We hope that a way will be found to provide for annual meetings of representatives of the medical profession of the whole of North America.

THE NEW OHIO MEDICAL LAW.

At last, after years of strenuous effort by the best men of the Ohio profession and the leading medical journals of the State, and in the teeth of fierce opposition and cunning device, an excellent law governing the license to practise has been enacted. While it was pending it was commonly known as the Love medical bill, because it was introduced into the House of Representatives by Dr. M. J. Love, of Bloomingville, the chairman of the house's committee on medical legislation. In its general purport the law is very similar to that of New York and that of Pennsylvania, and the *Columbus Medical Journal* thinks that in its educational requirements it is probably their superior. It contains a reciprocity clause authorizing the registration of certificates issued by other States that enforce equally high requirements, and this is a commendable feature. The examinations are to be conducted under the direction of the State Board of Medical Registration and Examination, and are to be held simultaneously in Cincinnati, Cleveland, Columbus, and Toledo, in all of which cities the questions propounded must be the same. There is but one board, but the leading medical sects are all represented in the board, and there seems to be not a shadow of ground for any honest person to insinuate that there is a possibility of discrimination against a candidate on the score of his peculiar therapeutical tenets.

The "osteopaths," of course, are not pleased, and they resorted to all sorts of means of preventing the passage of the bill. It is to be regretted that they succeeded in securing a provision to the effect that the law should not apply to any one of their craft holding a diploma from "a legally chartered and regularly conducted school of osteopathy in good standing as such" issued on the requirement of four annual five-month terms, provided he passed an examination by the board in anatomy, physiology, chemistry, and physical diagnosis; but that he should not be privileged to administer drugs or perform major surgical operations. It is to be regretted that they are tolerated at all, but it is a matter for congratulation that they failed, though barely, to obtain the enactment of a bill providing for a State Board of Osteopathic Examiners, "with power to pass upon the qualifications of those who wish to practise that peculiar system of massage," as our Columbus contemporary puts it.

In one respect our New York experience has been that of our Ohio brethren, namely, in the opposition that the bill encountered from the students of certain schools, egged on, as the *Cleveland Medical Gazette* says, by their faculties. Apparently it was this opposition that secured the insertion of a clause exempting present matriculates who graduate prior to July 1, 1904. But the *Gazette* finds consolation in the reflection that, but for this modification, "those same schools would doubtless have been found pleading for a low standard of final examination." "As it is," it adds, "they have nothing to say, . . . and the probability is that it will be for the benefit of the profession of the State that they have been given this leeway."

IS HANGING A BARBAROUS METHOD OF EXECUTION?

The advisability of capital punishment we are not at the present moment prepared to discuss; but, inasmuch as most civilized countries still retain it, and are for some time likely to retain it, on their statute books, the respective merits of various modes of inflicting it is an eminently proper subject for the consideration of the medical profession. In old times hanging was, if it is not still, the prevailing method; but for many years past popular feeling has been steadily increasing against it. In this and some other States of the Union the would-be philanthropists have decried hanging so strongly that the use of electricity has taken its place under the idea that it is a more humane method of execution, the former being regarded as barbarously cruel and painful. Now, while many consider the retention of the death penalty both justifiable and in the best interests of the community, no one, we imagine, would attempt to justify its infliction with any avoidable cruelty. The older countries and many of our own States still adhere to hanging, and on that account are reproached by so-called reformers with a want of enlightenment approaching almost to barbarity.

While electrical execution may or may not be the enlightened and humane method of execution which it is asserted by its advocates to be, it is at least desirable that all that can be said in its defense should be accorded due weight before others are reproached for adhering to it.

In this connection, therefore, the investigations of Dr. E. W. Holmes, of Philadelphia, recently reported to the Philadelphia County Medical Society, in which he gives the results of his observation, not only concerning the post-mortem examinations of those who have been hanged, either suicidally or by process of law, but also of experiments on the cadaver, have considerable interest. From these investigations, according to the *Carolina Medical Journal* for June, it has been found that fracture or dislocation of the cervical vertebræ is by no means so common a cause of death from hanging as is usually supposed, the fatal termination as a matter of fact being most frequently brought about by apnœa. Dr. Holmes gives the causes of death in the following order of frequency: 1. Asphyxia from compression of the air-passages. 2. Cerebral congestion and coma from constriction of the cervical veins. 3. Cerebral anæmia and syncope from the rupture of arteries by their compression against the transverse processes of the vertebræ. 4. Injury or compression of the spinal cord or vagi, causing neuroparalysis and occasionally laceration of the medulla oblongata. 5. Shock and cerebral concussion, which cause, he states, has not been previously recognized.

It must not, however, be supposed that this new schema of the pathological anatomy of hanging affords clear proof of the cruelty of that method of capital punishment. Far from it. The author has been able to satisfy himself from the evidence of some who have been resuscitated that the "drop" produces unconsciousness; the subject is stunned, and remains so, until dissolution occurs. This fact alone makes it probable that death from any of the before-mentioned causes is just as painless as the more immediate dispatch resulting from fracture or dislocation of the cervical vertebræ. On the same authority—viz., that of those who have been resuscitated from hanging—Dr. Holmes draws the conclusion that death is painless, which is borne out by their statement that almost instantly on suspension comes "a hissing sound in the ears, floating lights before the eyes, then darkness and oblivion." As to the struggles and contortions which at times occur, they occasionally take place in executions by electricity, and we need scarcely point out that, notwithstanding the lurid pictures of the gruesome-minded newspaper reporter, such movements are reflex in character, and by no means necessarily indicative of sensation.

From these considerations, therefore, it would appear that, while it is quite unexceptionable for any community to think electrical or other methods of execution to be preferable to hanging, it is by no means incumbent upon it to censure others that prefer to adhere to the more time-honored procedure.

ALCOHOL AS AN ANÆSTHETIC.

The editor of the *Southern Practitioner,* in his issue for June, records the case of a man who came to him "in a maudlin condition" from drink, with a complete dislocation of the humerus into the axilla. The marked muscular contraction, lack of assistance, and some apprehension as to the results of ether or chloroform in the patient's condition, led him to administer two ounces of whisky, well diluted, every ten minutes until complete muscular relaxation was attained, when the reduction was effected so easily by the old "heel-in-the-axilla" method as to lead to the belief that it might have been accomplished equally easily with the hands alone. It is well for emergency surgeons practising in out-of-the-way districts not to lose sight of the anæsthetic properties of alcohol, as has been insisted upon by Dr. I. N. Love, of St. Louis; but, under ordinary circumstances, we imagine that, in the presence of more satisfactory methods of inducing anæsthesia or muscular relaxation, it is better to remember that the dangers of chloroform and ether are over with the recovery of the patient, whereas with alcohol, administered as it must be to be of use, they are only just started on their course in many cases.

CYSTITIS AND THE BACILLUS PYOCYANEUS.

Dr. Thomas R. Brown (*Maryland Medical Journal,* May) records a case in which a patient was operated on for pelvic adhesions and a Graafian follicle cyst of moderate size. The operation caused some handling and traumatism of the bladder. The patient had an uneventful convalescence until the ninth day, when the temperature rose slightly and there was severe pain in the bladder region, pain and difficulty in urination, and the urine showed a thick sediment and unpleasant odor. A specimen of urine, obtained with aseptic precautions, gave *Bacillus pyocyaneus* in pure culture, which was substantiated by a second examination a few days later. The urine had been previously examined and found normal. Cystoscopic examination at the height of the disease showed the patient to be suffering from cystitis, which is attributed with great probability to the presence of the bacillus introduced very likely in previous catheterism. It certainly appears as though there were a causal relationship between the bacillus and the cystitis.

A NONSENSICAL SLANDER.

A New York physician is said to have won a suit for slander lately, the stale slander about doctors' sharing in the profits of undertakers, this time carried to the extent of spreading the report that the physician was "killing off his patients so as to get a part of the undertaking bills of a business rival of the defendant." One would think that a person giving out such yarns must consider the public as ready to believe that physicians were stupid enough to commit crime for the prospect of sharing in an undertaker's profits in preference to preserving their patients for the sake of obtaining further fees from them, if for no other reason.

THE STUDY OF THE HAND IN DISEASE.

In these days of resuscitation of palmistry, cheiromancy, etc., it is a wonder that more attention has not been directed by physicians in general to the study of the hand in disease. There are many indications given by the hand beyond the clubbing of the fingers in tuberculosis, the tophi of gout, and the muscular contours in paralysis. Dr. Charles H. Brobst calls attention in the *Peoria Medical Journal* for May to this subject, and cites the opinion of the late Sir Andrew Clark to the effect that "as a medium whereby to diagnosticate disease, particularly pertaining to the respiratory and circulatory systems, the hand has been found to be very valuable."

THE PREVENTION OF INFLUENZA.

In Dr. Sheffield's article published in this issue the author speaks of having frequently succeeded in confining influenza to a single member of a large family, and of his having limited it to forty-nine out of over eight hundred inmates of an orphan asylum. We presume that his practice has been to isolate the persons attacked. If that is the case, the question of the communicability of the disease by personal contact seems to be worthy of consideration.

THE "KISSING BUG" AGAIN.

A recent dispatch to the *Sun* announces a man's death from the sting of the "kissing bug," which was inflicted at a time when he was recovering from a rattlesnake bite under the treatment of a "specialist on the bites of reptiles." How readily the newsmonger generalizes may be inferred from this closing statement: "Evidently the sting of the kissing bug is more dangerous than the bite of a rattlesnake."

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported for the two weeks ending June 23, 1900:

DISEASES.	Week ending June 16.		Week ending June 23.	
	Cases.	Deaths	Cases.	Deaths.
Typhoid fever	32	12	18	9
Scarlet fever	114	9	107	8
Cerebro-spinal meningitis	0	4	0	6
Measles	392	17	304	14
Diphtheria	288	53	257	30
Laryngeal diphtheria (croup)	9	4	8	3
Tuberculosis	182	167	178	135
Chicken-pox	47	0	19	0
Small-pox	0	0	4	1

Traumatism as a Cause of Syringomyelia.—Vincenzo Cito (*Gl' Incurabili,* March; *Medical Record,* June 2d) cites a number of cases which lead him to the belief that traumatism is the chief ætiological factor in syringomyelia, by producing hæmorrhagic foci. These foci become the starting point for the formation of the cavities surrounded by a ring of newly formed nerve tissue.

Change of Address.—Dr. Louis A. Sayre Bodine, to the Majestic Apartments, St. Nicholas Avenue and One Hundred and Forty-fifth Street, New York City.

Marine-Hospital Service Health Reports.—The following cases of small-pox, yellow fever, cholera, and plague were reported to the surgeon-general during the week ending June 23, 1900:

Small-pox—United States and Insular.

Washington, D. C.	June 9–16	8 cases.	
Cairo, Ill.	June 2–9	1 case.	
Evansville, Ind.	June 8–16	2 cases.	
Ottumwa, Iowa	Apr. 28–May 5	1 case.	
Covington, Ky.	June 8–16	9 cases.	
New Orleans, La.	June 8–16	35 “	6 deaths
Shreveport, La.	June 2–9	5 “	
Fall River, Mass.	June 8–16	3 “	
Grand Rapids, Mich.	June 8–16	2 “	
Minneapolis, Minn.	May 26–June 9	26 “	1 death.
Manchester, N. H.	June 8–16	9 “	
Cleveland, Ohio	June 8–16	28 “	2 deaths.
Youngstown, Ohio	June 8–16	1 case.	
Pittsburgh, Pa.	June 8–16	2 cases.	
Ponce, Porto Rico	May 27–June 4	1 case.	
Manila, Philippine Islands	Apr. 28–May 5	2 cases.	
Greenville, S. C.	June 8–16	2 “	
Ogden, Utah	May 1–31	3 “	
Salt Lake City, Utah	June 8–16	5 “	
Spokane, Wash.	June 8–16	1 case.	
Charlestown, W. Va.	June 12	10 cases.	

Small-pox—Foreign.

Prague, Austria	May 28–June 2	11 cases.	
Antwerp, Belgium	May 19–26	1 case,	3 deaths.
Rio de Janeiro, Brazil	Apr. 13–May 11		18 “
Province of Montreal, Dominion of Canada	June 4	30 cases.	
Liverpool, England	May 26–June 2	2 “	
London, England	May 26–June 2	7 “	
Nice, France	May 25–June 6	3 “	
Paris, France	May 26–June 2		1 death.
Stettin, Germany	May 19–26	1 case.	
Gibraltar	May 20–29	4 cases.	
Athens, Greece	May 19–26	4 “	2 deaths.
Bombay, India	May 8–15		24 “
Kurrachee, India	May 6–13	11 “	9 “
Madras, India	May 5–11		1 death.
Chihuahua, Mexico	June 2–9		2 deaths.
Vera Cruz, Mexico	June 2–9		2 “
Moscow, Russia	May 19–26	9 “	4 “
Odessa, Russia	May 26–June 2	11 “	1 death.
St. Petersburg, Russia	May 19–26	33 “	12 deaths.
Warsaw, Russia	May 12–19		2 “
Corunna, Spain	May 26–June 2		1 death.
Madrid, Spain	May 5–19		21 deaths.
Straits Settlements, Singapore	Apr. 28–May 5		5 “
Montevideo, Uruguay	Apr. 2–May 5	2 cases.	

Yellow Fever—Foreign.

Rio de Janeiro, Brazil	Apr. 13–May 11		46 deaths.
Barranquilla, Colombia	May 26–June 2	5 cases,	3 “
Havana, Cuba	June 2–9		2 “
Laguna, Mexico	June 16	Present.	
Vera Cruz, Mexico	June 2–9	17 cases,	10 “

Cholera.

Bombay, India	May 8–15		15 deaths.
Kurrachee, India	May 6–13	2 cases.	
Madras, India	May 5–11		1 death.

Plague—Insular Possessions, United States.

Manila, Philippine Islands	Apr. 28–May 5	9 cases,	7 deaths.

Plague—Foreign.

Bombay, India	May 8–15		304 deaths.
Kurrachee, India	May 6–13	178 cases,	134 “
Osaka, Japan	May 13–25	6 “	
Shidzuoka, Japan	May 14–17	3 “	

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from June 16 to June 23, 1900:*

Baker, Frank C., Acting Assistant Surgeon, will report to Santa Mesa Hospital, Manila, for duty, relieving Warwick, Clarence A., Acting Assistant Surgeon, who will proceed to Solano, Province of Nueva Vizcaya, Luzon, for duty.

Balch, Lewis, Major and Surgeon, United States Volunteers, is honorably discharged from the service of the United States, from July 15, 1900. He will proceed to his home in Albany, New York.

Brechemin, Louis, Major and Surgeon, United States Army. The sick leave granted him is extended three months, with permission to go beyond sea.

Keefer, Frank R., Captain and Assistant Surgeon, United States Army, will proceed to Fort Monroe, Virginia, for duty, relieving Fuller, Leigh A., First Lieutenant and Assistant Surgeon, United States Army, who will proceed to San Francisco for further orders.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending June 23, 1900:*

Alfred, A. R., Passed Assistant Surgeon. Detached from the *Texas* and ordered to the Asiatic Station, *via* the *Nippon Maru*, sailing from San Francisco July 10th.

Lung, G. A., Passed Assistant Surgeon. Order of May 25th modified. Ordered to the Cavite Naval Station.

Thompson, J. C., Assistant Surgeon. Detached from the Naval Station, Yokohama, Japan, and ordered to the *Newark*.

The following are commissioned assistant surgeons, to take rank from June 7, 1900, in the order named: J. J. Snyder, H. A. Dunn, A. Stuart, E. M. Blackwell, W. H. Ulsh, M. V. Stone, C. R. Burr, G. F. Freeman, R. O. Marcour, J. K. Payne, Jr., J. Stepp, C. H. De Lancy, F. M. Bogan, R. K. McClanahan, and W. E. G. High.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the United States Marine-Hospital Service for the Seven Days ending June 21, 1900:*

Carter, H. R., Surgeon. Detailed as chief quarantine officer of the Island of Cuba.

Glennan, A. H., Surgeon. Relieved from duty at New Orleans, and directed to proceed to Havana, Cuba, *via* Washington and New York, and report to Surgeon H. R. Carter for duty.

Wasdin, Eugene, Surgeon. Granted leave of absence for ten days from June 21st.

Magruder, G. M., Surgeon. Upon being relieved from duty at London, England, to proceed to Memphis and assume command of the service.

Smith, A. C., Passed Assistant Surgeon. Relieved from duty at Hamburg, Germany, and directed to proceed to New York and report by wire for orders.

Blue, Rupert, Passed Assistant Surgeon. Relieved from duty at Genoa, Italy, and directed to proceed to New York and report by wire for orders.

Oakley, J. H., Passed Assistant Surgeon. Relieved from duty at Queenstown (Cork), Ireland, and directed to proceed to Evansville, Indiana, and assume command of the service.

SPRAGUE, E. K., Passed Assistant Surgeon. Relieved from duty at Antwerp, Belgium, and directed to proceed to Detroit and report to the medical officer in command for duty and assignment to quarters.

THOMAS, A. R., Passed Assistant Surgeon. Relieved from duty at Rotterdam, Netherlands, and directed to proceed to London, England, and detailed for duty in the office of the United States Consul-General at that place.

WICKES, H. W., Passed Assistant Surgeon. Relieved from duty at Glasgow, Scotland, and directed to proceed to Cincinnati and assume command of the service.

GREENE, J. B., Passed Assistant Surgeon. Relieved from duty at Bremen, Germany, and detailed for duty in the office of the United States Consul-General at Berlin, Germany.

MATHEWSON, H. S., Assistant Surgeon. Relieved from duty at Liverpool, England, and directed to proceed to New York and report by wire for orders.

GRUBBS, S. B., Assistant Surgeon. Relieved from duty at Havre, France, and detailed for duty in the office of the United States Consul-General at Paris, France.

PARKER, H. B., Assistant Surgeon. Upon being relieved from duty at Santiago, Cuba, to proceed to New Orleans and report to the medical officer in command for duty and assignment to quarters.

VON EZDORF, R. H., Assistant Surgeon. Relieved from duty at Savannah and detailed as quarantine officer at the port of Santiago, Cuba, proceeding to station *via* Washington and New York.

ANDERSON, J. F., Assistant Surgeon. Relieved from duty at Marseilles, France, and detailed for duty in the office of the United States Consul-General at Vienna, Austria.

HOBDY, W. C., Assistant Surgeon. Relieved from duty at Southampton, England, and directed to proceed to New York and report by wire for orders.

SCHERESCHEWSKY, J. W., Assistant Surgeon. Directed to assume temporary command of the service at New Orleans.

MARSH, W. H., Acting Assistant Surgeon. Granted leave of absence for eighteen days from June 5th.

MASON, W. C., Acting Assistant Surgeon. Granted leave of absence for five days from June 24th.

SCHLAAR, W. F., Hospital Steward. Relieved from duty at the port of Washington and directed to report to Surgeon L. L. Williams, Immigration Depot, New York, for duty.

Society Meetings for the Coming Week:

MONDAY, *July 2d:* New York Academy of Medicine (Section in Biology); German Medical Society of the City of New York; Morrisania Medical Society, New York (private); Brooklyn Anatomical and Surgical Society (private); Corning, New York, Academy of Medicine; Utica, New York, Medical Library Association; St. Albans, Vermont, Medical Association; Providence, Rhode Island, Medical Association; Chicago Medical Society.

TUESDAY, *July 3d:* Elmira, New York, Academy of Medicine; Ogdensburgh, New York, Medical Association; Syracuse, New York, Academy of Medicine; Hudson, New Jersey, County Medical Society (Jersey City); Medical Society of the University of Maryland (Baltimore).

WEDNESDAY, *July 4th:* New York Academy of Medicine (Section in Public Health); Medical Society of the County of Richmond, New York (New Brighton); Bridgeport, Connecticut, Medical Association.

THURSDAY, *July 5th:* Society of Physicians of the Village of Canandaigua, New York; Medical Society of City Hospital Alumni, St. Louis.

FRIDAY, *July 6th:* Clinical Society of the New York Post-graduate Medical School and Hospital.

SATURDAY, *July 7th:* Miller's River, Massachusetts, Medical Society.

Births, Marriages, and Deaths.

Married.

CARPENTER—MCNEILL.—In Florence, South Carolina, on Monday, June 11th, Dr. Ernest Willoughby Carpenter, of Charleston, South Carolina, and Miss Katherine E. McNeill.

HOLBROOK—LYONS.—In Newark, New Jersey, on Wednesday, June 27th, Dr. William Ferro Holbrook and Miss Isabel Graham Lyons.

Died.

HOWARD.—In Elberon, New Jersey, on Thursday, June 21st, Dr. B. D. Howard, United States army, retired, in the sixtieth year of his age.

Pith of Current Literature.

The Journal of the American Medical Association, June 23, 1900.

A Protest against some of the Evils in the Practice of Medicine. Oration on Medicine before the Fifty-first Annual Meeting of the American Medical Association. By Dr. J. A. Witherspoon.—This article may be epitomized, and the evils the author refers to may be recapitulated by giving the various headings of the paper: Dictation by Pharmacal Companies; Multiplication of Medical Colleges; Laboratory Diagnosis; Medical Politics; Indiscriminate Use of Narcotics; Useless Multiplication of Books.

The Ideal Physician. By Dr. W. W. Keen.

Should the Medical Undergraduate be Instructed in the Principles of Dentistry? By Dr. M. L. Rhein.—That "a medical education which neglects to train the undergraduate in the principles of stomatology is deplorably deficient," is the opinion of the author. As a result of his ignorance of the principles of stomatology, the opportunities of the general practitioner are greatly handicapped. This is owing to his inability to appreciate the diagnostic, therapeutic, and prognostic aids afforded by the clinical appearances found in the oral cavity.

The Handwriting on the Wall: What does it Portray? By Dr. A. E. Baldwin.

Limitations in Dental Education. By Dr. Eugene S. Talbot.

Is a Medical Education a Necessary Qualification for Dental Practice? By Alice M. Steeves, D. D. S.

Some Thoughts on Teaching Materia Medica and Therapeutics, Emphasizing Object Teaching. By Dr. A. H. Peck.

Pathology of Acquired Heart Disease in Children. By Dr. J. Dutton Steele.

Symptomatology of Valvular Heart Disease in Children. By Dr. Frederick A. Packard.

Prognosis in the Heart Diseases of Children. By Dr. Arthur V. Meigs.

The Pathology of General Heart Disease. By Dr. Alfred Hand, Jr.

The Diagnosis of Heart Disease in Children. By Dr. J. P. Crozer Griffith.

Report of a Case of Primary Carcinoma of Liver. By Dr. R. C. Harris.

Venocavernous Angeioma. By Dr. Andrew L. Fulton.

Myomectomy during the Sixth Month of Pregnancy: Recovery. By Dr. Eugene R. Lewis.

Medical Record, June 23, 1900.

A Memorial Address upon Dr. Fessenden Nott Otis. By Dr. T. Gaillard Thomas.

A New Plan for Washing the Bladder, with a Description of Apparatus. By Dr. William F. Fluhrer.

Ceruminous and Epithelial Infections in the External Auditory Canal. By Dr. Samuel Cohn.—The frequency of this condition in ear clinics is from ten to twelve per cent. of all cases. The plug most frequently met with consists of the inspissated secretion of the ceruminous or sebaceous glands of the lining integument. There is also the epithelial plug formed principally of epithelial scales, grayish or pearly in hue; and a cholesteatoma, which may complicate it, or *vice versa.* Though the cholesteatomatous tumors rarely injure the drum, bone readily yields to them, and unattended such a growth may eat its way into the mastoid and cause a fatal termination. A fourth variety is associated with chronic suppuration of the middle ear and perforation of the drum. In about sixty per cent. of cases a full restoration of hearing does not follow the removal of the plug. While most cases of impacted cerumen may be attributed to an existing or preexisting inflammation of the auditory apparatus, it has been pointed out that external desquamative otitis is the cause of the epithelial plug; or a chronic suppurative otitis with scant secretion may be the causative factor primarily.

As to diagnosis and treatment, the author lays stress upon the fact that most assuredly a better understanding of these matters would greatly aid the general practitioner. The use of the ear speculum and forehead mirror is, of course, absolutely necessary for diagnosis. The forcible removal of the plug may light up a train of grave symptoms; gentle syringing with warm water seems to be the best method. Liquor potassæ should be used for the purpose of softening. Some advocate the use of curette and probe entirely. Olive oil favors the growth of the aspergillus fungus. The greatest gentleness should be used. The prognosis should be guarded.

Dampness of the Soil as a Factor in the Production of Human Tuberculosis. By Dr. Richard Cole Newton.

Boston Medical and Surgical Journal, June 21, 1900.

Realism in Medicine. By Dr. A. T. Cabot.

Closing Statements for the Remonstrants to the Massachusetts House Bill No. 917, entitled "An Act for the Further Prevention of Cruelty to Animals," before the Joint Committee on Probate and Insolvency, March 15, 1900. By Dr. Harold C. Ernst.

The Law of Dying Declarations. By Mr. M. J. Sugbrue.

A Case of Extra-uterine Pregnancy. By Dr. Frank Holyoke.

The Marks Produced by Pistol Shots. By Dr. G. de N. Hough.—Within certain limits the calibre may be determined from the size of the mark, and the distance from its character. If the mark is wholly a smut with no tattoo zone, the shot was fired at a distance of not over six inches. If there is a tattoo with a distinct smut at the centre, the distance at which the shot was fired is not over two feet. If the mark consists of the bullet hole alone, then the range was not less than four to six feet if a .22 calibre was used, seven to nine feet if a .32, and nine to twelve feet if a .38 or .41. For practical purposes, however, one must have a library of experimentally produced marks as standards.

The Medical News, June 23, 1900.

A Protest against some of the Evils in the Profession of Medicine. By Dr. J. A. Witherspoon.

Some of the Physiological Methods and Means Employed by the Animal Organism in its Continual Struggle against Bacteria for Maintenance of Life and Health. By Dr. S. J. Meltzer.

Some Points in the Management of Obstetric Cases in Private Practice. By Dr. Joseph Brown Cooke.

Montreal Medical Journal, May, 1900.

The Heart in Relation to Life Insurance. By Dr. George Wilkins.—The importance of mitral regurgitation is largely conditioned by the amount of compensating hypertrophy. In an apparently healthy young man in whom development is not complete, the chances are strongly in favor of his attaining the expectation of life, so far as the heart is concerned; while if the lesion is the result of disease past middle life the hypertrophy may be absent or of short duration and failure is more likely. An easy condition of life with abundant fresh air and absence of worry and strain are favorable conditions, while the free use of alcohol and tobacco is the reverse. But Sir William Broadbent says, "Lots of people develop a mitral murmur about fifty who live to seventy and upward." An aortic obstructive murmur is much less to be feared than an aortic regurgitant. The former often results in compensating hypertrophy, while the latter causes imperfect coronary blood supply and consequent failure. "When we meet with two or more members of the family dying of cerebral apoplexy or Bright's disease, and there are present in applicant any symptoms that would lead us to suspect sclerotic changes in the vessels, even in the absence of a murmur or signs of hypertrophy, it would be our duty to treat the case as an impaired life." The subject of functional murmurs leads the author to ask, "Is it possible for an organic murmur to disappear?" From his own personal observations, he believes that it is. Accentuation of the aortic second sound is of grave significance, especially in those past middle life, and calls for careful examination of the blood-vessels for degenerative changes. Such cases are extremely hazardous. Disturbances of rhythm call for postponement or rejection, especially in applicants daily and freely using alcohol, but intermittency is consistent with perfect health. The author's opinion is that after fifty years of age no valvular case ought to be accepted unless it can be clearly shown that the condition is one that existed in youth, and there are present no unfavorable symptoms. Cases that have made their appearance during adolescence, and have existed for several years subsequently without any discomfort whatever, or apparent injurious effect, may be looked upon as likely to reach the so-called expectation of life, and are safe investments for insurance on the plan mentioned, that is to say, with a very heavy lien or addition to age. Cases of mitral stenosis or double valvular murmurs some companies are willing to accept with a high extra; the author considers them altogether too hazardous to accept on any terms. Aortic cases, even when appearing in the young, no matter from what cause, he considers too hazardous to accept on any terms after forty-five or fifty years of age. "It is a curious and interesting fact that the deaths from cerebral apoplexy are much greater among those who are able to insure their lives for five thousand and over than among the poorer classes; showing the bearing of mental worry in producing changes in the vessels, for it is the wealthier classes who worry the most. The clerk with the small income, which satisfies all his wants, although he may have a leaky heart, may easily reach his expectation, so far as life insurance is concerned."

Life Insurance and Cardiac Disease. By Dr. F. G. Finley.—The class of cases which an insurance company is safest in accepting are those of mitral regurgitation and aortic direct murmurs in which secondary changes in the heart are slight or absent. Cardiac symptoms, particularly dyspnœa on exertion, should be excluded by the personal observation of the examiner, and as far as possible all cases excluded in which the lesion is likely to be progressive. Recurring rheumatic attacks exert a most unfavorable influence from further attacks of endocarditis or pericarditis. A station in life not involving manual labor and early adult life, at which period arterial sclerosis is unlikely to be present, are further elements which must be weighed in the acceptance of such cases. Careful habits and good general health are also important in estimating these risks.

Notes of Three Hundred Agglutination Tests tried with Bacillus coli communis. By John McCrae, M. B.

Excision of the Eyeball and Some Alternative Operations. By Dr. Frank Buller.

A Case of Enteroptosis with Factitious Urticaria. By Dr. G. Gordon Campbell.—A married woman, twenty-six years of age, complained of severe itching at night, appearing to be caused by exposure to cold air on removal of clothes, and disappearing when she got warm in bed. Washing caused red blotches, accompanied by a stinging sensation, which were transitory. The patient did not appear to be neurotic. The mucous membranes were of a good color. The skin was pale, soft, and moist, but on getting her to rub her face with a wet towel, in a couple of minutes irregularly shaped patches of bright red erythema made their appearance. These were accompanied by a burning sensation. On drawing the finger nail or a blunt-pointed instrument over the skin of the thorax or abdomen, an extremely well marked condition of factitious urticaria developed within five minutes. The wheals were raised, white, and surrounded by a zone of deep red erythema. The occurrence of the urticaria was attended by itching in the affected parts.

Incidentally the typical signs of enteroptosis were discovered. The author considers it reasonable to infer that the enteroptosis bore a casual relation to the erythema and factitious urticaria. The condition of the nerves of the skin concerned in the production of factitious urticaria might be present for years and be only discovered by accident. In the present case the patient was unaware of its existence until it was demonstrated to her. At the same time, the erythema of the face was only a less severe form of the same lesion, and it could certainly not have been present without being detected.

Some Remarks Relative to Posterior Positions of the Occiput in Labor. By Dr. G. W. Boggs.

The Lancet, June 16, 1900.

The Value of Tuberculin in Diagnosis and Treatment. By Dr. T. McC. Anderson.—The writer states his firm belief in the great value of tuberculin in the human subject, both as a diagnostic test and as a remedial agent. It is both efficacious and safe. He reports three cases of pulmonary tuberculosis in which tuberculin was used with marked benefit, but states that the best results from its use are attained in external tuberculosis. In thirty-three cases of lupus vulgaris treated with tuberculin the results were as follows: Improved, two; much improved, eight; very much improved, seven; almost well, four; well, twelve. The average duration of the treatment was four months. In seven cases of scrofuloderma affecting various parts of the body the results were: Improved, one; almost well, one; well, five. In these cases also the duration of treatment averaged about four months. The writer holds lupus erythematodes to be a manifestation of the strumous diathesis, and reports three cases cured by the use of tuberculin. Tuberculin treatment must be regarded as local, and must be supplemented by general constitutional treatment. The article closes with a description of the method of diluting tuberculin adopted in the writer's wards in the Western Infirmary, of Glasgow. He thinks the new tuberculin to be safer than the old, but not so valuable in diagnosis; again, its far greater cost makes it a luxury.

Differentiation in Diabetes. By Dr. F. W. Pavy.—The writer differentiates cases of diabetes into two classes: alimentary and composite. In the alimentary form the eliminated sugar is solely derived from the food; there is no breaking down of the body tissues, and the sole abnormity of the urine consists in the presence of sugar. When the sugar has been removed by fermentation, there is no right-handed or left-handed optical activity of the urine on polarimetric examination. In composite diabetes, on the other hand, there is true breaking down of tissue as well as faulty utilization of the sugar in the food. (Hence the name "composite" given by the writer as preferable to "grave" or other terms.) This tissue breakdown causes the appearance in the urine of a series of abnormal products, products never found in normal urine. The series runs as follows: β-oxybutyric acid, diacetic acid, and acetone. The clinical tests for these substances are given, and also their significance when found. The amount of ammonia in the urine furnishes the best idea of the amount of tissue breakdown that is going on. Wherever the amount of ammonia excreted exceeds four grammes a day coma sooner or later occurs. No satisfactory quantitative test for ammonia has as yet been devised. (To be continued.)

Contribution to our Knowledge of Uric-acid Salts. By Otto Rosenheim.—The writer exhaustively reviews our knowledge of uric-acid salts, with especial reference to the well-known views of Sir W. Roberts, and reaches the following conclusions: 1. There is no evidence of the existence of a third order of uric-acid salts—*i. e.*, quadriurates, and the use of the term should be discontinued. 2. The substances obtained artificially under the conditions supposed to produce quadriurates consist of uric acid, biurates, or a mixture of the two. 3. Natural amorphous urinary deposits consist of a mixture of uric acid and urates of sodium, magnesium, etc. 4. The crystallization of uric acid from natural and artificial amorphous urates is due to solution of the biurates and a change in the physical state of the remaining uric acid. 5. Any theory of the pathology or treatment of gout based upon the quadriurate theory requires reconsideration. 6. The existence of two forms of uric acid may explain the variation in the behavior of this acid and its salts.

The Management of the Anæsthetic in Cases in which Respiratory Impediment Exists. By Dr. D. W. Buxton.—The writer reports seven cases illustrating various respiratory impediments and the manner of meeting and correcting them. He sums up as follows: 1. The anæsthetist should acquaint himself with the "personal respiratory equation of his patient." 2. Every form of anæsthetic interferes with this individual power of respiration. 3. This lessened respiratory power becomes a factor of grave danger should any intercurrent cause of respiratory obstruction occur.

Bilateral Dislocation of the Hip, Presumably Congenital. By Dr. T. P. Cowen.—The writer reports the case of a man, aged thirty, who was found to have an old dorsal dislocation of both hip joints. The head of the femur on each side was displaced upward on to the dorsum and was fixed on the dorsum ilii by apparently a newly formed capsule in a position above and behind the acetabulum. The patient could walk, run, and jump. Two excellent illustrations show the condition well. In spite of a history of injury the writer thinks the dislocation to be congenital.

Three Cases of Puerperal Eclampsia. By Dr. F. Spurr.—The writer reports three cases of puerperal eclampsia, all of which ended in recovery. As regards treatment, the chief indication is to eliminate the toxic matter from the circulation or, failing thus, to dilute it as much as possible. In two cases he relied on calomel and croton oil, but in the third he used copious and repeated enemata with such good results that he will use that method for all future cases. To counteract the effects of the poison in the system, he places entire reliance upon the mixture of chloral hydrate and bromide, supplemented, if need be, by prolonged administration of chloroform.

A Few Cases of Brain Injury Clinically Examined. By Dr. E. E. Dyer.

Surgical Aspects of Constipation. By Dr. S. L. Wollmer.—The writer reports two cases of "aneurysmal" dilatation of the colon as the result of chronic constipation. The operation of laparotomy was necessary in both cases, as no enema could have possibly cleared the intestines. In both cases the last part of the sigmoid flexure was enormously dilated. In the first case the dilatation was cystic, in the second sessile. After emptying the cysts, these were sutured to the abdominal wall in an elevated position. Recovery rapidly took place in both.

Fractures of the Inferior Maxillæ treated by a Modified Method of Wire Suture aided by the Electromotor. By Dr. T. S. Carter.—The writer describes the use of the electric dental engine in drilling holes for wiring fractures of the lower jaw. The technique of the operation is given in detail, together with illustrative cases. He uses by preference annealed silver-plated copper wire, which is stronger and more ductile than silver.

The British Medical Journal, June 16, 1900.

Remarks on Mauser-bullet Wounds and Amputation. By Sir William Stokes.—The writer's views on this subject differ from those of Sir William MacCormac and Mr. Treves. In his experience amputation is frequently necessary after Mauser-bullet wounds, especially during the latter part of the campaign in South Africa when the Boers were using soft-nosed bullets, and the ranges were much closer than formerly. He reports seven cases of wounds of the extremities in which amputation was necessary.

Notes on Gastro-enteritis, Dysentery, and Enteric Fever. By Dr. J. W. Washbourn.—In the writer's opinion the diseases above mentioned are the ones most prevalent in South Africa. It is almost impossible to prevent infection which is spread by means of flies and dust and polluted water. The chief symptom of the gastro-enteritis is acute diarrhœa, which is usually painless. The best treatment is a dose of castor oil and laudanum, the diet being restricted to milk. The dysentery is not very fatal; the writer saw only two deaths out of one hundred and fifty-eight cases. He has never succeeded in finding the amœba coli. The symptoms usually yield readily to ipecac or magnesium sulphate. The cases of typhoid fever differ in no respects from those seen in England. So far the writer has seen no good results from anti-typhoid inoculation. Not a single case of malaria was met with.

A Recent Observation on Filaria Nocturna in Culex: Probable Mode of Infection of Man. By G. C. Low.—The writer has studied sections of filariated mosquitoes which were cut after imbedding in celloidin and stained. He found that the young filariæ after reaching their highest stage of development leave the thoracic muscles and pass into the loose cellular tissue of the prothorax in the neighborhood of the salivary glands. From the head they can be followed into the proboscis: not along the salivary duct, which is too small, but by making an independent passage through the base of the labia. He has frequently found them stretching along almost the entire length of the proboscis. Nothing of the nature of inflammatory change or of encystment is ever observed, and it is reasonable to suppose that in some cases at least the filaria is inoculated directly into man by a mosquito bite. The article is illustrated by excellent colored plates.

A Case Bearing on the Parasitic Nature of Mammary Cancer. By A. M. Shield.—The writer reports the case of a woman, aged thirty-six, first seen by him in June, 1898, with Paget's disease of the nipple. Although there were no signs of cancer present, he advised the removal of the whole breast, which was done, with the exception of the axillary glands. The so-called psorosperms were found in scrapings of the inflamed skin. In 1900 a cancerous nodule developed at the sternal end of the scar, examination of which showed it to be spheroidal-celled carcinoma. The distance of the primary affected patch of skin from the secondary nodule was at least eight inches.

Antenatal Diagnosis. By Dr. J. W. Ballantine. —(This is the first of two lectures, and the article will be abstracted as a whole upon its completion.)

Clinical Lectures on Pneumonia. By J. Barr.—In the opinion of the writer the present death-rate from pneumonia is too high. Under five years of age the case mortality is stated to be from thirty to fifty per cent., and the writer thinks that the bronchitis kettle is to a considerable extent responsible. Many children succumb from failure of the right side of the heart. In very old people pneumonia is frequently only a mode of dying. Patients with emphysema, diabetes, and advanced kidney disease stand pneumonia badly. The vast majority of deaths are due to cardiac failure. Continued high temperature is dangerous. To reduce the temperature the writer prefers cold sponges with subsequent evaporation. Large moist poultices remove a great deal of latent heat. In order to prevent cardiac failure, the indications for treatment are to lower the temperature and control the inflammatory process at the earliest possible period, to maintain fair systemic blood pressure, and to keep the respiratory pump acting by lessening the frequency and increasing the depth of the respiration. To meet these indications the writer uses abdominal ice-bags, which he claims bring about the desired effects. He reports nine cases as illustrative of their prompt and satisfactory action. Ice must be applied early in the disease or not at all. It must not be used in feeble old people and those with degenerate hearts. The writer is entirely opposed to the use of any medicinal remedies for the purpose of reducing the temperature. Blood-letting should only be used at a very early stage in sthenic cases with a full bounding pulse and labored respiration. The writer gives opium early in the disease, and has had excellent results from a combination of opium and antimony. Sleep is absolutely necessary. The room should not be darkened and its whole air should be changed three times every hour. He has had no good results from oxygen. He uses alcohol in extreme moderation, claiming that it does not increase the power of the cardiac muscle. "To see occasionally a drunken man struggling for existence is a painful thing." Alcohol does most good during convalescence. Food should be liquid, light, and nutritious.

The Dublin Journal of Medical Science, May, 1900.

On the Study of Diseases of Children. By Langford Symes, F. R. C. P. I.—The author refers to the great progress taking place in pædiatrics in various countries, and specially commends the "high pitch of development" which the study has reached in America. As reasons for its special prosecution he refers to the "hosts of diseases almost peculiar to infancy," the high infantile mortality, the need of singular dexterity in the examination of a sick child, the frequency of serious disease in children, the fact that many forms of infantile disease are still undescribed, the differences between the diseases of children and those of adults, the dissimilarity of symptoms of a given disease in children and adults, and of the therapeutics of childhood and adult life. The dissimilarity of symptoms is easily comprehensible when we remember the anatomical difference of their organs and the unlikeness of their secretions. In young infants nothing is too trivial to notice, while the difficulty of the study is shown in the extent to which reliance has to be placed almost entirely on observation and the language of signs.

Clinical Reports of the Rotunda Hospitals for One Year, November 1, 1898, to October 31, 1899. By R. D. Purefoy, M. D., F. R. C. S. I. (master), and R. P. R. Lyle and H. C. Lloyd (assistants). Continued from April number.

Gazette hebdomadaire de médecine et de chirurgie, June 10, 1900.

Inguino-interstitial Hernia in the Female. By M. Auvray.

La Presse médicale, June 9, 1900.

Tachypnœa in Febrile and Cachectic Diseases.—M. Klippel has studied the appearance of abnormally rapid respiration in the acute infectious diseases, in chronic pulmonary diseases, and in the so-called cachectic diseases. He finds that it is almost invariably greater in its increase than the ratio to the normal pulse-rate would lead one to expect. Without offering any further explanation, he concludes that the respiratory centre is more susceptible to toxic influences than is the cardiac centre.

Puffing of the Face. By M. L. Agoulay.

Lyon médical, June 10, 1900.

Tuberculosis in the Postal and Telegraph Corps of Lyons. (Conclusion.)—M. Navarre urges as a remedy for the high incidence of pulmonary tuberculosis among the employees of the Lyons postal and telegraph service, a radical change in the sanitary arrangements of their places of work, including proper ventilation and plumbing systems, care in the selection of future employees, and measures to prevent the spread of the disease from those now attacked with it.

Epileptic Seizures due to a Plug of Cerumen.—M. Joseph Dreyfus reports a case in which, after the removal of a plug of impacted cerumen, hearing became improved, vertigo and mental depression disappeared, and, up to the present time, no epileptic seizures have shown themselves.

Action of Low Temperatures upon the Coagulability of the Blood.—M. Chanoz and M. Doyon employed liquid air to reduce blood to a very low temperature. They found that it formed a non-homogeneous, opaque mass with the appearance of granite; at first it became brighter, but suddenly it presented a beautiful ruby-red color; the red blood cells, under the microscope, looked as though they had exploded.

Wiener klinische Wochenschrift, June 7, 1900.

Diagnosis of Pulmonary Embolism.—Dr. Drasche says the diagnosis of an embolus in the pulmonary artery has limitations. A sudden occlusion of the artery is marked by very severe symptoms — unconsciousness, convulsions, great restlessness, a sense of impending death, dyspnœa, irregular heart action, small, imperceptible pulse, cyanosis, cold sweat, and cold extremities. If there is a subsequent dilatation of the occluded vessel, the symptoms gradually subside. The artery may become gradually occluded by the deposit of blood clots upon a small embolus. The symptoms depend then upon the location of the clots in the pulmonary artery itself, in one of its branches, or in one of the valves of the heart.

Wölfler's Operative Dislocation of a Goître.—Dr. J. Preindlsberger says that this operation is superior to exothyreopexy in its results on the patient in cachectic conditions, as well as in its healing.

A Case of Extra-uterine Pregnancy.—Dr. Hans Hock reports a case in which the pregnancy went almost to term. The fœtus was lying in the abdominal cavity and the placenta was adherent to the bladder, the ileum, and the peritonæum. It was removed piecemeal, despite the extensive hæmorrhage. The patient ultimately recovered.

Hedonal.—Dr. Arthur Schüller recommends this hypnotic in neurasthenia, alcoholism, and hysteria. It is best given about two hours after the evening meal. The dose is from eighteen grains to twenty-two grains and a half. On account of its somewhat disagreeable taste, it is best administered in a flavored solution or in wafers.

Wiener klinische Rundschau, June 10, 1900.

Autosuggestive Disturbances of Gait. By Dr. L. Löwenfeld.

Self-retaining Tongue Spatula for Posterior Rhinoscopy. By Dr. M. Paunz.

Diagnosis of Functional and Organic Ocular Disturbances. By Dr. Leibrecht. (Continued article.)

Riforma medica, May 15 and 16, 1900.

Tuberculosis of the Brain in Children. By Dr. Leone Maestro.—Tuberculosis of the brain is not treated with sufficient elaboration in the text-books on children's diseases, and is clinically often confounded with tumors of the brain. The writer describes two cases of tuberculosis of the brain in children which presented characteristics that are peculiar to these lesions. In both cases there was an hereditary predisposition to tuberculosis. One had tuberculous glands, the other a chronic bronchitis which remained after convalescence from pertussis. In children, lesions of cerebral vessels, parasitic tumors, or neoplasms properly so called are so rare in the brain that in the presence of severe cerebral symptoms, diffuse or localized, we can make the diagnosis of tuberculosis with safety, if we can exclude injury to the brain. Localization of the lesion is often possible from the character of the paralysis, ophthalmoplegia, etc.

Riforma medica, May 17, 18, and 19, 1900.

Clinical Contribution to the Localization of Cerebral Syphilis. By Dr. Agostino Bruno. — Two cases of syphilis of the brain are reported, typifying respectively the arterial and the meningeal form of lesions. The writer emphasizes the necessity of early diagnosis because if the nerve tissues are not as yet destroyed by the gummatous process specific treatment will be efficient.

Riforma medica, May 21, 22, and 23, 1900.

Concerning Gangrenous Emphysema. By Dr. G. Muscatello and Dr. C. Gangitano.—The knowledge concerning this affection has not progressed with that of other infectious diseases. It is less frequent now than before the days of antisepsis, but is still met with in cities and oftener in the country. It is characterized principally by gangrene or sloughing of tissues, the development of gas, and a tendency to progressive invasion. In some cases there is added a suppurative inflammation of the affected parts. The ætiology is not perfectly clear, although its infectious and contagious nature is beyond doubt. The writers report five cases of gaseous gangrene which have come under their observation during the past two years. In the first three cases they isolated a streptococcus, a staphylococcus, and an anaerobic capsulated bacillus which has the property of generating gases. The same germ was found in the last two cases. The writers drew the following conclusions from their clinical and bacteriological observations: 1. Gaseous gangrene may be caused by different germs. The *Bacillus aerogenes capsulatus* is of great importance, but it must not be considered as the specific factor of the disease; it is a gas-producing micro-organism which in man acts as a toxic saprophyte and exists only where there are profound alterations in the vitality of tissues. The *Bacillus coli communis*, accompanied by other germs, may produce gaseous gangrene. It is not necessary that the patients be diabetics, as some have maintained. 2. Clinically two forms of the malady may be distinguished. One is due to the action of the *Bacillus aerogenes capsulatus* alone, and does not present any inflammatory phenomena. At first this variety does not tend to spread, but when the resistance of the organism is overcome it will invade the surrounding parts rapidly. The other variety is accompanied by the phenomena of inflammation and spreads rapidly from the first. 3. The prognosis is not as desperate as is supposed at first thought. A wide opening of the gangrenous focus, an early removal of the entire affected part by amputation, and energetic disinfection may cure a good percentage of the cases.

Vratch, May 6, 1900, O. S. (May 18, N. S.).

The Insufficiency of Medical Supervision of Minors in Workshops and the Lack of Hospitals for Syphilitic Children. By Dr. Z. J. Eltsine.

Experimental Inoculation of Tuberculosis of Nurslings into Pigeons. By Dr. B. V. Mourzaeff.—The inoculation gave positive results in ten pigeons out of forty-one. The nutrition of the pigeons did not seem to have any connection with their susceptibility to tuberculosis. The bacillus of tuberculosis undergoes certain changes in the bodies of the pigeons which render it more virulent for birds and less harmful for human beings, but these changes have not as yet been determined.

A Case of Chronic Amœbic Colitis. By Dr. N. Solovieff.—The patient had suffered for nearly nine years from bloody diarrhœa. The amœbæ found in the stools seemed to belong to the species *Amœba mitis* (Ross), for they were non-pathogenic in cats and did not destroy blood corpuscles. The writer does not venture to assert whether the *Amœba mitis* was responsible for, or a contributing cause to, the chronic colitis which characterized this case.

Miscellaneous.

Ocular Affections in Leprosy.—Mr. Arthur Neve, F. R. C. S. E., joint superintendent Cashmere State Leper Asylum (*British Medical Journal*, May 12th), states that the eye is affected in twenty out of eighty lepers now in the asylum.

Lids.—1. *The skin of the lids* is liable to the deposit of nodules just as that of other regions; these seldom attain any large size, and very seldom ulcerate. At present there are only three cases of marked tuberculous nodules. 2. *The margin of the lids* is occasionally affected, and there is atrophy of the ciliary follicles. In three cases this is complete, in five partial. 3. *Paralytic ectropion* is the characteristic eye lesion in anæsthetic leprosy. It is rather a drop of the lower lid than an eversion. It falls away from the eye and leaves it exposed. Owing to displacement of the lower punctum, there is lacrymation. The exposed conjunctiva becomes irritated, and often there is ulceration of the lower edge of the cornea.

Conjunctiva.—1. *Conjunctivitis* frequently occurs in lepers, as in all Cashmerians, and there seems no special predisposition, except in those who have paralytic ectropion. Anæsthesia of the lids exposed to special danger from the bites of flies and mosquitoes, and to injury by foreign bodies. 2. *Granular conjunctivitis* is only represented by two cases—a small proportion for this country. 3. *Leprous nodules* appear in the conjunctiva as elsewhere, but there are only three primary cases. On close inspection it is seen that the deposit has extended from the deeper tissues. *Pterygium* is occasionally seen; there is one case now—it is not specific.

Cornea.—1. *Keratitis* sometimes occurs, but is not specific, being usually due to traumatism. From the same cause there may be—2. *Ulceration,* which is most frequent in the lower limbus. This is seldom deep or actively septic, and under treatment, especially by temporary closure of the lids, it readily heals. There are two such cases now. 3. *Infiltration,* which commences peripherally, usually in the sclerotic margin, and gradually extends more or less circumferentially. At the outset there may be a little dotted deposit of a yellow color, possibly vascular. More often it grows as a distinct nodule, involving the sclerotic, cornea, and iris simultaneously. There is a tendency for both eyes to be somewhat symmetrically affected. There are now eight such cases in the asylum. The author regards this as the characteristic lesion of tubercular leprosy. As stated by Hansen and Looft, the inner margin of the cornea is seldom affected, while a low rampart is formed round the rest of the cornea. There is one typical case of this condition. The infiltration is usually superficial to Descemet's membrane, and may be dissected off it. In one case where this was done a staphylomatous protrusion has resulted. The infiltration consists partly of the bacilli, but chiefly of cells in a state of brown granular degeneration.

Iris.—In ocular leprosy the iris is frequently attacked. This is especially the case when infiltration has commenced in the corneal margin. Nodules form in the angle of the anterior chamber, which becomes partially obliterated by them. Less often the nodule may be single, but seldom on or near the edge of the iris. The whole tissue of the iris becomes softened by a chronic inflammatory process, and the deposit of lymph tends to occlude the pupil, causing permanent blindness. When the infiltration begins in the lower angle it closely resembles a hypopyon.

Lens.—The author does not remember seeing any case of cataract consecutive on ocular leprosy.

Deep Structures.—Deep-seated eye affections are rare in leprosy, and are always secondary to corneoscleral lesions. Mr. Neve doubts whether nodules ever occur on the retina or chorioid primarily. He has seen cases of general infiltration of the eyeball which might be called pseudo-glioma, and atrophy of the globe is, of course, met with as the result of suppuration. The sight as tested in sixty lepers, illiterates, without visible ocular disease, was good. The optic nerve is seldom or never the seat of leprous deposit, but the infiltration spreads to the ciliary nerves from the corneo-scleral region, as also to the ora serrata of the retina (Pollock). Blindness is not as frequent in Cashmere from leprosy as appears to be the case elsewhere. There are only thirteen blind eyes; of these, two were caused by small-pox, two are due to total pannus consecutive on trichiasis, two to perforating ulcers, two to glaucoma, and the rest to tubercular deposit and occlusion of the pupil.

Chronic Eczema Cured by an Abscess.—Mr. Longhurst (*British Medical Journal,* May 26th) records the case of a man, aged thirty-one years, who had had a patch of chronic eczema for eight years, as big as a crown piece, situated in the popliteal region, over the biceps femoris tendon. He had tried various treatments: arsenic and dieting, abstaining from alcoholic stimulants entirely for a time; "complete" rest and change of air; but treatment seemed of no avail. The patch slowly increased in size, and the skin became cracked and fissured. One day the patient scratched it; an acute abscess formed, accompanied by a good deal of cellulitis and lymphangeitis. The abscess was opened, and he was well in a week. A month later the patch of eczema was found to have entirely disappeared.

The author attributes the cure to the increased vascularity of the surrounding area produced by the inflammation, and suggests that counter-irritation of the skin, by increasing the vascular supply, might prove a beneficial method of treatment.

Ovariotomy per Anum.—Hubert Peters (*Wiener klinische Wochenschrift,* February 1st; *Medicine,* April) describes the case of a woman, thirty-seven years of age, who from early youth had suffered from obstinate constipation. For years there had been more or less prolapse of the rectal mucous membrane. The patient had three children, and labors had been normal. Years before coming under observation she had had a severe pelvic disorder complicated by pleurisy. Examination showed an anæmic, thin woman, with a greatly relaxed rectum; a portion of the wall was prolapsed, but no hernia of the rectum was present. The uterus was of normal size, easily movable, and had two deep ulcerations of the cervix. In the region of the left ovary was a tumor the size of the fist. The patient was advised to have two operations, but she would not consent to this, insisting that all that was to be done should be undertaken at one time. The operation for the rectal prolapse was made, a portion of the mucous membrane being cut away, opening Douglas's *cul-de-sac* widely. Through this opening the cyst of the ovary was tapped, the emptied sac brought out through the rectum, and the pedicle ligated in three parts. There was a slight rise in temperature for the first few days, but after that recovery was normal. The wound in the rectum healed without suppuration.

A Living Child Delivered by Forceps from a Dead Mother; Delivery of an Asystolic Woman in the Upright Posture.—Neumann (*Centralblatt für Gynäkologie,* March 10; *Obstetrics,* April) relates in a brief article two unusual experiences.

The first related to a case which occurred in the practice of Dr. Koerbitz, of Berlin, in 1869, but was never before published. The woman was dead before the physician's arrival. The only history obtainable was one of progressive dyspnœa and anasarca. Death was estimated to have occurred some fifteen minutes before the arrival of the medical man. Forceps were immediately got into position—time, six minutes—and a living child was quickly extracted. The infant did not require to be reanimated. Similar cases have been reported by Heinrici, Piskacek, and Fleischmann.

In this connection, a case is cited from the practice of Dr. Hoernig, of Guben. The patient was apparently in a desperate condition from cardiac insufficiency, anasarca, ascites, orthopnœa. Pregnancy of six months' duration. Abortion imperative to save life. The woman was kept in the upright position, while bougies were introduced. In six hours the os had opened, and the fœtal head was perforated, and the contents of the uterus extracted. During this period the woman was kept in a leaning position, supported by several attendants. She was in a stuporous condition. The prognosis was regarded as hopeless, yet, after incisions practised on the dropsical limbs, the heart was eased, and the patient made a complete recovery aside from the valvular heart disease which had been responsible for her condition.

Formalin as a Reagent for Blood Examination.—Ernest I. Kizer (*Indiana Academy of Sciences; American Monthly Microscopical Journal,* May) recommends the following process for fixing and preserving blood specimens. It is said to produce no appreciable distortion and not to interfere with staining. Mix one volume of perfectly fresh blood with three volumes of a two-per-cent. solution of formalin. Allow the mixture to stand at least an hour; then draw a small quantity from the bottom of the vessel with a pipette, by which a drop is to be transferred to a clean cover slip; spread evenly over the cover slip and allow the liquid to evaporate. The method of pressing the cover slips together, as in sputum analysis, is to be preferred. Pass the cover slips through the flame, films uppermost, in order to cement the corpuscles to the glass. Dip into a five-per-cent. solution of acetic acid once or twice. Remove the acid with water.

The best stain for non-nucleated corpuscles is gentian violet (a two-per-cent. solution; time of staining, about two or three minutes). For nucleated forms, contrast stains, as methyl blue and gentian violet, or hæmatoxylin and eosin, of methyl green and safranin, give very good results. Ehrlich's triple stain may be used for human corpuscles. Wash out the excess of stain with water or alcohol as the stain requires. Remove the alcohol with clove oil or xylol, and mount in Canada balsam.

Diabetes with Low Specific Gravity.—Dr. James B. Herrick (*Medical News,* May 5th) read at the recent meeting of the Association of American Physicians, at Washington, an account of some cases of diabetes with very low specific gravity despite the presence of sugar in the urine. Usually there was a ratio between the amount of sugar in the urine, the quantity of urine passed, and its specific gravity, so that the severity of the mellituria might be estimated from the other factors, but this was not an invariable rule. Eichhorst had had a case of glycosuria with urinary specific gravity of 1.008. Naunyn had seen cases with specific gravities from 1.010 to 1.015. Specific gravity as low as 1.003 had been reported. These low specific gravities occurred not only in the polyuria immediately preceding or following an acute exacerbation of the diabetes, but also at the height of the glycosuria. Various reasons were given. Low specific gravity occurred in weak patients, especially if they were taking large quantities of water. In one of Dr. Herrick's cases the patient was taking large daily amounts of a mineral water supposed to be curative for diabetes. His urinary specific gravity never reached 1.020. In a case of obese diabetes in Dr. Herrick's practice the specific gravity was but 1.004. To make sure that there was no error, it was tested by several urinometers. The patient had been drinking beer excessively just before passing twenty-four ounces of urine, and to this was due the low specific gravity. Cases of diabetes complicated by interstitial nephritis were especially apt to have low specific gravity of their urine. It was not enough, then, to look for sugar in the urine only when the specific gravity was above 1.020. If interstitial nephritis was suspected, or the patient was weak or took liquids very plentifully, the urine should be carefully tested for sugar, no matter how low the specific gravity might be.

Letters to the Editor.

THE TREATMENT OF LARYNGEAL DIPHTHERIA.

904 GAY STREET, KNOXVILLE, TENN., *June 20, 1900.*

To the Editor of the New York Medical Journal:

SIR: I have been forcibly impressed by the *croup* statistics of New York city for the past several months, and have wondered if antitoxine was in general use by the profession of that city in the laryngeal type of diphtheria, and, if so, why it was that their mortality rates were so high. I was also astonished at the statement of Dr. Herman, in the *New York Medical Journal* of May 28th, referring to the diphtheria mortality in the city of Trieste, where it is said to have been higher when practically all cases were treated with antitoxine than it ever had been without such specific treatment, and the thought occurs to me that an inferior article of antitoxine may have been used, or the experiment may have been made soon after the introduction of the product, when it was used too sparingly to yield the best results. I have also thought the value of antitoxine in the faucial and nasal types of diphtheria was so generally recognized and acknowledged by the medical profession of to-day that it would be like "carrying coals to Newcastle" to discuss that phase of the question; but its value in the croup cases does not seem to be so well established, and for that reason I venture to offer my experience for the past sixteen years with and without antitoxine in "membranous laryngitis." From the spring of 1884 to October 1, 1896, I saw in my own and in consultation practice ten patients with membranous croup, of whom nine died and one recovered, and in 1899 I saw another case of the same kind with Dr. S. M. Miller, of this city, in which the patient recovered under the old plan of treatment—to wit, with large doses of calomel internally and inhalations of steam-moistened atmosphere impregnated with various emollient antiseptics. The treatment of this series of cases includes almost or quite all the measures recommended by the medical authorities of the past thirty years in the treatment of true croup, and the mortality is seen to be nearly eighty-two per cent.

Since October 1, 1896, I have seen fifteen cases of membranous laryngitis treated with antitoxine *and* large doses of calomel, with inhalations of steam-moistened atmosphere carrying volatilized turpentine, eucalyptus, etc., and of this series of cases three ended fatally and twelve in recovery, a mortality of twenty per cent. I am not able to say that all the cases in either series were examples of true diphtheria-bacillus infection, but they were certainly all attended by membranous exudates in the larynx, and nearly every one of them showed the membrane on the tonsils or pillars of the fauces. It may be suggested that the first series were of a severer type than the latter, but this can not be true, as the first series occurred sporadically and here and there in widely separated localities, while the last, or antitoxine, cases were of subepidemic type, and I am sure that some of them were as severe as others of the first series which ended fatally without the use of antitoxine, and they would have done so, too, had it not been for its timely and heroic use.

Of these last cases, ten were in my private practice, and nine of the patients recovered, and this was due, as I firmly believe, to the fact that antitoxine was given in large doses (1,500 to 2,500 units) as soon as a diagnosis was reached, and such doses were repeated every fifteen or twenty hours until improvement was marked or death closed the contest. With this—and, in my opinion, it was of great value—was given from fifteen to thirty grains of calomel in the first twenty-four hours, regardless of the age of the patient (none of whom was over five years old); in only one case was slight ptyalism produced, and in none was there nausea, excessive purgation, or much abdominal pain complained of. This is heroic empiricism, I admit, but look at the results, and fortunately I have had good and reliable consultants in these cases by whom every statement herein contained can be verified.

Of the five other cases seen in consultation, one was under the care of Dr. J. L. Howell, into whose hands it had passed after it had been under homœopathic treatment for several days, and it was beyond all hope of recovery when it was first seen by him. The patient was given 1,500 units of antitoxine, but died a few hours later from exhaustion. Another fatal case I saw with Dr. S. M. Miller and Dr. B. M. Carr. This patient, too, died before the first dose of antitoxine could have had any beneficial effect.

A very severe case was seen with Dr. H. P. Coile, in which the patient recovered under large doses of antitoxine and of calomel. Two others were seen by me with Dr. W. S. Ogle, and in them also the patients recovered under the above-described plan of treatment. I will not deny the right of any one *to doubt the diagnosis.* That is always a convenient loophole through which those so disposed can slip from an uncomfortable position, but I beg any physician who reads this letter to give the poor, helpless, and most miserable little sufferer with membranous croup the benefit of a fair trial of the foregoing plan of treatment, beginning early in the attack, and push it vigorously for from twenty-four to forty-eight hours, and the result will be a grateful surprise to him.

Would I use the same treatment in nasopharyngeal diphtheria? Most emphatically, no! There is as much difference in the clinical picture between uncomplicated cases of nasopharyngeal and laryngeal diphtheria as there is between a lobar pneumonia and a meningitis of pneumococcic origin, all of which depends on the anatomical and physiological differences in the structures involved, and not in the virulence of the infecting agent. CHARLES P. MCNABB, M. D.

THE REVIEWER REVIEWED.

DENVER, COL., *June 16, 1900.*

To the Editor of the New York Medical Journal:

SIR: The oversights of the author are so often shown up by the reviewer that it should be noted that a like accident may befall the latter.

In the very kind and appreciative notice of my *Manual of Diseases of the Eye*, appearing in the *Journal* for May 19th, its writer says: "It is surprising to find no mention of the large Haab magnet for the removal of particles of steel and iron from the interior of the eye." This is all the more "surprising" because (p. 561) the magnet is more than "mentioned"; and in the index the paragraph in question is referred to under both "Haab's Magnet" and "Magnet Extraction."

EDWARD JACKSON, M. D.

BILHARZIA HÆMATOBIA IN THE BLADDER.

MOUNT CARMEL, IND., *May 28, 1900.*

To the Editor of the New York Medical Journal:

SIR: In the ordinary practice of a physician in the country the last thing to be expected would be a disease the natural habitat of which is in countries seven or eight thousand miles distant.

It might be well to state at the outset that the patient who is the subject of this communication has not been seventy miles from home in the past ten years.

Two years ago, while treating Mrs. L., aged thirty-two years, a unipara, her child being now a boy of nine years, for chronic endometritis, I observed a very marked vesical tenderness with decided induration, the bladder giving the sensation on palpation of a firm fibroid of about the size of a billiard ball.

Questioning brought out the fact that Mrs. L. had suffered for several years with vesical irritation and frequent, painful micturition, and she also intimated that her urine contained numerous "small red worms."

Although a woman of more than the average intelligence, she had attached to these conditions no special importance, supposing them to be secondary to her uterine irregularities.

A specimen of the urine revealed a strange condition. Fully one fourth of the volume of the urine consisted of thick, creamy pus in which swam and gyrated a great number of very active, small, slender, and bright red worms from an eighth to a sixth of an inch in length, their width being about one sixth of their length. The male worms were shorter and thicker than the females, and had a marked abdominal cleft.

The only clew that I have been able to find regarding the primary infection, as Mrs. L. lives in a well-built modern home on a farm located in a very healthy neighborhood, is the fact that several years ago she was in the habit of indulging freely in eating uncooked prunes of a peculiar variety not now obtainable and then known as "Turkish." From her description of these prunes it is highly probable that they were an importation from Oriental lands, as they bore but little resemblance to the familiar commercial article.

Mrs. L. states that for weeks at a time she has felt comparatively comfortable, although constantly voiding a greater or less number of the parasites. Then a vague feeling of weight and discomfort over the region of the kidneys and abdomen rapidly develops into a condition of acute suffering, accompanied by a sensation of gnawing, pulling, and cutting over the kidneys and bladder. Micturition becomes at first frequent and finally almost constant, especially at night, no measure of relief coming until the worms begin to pass away in great abundance, there appearing at this stage of her trouble numerous clumps or balls of the parasites, often composed of from twenty to thirty individual worms. The description of the *Bilharzia hœmatobia* given by Huber in the *Twentieth Century Practice* is the only one that seems to cover the case.

Despite all my efforts as regards both general and local treatment, the above-described state of affairs continues, and my patient, although she is able to be about and to attend to minor household affairs, is in a pitiable state both of mind and of body.

Surrounded by all the comforts of life, she derives but little pleasure from her otherwise happy home, as she realizes that friends and neighbors look upon her with a distinct feeling of apprehension lest they, too, may acquire the trouble.

It is more than probable that a discussion of the treatment of this disorder may develop something which may afford relief in this case, as well as in others of a similar nature, which in all probability exist in other parts of the country.

Possibly there are among those who have practised in Eastern countries some who may be able to suggest a method of treatment which will afford prompt and permanent relief.

R. F. Lewis, M. D.

THE BROMIDE TREATMENT OF THE OPIUM HABIT

Hartford, Conn., *June 18, 1900.*

To the Editor of the New York Medical Journal:

Sir: Dr. Church's article on the treatment of the opium habit by the bromide method clearly indicates a limited acquaintance with the copious literature of this subject a few years ago. Dr. Mattison, of Brooklyn, in 1870 began to urge the bromide treatment for opium addiction. For over fifteen years he both practised this treatment and wrote extensively about it. He issued a book, published by the Putnams, giving minute directions concerning the administration of the bromides and other drugs found valuable as adjuvants. This treatment was practised extensively by nearly all the asylum superintendents who treated this class of cases, with varying success. Finally it fell into disuse. The effects of bromidization were found to be more serious than was at first supposed. I used this treatment long ago in a large number of cases, and finally gave it up as dangerous and uncertain. Other remedies were found to be safer and less injurious. A number of authors have pointed out the dangers from bromidization, particularly in persons addicted to morphine and alcohol, and now only a few persons use it on rare occasions. The reported discovery of Dr. Macleod, of Shanghai, of its value in opium cases is a very curious revival of the enthusiastic statements of Mattison nearly thirty years ago, who thought he had discovered a specific for the relief of the opium habit. The repetition of this statement through the press as if it was a new discovery shows that there is "nothing new under the sun." Any one wishing to read the literature of this subject can find it in the *Journal of Inebriety*, in several books pertaining to the opium habit, and in numerous reprints on the subject to be found in every large library. The case of Dr. Church, which he mentions with so much detail, is not encouraging to one who is treating cases of this kind, and who would prefer to have less dangerous symptoms follow from the withdrawal of morphine. Dr. Church's caution and warning are very apt and practical, and had he known more of the literature would have been stated much more strongly.

T. D. Crothers, M. D.

Book Notices.

International Clinics: A Quarterly of Clinical Lectures on Medicine, Neurology, Surgery, Gynæcology, Obstetrics, Ophthalmology, Laryngology, Pharyngology, Rhinology, Otology, and Dermatology, and Specially Prepared Articles on Treatment and Drugs. By Professors and Lecturers in the Leading Medical Colleges of the United States, Germany, Austria, France, Great Britain, and Canada. Edited by Judson Daland, M. D. (Univ. of Penna.), Philadelphia, Instructor in Clinical Medicine in the University of Pennsylvania, etc. Volume IV. Ninth Series. 1900. Philadelphia: J. B. Lippincott Company, 1900. Pp. ix–337.

It would manifestly be impossible in the limited space available to review each and every article in this interesting collation of the latest advances in the medical world. We can but say that the present volume maintains the high standard already established by the former issues of this valuable work.

Our attention is first arrested by an article on the treatment of pneumonia by hypodermoclysis in which the writer expresses the belief that the potency of the procedure is due to the prevention of an ante-mortem clot, thereby guarding against cardiac failure. The results obtained would certainly warrant careful thought.

Enucleation of the mucosa of the vermiform appendix is most interesting from an anatomical standpoint, but would hardly stand the censorship of the practical surgeon, for he would see nothing to be gained by leaving the peritoneal shell to encourage the possibility of intestinal obstruction subsequently. Many surgeons have been in the habit of leaving a collar of peritonæum to cover the stump with, but few have cared to keep it intact.

The tendency of the gynæcologist to discard the ligature is demonstrated by the methods advised in the extirpation of the uterus and its appendages. We note also that the electro-hæmostatic measures are giving way to the angeiotribe.

Diseases of the Intestines. A Text-book for Practitioners and Students of Medicine. By Max Einhorn, M. D., Professor of Medicine at the New York Post-graduate Medical School and Hospital, etc. New York: William Wood & Co., 1900. Pp. xiv–391.

From the preface of this treatise we learn that it is intended to be a continuation of the author's work on *Diseases of the Stomach*, the two together treating of the principal disorders of the digestive tract. In the preface it is also mentioned that, while there exist many excellent works on intestinal diseases by German authors, the more recent English literature contains no monograph on this subject except in the medical encyclopædias. Those who are familiar with Einhorn's first book and his many valuable contributions to our literature, his original investigations and observations, will welcome this new volume. Indeed, there can be only one opinion, that Einhorn has enriched us with a text-book which gives the present state of science relating to its subject, doing equal justice to English and German literature, a trustworthy aid for medical students and practitioners, written in concise and clear style.

In the first chapter, the anatomical and physiological introduction, and in the second, the methods of examination, the matter is handled in a way most suitable for practical purposes. The illustrations of the second chapter (Figs. 16 to 25), all original ones, microscopical pictures taken by the author, are most instructive. Very interesting is Fig. 19, an evacuation of an hysterical patient who simulated the passing of large quantities of mucous membrane in the fæces. In mentioning Sutton's ether inflation for diagnosticating intestinal perforation the author has omitted to mention Senn's method of introducing hydrogen. In the chapter on acute and chronic intestinal catarrh our attention is directed to the relation of constipation and diarrhœa to anomalies of gastric secretion, and we learn of what importance the recognition of this relation may be in regard to treatment. The book abounds in original observations of the author's, among which may be mentioned those on the behavior of the stomach in membranous enteritis, the relation of enteroptosis to achylia gastrica and to membranous enteritis. Original is the author's device of a rectal electrode (Fig. 27).

It is to be regretted that in the remarks on the treatment of dysentery inflation of the rectum with carbonic-acid gas has not been spoken of.

The book is to be recommended especially because the author has succeeded in presenting the diagnosis of the different diseases in as simplified and clear a manner as possible.

On the Operative Surgery of Malignant Disease. By Henry T. Butlin, F. R. C. S., D. C. L., Hunterian Professor of Surgery and Pathology to the Royal College of Surgeons, etc. With the Cooperation of James Berry (The Thyreoid); W. Bruce Clarke (The Kidney); Alban Doran (The Ovary and Uterus); Percy Furnivall (The Stomach, Intestine, and Rectum); Walter Jessop (The Eye); and H. J. Waring (The Liver and Gall Bladder). Second Edition. Philadelphia: P. Blakiston's Son & Co., 1900. Pp. xii–426. [Price, $4.50.]

It is now twelve years since the author's work, under the same title, was first published. The enormous strides made in surgery since that time have required almost a complete change in the ideas expressed in the former edition. Mr. Butlin has greatly enhanced the value of the book in the happy selection of a number of cooperators specially qualified for the treatment of the individual regions allotted to them. We find malignant neoplasms of the thyreoid carefully considered by Mr. James Berry; those of the kidney by Mr. Alban Doran; those of the stomach, intestines, and rectum by Mr. Walter Jessop; and those of the liver and gall bladder by Mr. H. J. Waring.

The object of the work, as we find stated in the preface, is to indicate the class of cases and the parts of the body which may be treated by operative means with the best prospect of success; to encourage the performance of operations in suitable cases at the earliest possible period; to discourage the repetition of useless and dangerous operations; and to raise the question of the propriety of the removal of entire organs for the cure of cancers of limited extent.

Special attention is given to the different degrees of malignancy of neoplasms, depending on their situation, and also to the fallacy of placing the same time limit on the probability of recurrence. It is correctly stated that for malignant diseases of the tongue, the tonsil, and the parotid gland, for example, the three years' limit is much too long. For the breast it is sufficiently correct. For the lower lip and face it is too short. The writer on this subject also calls attention to the endotheliomata, and concludes that they may be either malignant or benign, but does not attempt to assist us in distinguishing between them, except that he states that the benign variety simulates sarcoma in being encapsulated and consequently more readily shelled out than the malignant.

One is rather disappointed in finding the operative suggestions limited to those most popular with the writers. We should expect to find in a work of this kind more methods of election. The statistics, as well, from which the conclusions are drawn are rather too limited to make us feel sufficiently confident in giving a prognosis in similar cases.

The work, taken as a whole, is good, and the advice given is derived from actual experience and observation, the book differing materially in this respect from a number of contemporary works in which conclusions are drawn from a collation derived from numerous works.

The book will be found most useful and instructive and well worth adding to one's library.

BOOKS, ETC., RECEIVED.

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Suggestions to Medical Writers. By George M. Gould, M. D. Philadelphia: The Philadelphia Medical Publishing Company, 1900. Pp. 4 to 185.

Food for the Sick and how to Prepare it. With a Chapter on Food for the Baby. By Edwin Charles French, M. D. Louisville: John P. Morton & Co., 1900. Pp. viii–171.

Medical and Surgical Nursing. A Treatise on Modern Nursing from the Physician's and Surgeon's Standpoint, for the Guidance of Graduate and Student Nurses, together with Practical Instruction in the Art of Cooking for the Sick. Edited by H. J. O'Brien, M. D., Professor of Clinical Surgery, Hamline University, etc. New York and London: G. P. Putnam's Sons, 1900. Pp. ix–287.

Verhandlungen des Vereins für innere Medecin zu Berlin. Herausgegeben von dem Vorstande des Vereins. Jahrgang XIX. 1899–1900.

A Medico-religious Charity.—The Guild of Mercy. By W. Thornton Parker, M. D., of Westboro, Massachusetts. [Reprinted from the *Atlanta Journal-Record of Medicine.*]

Retrobulbar Abscess due to Empyema of the Maxillary Antrum and Ethmoidal Sinus resulting from Dental Caries. By J. Guttmann, M. D. [Reprinted from the *Annals of Ophthalmology.*]

The Regeneration of the Crystalline Lens. By Robert L. Randolph, M. D., of Baltimore. [Reprinted from the *Johns Hopkins Hospital Reports.*]

Hair and its Anomalies. By Henry Alfred Robbins, M. D., of Washington. [Reprinted from the *Journal of the American Medical Association.*]

Miscellany.

An Ode to Professor Gairdner.—According to the *Polyclinic* for May, the following lines apropos of the retirement of Professor Gairdner from the chair of medicine in the Glasgow University have appeared in the *Glasgow Evening Mail.* They contain some happy descriptive touches, and are worthy of preservation:

I

"Person of the name of Bill
(For what's Sir William but the gaud external?),
To you we give the glad hand,
And *Vale* say with tears.
White—
White clear through,
Our truly Grand Old Gairdner, Bill,
Are you.

II

"When now we think of Galen,
Hippocrates his pupil, or Æsculapius,
These sawbones of old,
We see a gentle soul with peering spectacles
And whiskers quite perfunctory,
Laughing upon a world he loved because it ailed
When Air, and Sunshine (sometimes), Soap, and Water were so cheap.
And ever for you the welfare of your fellows,
And ever for you the conscientious task,
And ever for you Progress, and the eternal Truth,
That in your great Profession
Is a Will-o'-the-wisp.

III

"Doctors are more deadly than diseases,
But yet, but yet,
You found the fœtid den, the filthy warren,
And bade this city ply its besom
When besoms were taboo;
You tracked the noxious microbe to his kopje,
And nosed for causes of disease zymotic as if you loved 'em.
They have not yet—alack!—capitulated, but you retire
Into an honorable inactivity.

IV

"All round the world,
As well as here where best we know you,
And knowing you like you most,
Are fellows you made
To know and honor the craft of Medicine.
Remembering you, the Master, they remember
Not the K. C. B.
But Gairdner, the ancient, kind, and mellow comrade,
A maker of methods,
A maker of Glasgow,
A maker of men."

Old-time Recognition of the Contagiousness of Tuberculosis.—The *British Medical Journal* for June 9th says: "The following extract from the report of a meeting of the Société de médecine de Nancy, held on the first frimaire, year VI of the Republic, one and indivisible, is a further proof of the fact that tuberculosis was looked upon as contagious by many members of the profession in past times: 'Citizen Simonin, professor of anatomy, treated of pulmonary phthisis. He regards it as contagious and expressed a wish that all governments should promote the use of a precaution which medical art has oftentimes suggested, namely, the purification or destruction of all objects infected by the sufferer that might propagate the disease.' The Citizen Simonin here mentioned was probably Jean Baptiste Simonin, who was born at Nancy in 1750 and was surgeon-in-chief to the St. Charles Hospital in that town. After the closure of the College Royal of Nancy in 1793 he continued to give private lectures."

"Robin Adair."—The *Medical Review* for June 2d, without giving any authority, says that it is stated that Robin Adair, the hero of the song of that name, was a young medical student of Dublin, who, for some difficulty, found it necessary to leave that city. While journeying to London on foot he became of service to the daughter of the Earl of Albemarle. This lady's parents objecting to the marriage of the couple, she became ill in consequence, and composed the beautiful and plaintive poem. It is gratifying to learn that Adair finally married his ladylove, became famous as a practitioner, and died at the age of eighty.

Eosinate of Methylene Blue as a Blood Stain.—Dr. Charles E. Simon (*Maryland Medical Journal,* April) gives the following process, which he considers not only simpler than Ehrlich's procedure, but which furnished results on an average as good as the best results that can be obtained with the old method. The information also which is thus furnished is greater, as the basophilic granules of the mast cells and of the red corpuscles which are undergoing granular degeneration are readily stained. Polychromatophilia is shown to greater perfection, and any bacteria or malarial organisms that may be present are distinctly brought out. With diabetic blood, moreover, a modified Bremer's reaction is obtained.

The stain is prepared in the following manner: Equal parts of a 1.2 to 1.25-per-cent. aqueous solution of eosin and of a one-per-cent. aqueous solution of methylene blue are mixed in an open basin and allowed to stand for twenty-four hours. The precipitated eosinate of methylene blue is filtered off and dried at ordinary temperatures. It is then powdered, washed with distilled water, again dried, and stored in suitable receptacles. If desired, the substance may be further purified by recrystallization from alcohol, but this is not strictly necessary. The crystals have a greenish lustre. They are practically insoluble in cold water, very little soluble in hot water, while in alcohol or in solutions of eosin or methylene blue they dissolve with comparative ease. For staining purposes he employs a saturated solution of the dye in methyl alcohol, to which he further adds about ten per cent. of glycerin. A solution is thus obtained which does not evaporate so rapidly as the simple alcoholic solution, and is therefore better suited for the purpose of staining specimens on the slide or cover glass. Previous fixation is unnecessary. The blood specimens are prepared as usual on cover glasses, or, what he has come to regard as more convenient and more satisfactory, on slides. When air-dry, they are covered with a few drops of the solution, stained for from two to five minutes, then rinsed in water and thoroughly dried by slow evaporation and subsequent mild heating. The various elements of the blood are thus stained as already described. Particularly striking are the neutrophilic leucocytes, where the individual granules are stained a beautiful purple. Polychromatophilic and granular degenerations of the red corpuscles are readily recognized. With diabetic blood a modified Bremer's reaction is obtained—*i. e.*, the red corpuscles are colored a pale green, a yellowish green, or they may remain uncolored altogether. The basophilic leucocytes present a violet granulation, and bacteria and malarial organisms are stained a sky blue.

In his laboratory he now uses this stain almost exclusively in blood work, and likewise finds it most convenient in the study of the various exudates, such as gonorrhœal discharge, the sputa, etc. He can recommend it without reserve, and regards its discovery as a decided advance in laboratory technique.

Bad Breath.—B. Fraenkel (*Archiv für Laryngologie und Rhinologie*, Heft 1, 1900; *Albany Medical Annals*, May) states that in some cases the offensive odor does not really exist, but is a pure delusion, a subjective sensation, as in paranoia and hypochondriasis. If, for example, a person to whom one of these hypochondriacs happens to be talking should turn away the head, he imagines that it is on account of the bad smell he is distributing. The author only considers that class of cases in which an odor is perceptible during expiration. In order to make a correct diagnosis it is important to determine whether the odor comes from the nose or mouth. The patient is told to keep the mouth tightly closed and to blow, first through one nostril and then through the other. The examining physician brings his own nose close to that of the patient, and is then able to detect any odor in the current of air. The patient then repeats this process by closing the nostrils and blowing out of the mouth. After it is determined that the odor comes from the mouth or pharynx, the suspicious places are touched with cotton so as to find out whether the odor originates in some particular part of the mouth or pharynx. Carious teeth are of course frequent causes. Retained decomposing secretions in the crypts of the tonsils frequently cause the odor. This is particularly true of secretion behind the plica tonsillaris. Applications of antiseptic solutions to the tonsils or amputation of the tonsils is the remedy. Sometimes the entire secretion of the nasal and pharyngeal mucous membrane has the disagreeable odor. In such cases antiseptic douches and mouth washes must be used. It must also be determined whether the odor does not originate in the deeper respiratory passages or the œsophagus.

Laparotomy for Abdominal Wounds in War.—Mr. Frederick Treves (*British Medical Journal*, May 12th), in a paper on The Wounded in the Present War, recently read before the Royal Medical and Chirurgical Society, enumerates the circumstances in favor of operations as follows: 1. If the patient is seen before seven hours, which is not an unreasonable limit. 2. If the patient has had a short and easy transport. They had many of those. 3. An empty stomach. He would say that in some few antero-posterior wounds of the abdomen above the umbilicus it is a *sine qua non* that it should be a case with an escaped bullet, especially when associated with extensive hæmorrhage. Then he deliberately believes that a patient ought to be operated upon. It might be thought that such cases would be very common; but, in fact, they are very uncommon. The circumstances against operation are: 1. If the patient is not seen till more than seven hours after the wound. He does not say that this is an absolute bar, but it is one argument against operation. 2. If there has been a long and arduous transport. 3. If he has been wounded soon after a meal. That is very improbable. 4. He would exclude all cases of transverse or oblique wounds above the umbilicus, because it is practically impossible to do all that is required. He did some operations in such cases, and found six, eight, ten, twelve openings in the bowel, and when he had seen to these he had six holes in the mesentery, and very likely wounds in the liver. He referred to transverse or oblique wounds. 5. He excluded all cases of retained bullet. We can see the point of entrance, but where is the bullet? It may have gone this way or it may have gone that way; we do not know anything about it. We can not in the field embark on any of those operations where we can bring out the viscera in the same way as we might post mortem. It may be very well in a hospital, but it can not be done in the field. He would not touch such a case. 6. He would exclude all cases of wound of the liver, of the spleen, and of the kidney. There were such cases in large numbers. A certain famous officer had a shrapnel bullet go through the liver and through the right kidney. He had come home here and was now quite well. 7. Most wounds below the umbilicus did all right if they were left alone. 8. Lastly, he would not operate upon a case in which he thought the colon was implicated alone (he might except the transverse colon), because the cases did very well if they were left alone. But with an antero-posterior wound with an escaped bullet, which was a *sine qua non*—that was to say, if where it went in and where it came out could be seen—he believed he had learned that the bowels did not move after they had been struck.

Artificial Production of Gout in Birds, and Lime as a Remedy for Gout.—The *Polyclinic* for April, 1900, says that an interesting report has recently been made by Kionka, in the *Berliner klinische Wochenschrift*, upon a new method of producing gout in birds. As is well known, this may be done by ligating the ureters or by the ingestion of chromic acid, but Kionka effected it by affecting the nutrition. A group of hens was fed upon an exclusive diet of lean horseflesh and water. The birds at first thrived on this, but in about three months' time symptoms of gout began to manifest themselves. The hens became unsteady in their gait and tender in their feet, the joints became swollen, and they would lie on the ground unwilling to move, with their legs drawn up under them. These symptoms came in paroxysmal attacks at first, but soon became constant, the appetite began to fail, the feet remained swollen and crippled, and the birds lost weight rapidly, and finally died. There were well-marked concretions of urates in the swollen joints and between the tendons of the legs and feet. In many of the autopsies deposits of urates were found in the peritonæum, and uric-acid infarcts in the kidneys.

During their illness the hens showed a marked craving for lime, and when this was supplied to some of them they ate greedily of it, and at the same time drank enormously increased amounts of water. The result was a great increase in the bulk of their excrement, and a diminution of from thirty-five to fifty per cent. in the amount of uric acid excreted, which would appear to indicate that the lime either enters into combination with the acid nitrogenous compounds, neutralizing them and promoting their elimination, or in some way promotes the formation of the urea group or the urates instead of the irritating uric acid. That this is its rôle in the human body has been suspected by several observers, although denied by others, and Van Noorden has recommended the use of lime in the treatment of the uric-acid diathesis. Its effect must be produced indirectly, and the *Polyclinic* thinks that one should certainly hesitate somewhat in reasoning from its results upon the bird organism, where the tendency is for the great majority of the nitrogenous excreta to assume the form of the uric-acid group, to its effects upon the mammalian, where the normal tendency is equally strong in the direction of the urea group.

A Queer Conception.—A woman named Akroyd, says *The Barrister*, cited by the *New Orleans Medical and Surgical Journal* for June, was tried before the court of Queen's Bench in Dublin for refusing to produce a child which she had abducted. Some amusement was created in court when the prisoner was sentenced to six months, without hard labor, in Richmond prison, which is only for the incarceration of males. Carved in the stonework over the main entrance to the prison are the following words: "Cease to do evil, learn to do well." The commitment was made the subject of the following lines:

In most earthly tribunals some harshness prevails,
  But the court of Queen's Bench is both prudent and mild;
It committed Miss A. to the prison for males,
  As the readiest mode of producing a child.
How she'll do so surpasses conception to tell,
Should she "cease to do evil, and learn to do well";
And if in six months, without labor confined,
She produces a child, she'll astonish mankind.

An Alumni Association of St. Vincent's Hospital.—On Monday evening, June 18th, an association of former members of the house staff of St. Vincent's Hospital, New York, was organized, and officers were elected as follows: President, Dr. Charles H. Lewis; vice-president, Dr. Charles L. Weeks; secretary and treasurer, Dr. Joseph A. Dillon. The association will hold its meetings quarterly. Out-of-town graduates of the hospital who have not received notification of the meeting are requested to communicate with the secretary, No. 967 Lexington Avenue.

St. John's Guild opened its seaside hospital at New Dorp, Staten Island, on June 15th for the reception and care of sick children and their mothers. Patients are being conveyed to the hospital free of cost by the 10 A. M. and 2.30 P. M. Staten Island ferry, under the care of a nurse and orderly, until the floating hospitals are put into commission, which will be in the early part of July. All patients are admitted free without regard to creed, color, or nationality. Physicians may obtain tickets for distribution among their patients at the office of the guild, No. 501 Fifth Avenue, upon application.

[Signed.] William H. Burr,
Chairman, Committee on Seaside Hospital.

Medical Duels.—The *British Medical Journal* for June 16th, commenting upon the recent duel between M. Pozzi, the distinguished French surgeon, and Dr. Devilliers, says: "There is something, to our mind, particularly ridiculous in duels between men whose business it is not to make wounds but to heal them. If their outraged feelings can be soothed only by inflicting bodily suffering on the offender, let them try on each other the effects of the last new pharmaceutical specialties or patent foods. This would slake the thirst for vengeance in a satisfactory manner, and at the same time the combatants would have the sense that they were advancing science."

United States Military Surgery to be Represented at the British Medical Association.—According to the *British Medical Journal* for June 16th, among the list of the expected speakers in the Section on Army, Navy, and Ambulance at the British Medical Association's annual meeting at Ipswich, to be held from July 31st to August 3d inclusive, occurs the name of Surgeon-General Sternberg, director general, United States army.

The Insidious "Puff" Contributor.—Dr. Chassaignac, in a paper of medical journalism (*New Orleans Medical and Surgical Journal*, June), says: "While the great importance of giving publicity to everything deserving of it is obvious, the reader, whom only the proper selections and siftings reach, has no idea of the care necessary to prevent the slipping in of improper papers or reports of cases written for pay by authors who merely wish to puff some special preparation. It takes great vigilance to detect in those sometimes well and ingenuously written, but dishonest and consequently dangerous articles, the hidden scheme, the sly reference to the product it is intended to boost. Such an instance came to the writer's notice recently. A quite well-written article came in, having been mailed at a town in an adjoining State; with it was the request for the return of the article to such and such an address in that town in case of its non-acceptance, and for a goodly number of reprints in the event of its publication. When the paper was carefully scanned, an innocent-looking reference to a proprietary article was detected, and was easily determined to be its *raison d'être*. The manuscript was returned forthwith to the supposed writer, and in due time came back again with the indorsement by the postal service to the effect that no such person could be found at the address given, and he was never heard of again. The inference is obvious. We have ourselves been victimized more than once in this way. It would be obviously unfair, for instance, in a report of a case of apparently sufficient intrinsic value to be worthy of publication, to eliminate all mention of every preparation which the writer may have used, but which did not happen to be official. The problem before the editor is to decide whether the preparation is an incident in the article, or the article an episode of the preparation, which decision is by no means always easy. Not only the general trend of the article, but the author's reputation if known, his qualifications, the fact of the paper having been read before a reputable society, and many other factors enter into the decision. There is only one way to deal with such cases. When once victimized, our own rule is never to accept from the offending author in future any communication whatever, no matter on what subject it may be, or howsoever innocent it may appear."

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